

ISSN[ONLINE] : 2643-9875

ISSN[PRINT] : 2643-9840

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# INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS

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**VOLUME 06 ISSUE 06  
JUNE 2023**

**SJIF IMPACT  
FACTOR : 7.022**

**IJMRA ASI  
SCORE : 1.3**

**CROSSREF DOI  
10.47191/IJMRA**

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**International Journal of Multidisciplinary Research and Analysis**  
**ISSN[Online] : 2643-9875 || ISSN[Print] : 2643-9840**

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# The Influence of Learning Motivation, Nutritional Status and Physical Fitness on the Learning Outcomes of Pjok Siswa Smp N 1 Sungai Beremas



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**ABSTRACT:** The purpose of the study was to determine the effect of learning motivation, nutritional status and physical fitness on the learning outcomes of junior high school students. This type of research is included in correlation research using a path analysis model. The population in this study is all students of SMPN 1 Sungai Beremas District. Sampling is purposive sampling, the sample in this study is only male students in class VIII with a total of 50 people. The results of the study are: The first hypothesis proposed in this study is that there is an effect of learning motivation (X1) on physical fitness (Y) students. The second hypothesis proposed in this study is that there is an effect of nutritional status (X2) on physical fitness (Y) students. The third hypothesis proposed in this study is that there is an influence of learning motivation (X1) on student learning outcomes (Z). The fourth hypothesis proposed in this study is that there is an effect of nutritional status (X2) on student learning outcomes (Z). The fifth hypothesis proposed in this study is that there is an effect of physical fitness (Y) on student learning outcomes (Z). The sixth hypothesis proposed in this study is that there is an indirect influence of learning motivation (X1) on learning outcomes (Z) through physical fitness (Y) students. The seventh hypothesis proposed in this study is that there is an indirect influence of nutritional status (X2) on learning outcomes (Z) through physical fitness (Y) students. It was concluded that there was an influence of learning motivation, nutritional status and physical fitness on the learning outcomes of female students.

**KEYWORDS:** Learning Motivation, Nutritional Status, Physical Fitness, Learning Outcomes Pjok

## I. INTRODUCTION

Achmad et al., (2018); Bangun & Zaluku, (2019) Physical education, sports and health (PJOK) subjects are one of the compulsory subjects at every level of education in Indonesia, starting from primary education to upper secondary education. In the implementation of learning in schools, PJOK subjects can be said to be one of the unique subjects because it is very different from other subjects in schools, where these subjects not only focus on cognitive, but also focus on psychomotor and affective students (Idham et al., 2022; Subarjah, 2016).

Putra et al., (2022); Vera, (2021) In the implementation of PJOK learning in schools, most of the material is given in the form of practice in the field, so it is very necessary for the readiness of students, especially physically so that the implementation of PJOK learning can run well. Apart from physical factors, many other factors can affect the success of the learning process including: level of physical fitness, nutritional status, learning motivation, facilities and infrastructure, parental attention, school environment, and learning models used by teachers (Hamdi, 2021; Nanda, 2020; Warda et al., 2021).

Suharjana dalam Zamzmi, (2022) Physical fitness is a person's ability to be able to carry out daily activities according to work without excessive fatigue so that they can still enjoy time. This certainly plays an important role in determining student success in carrying out all daily routines including PJOK learning. Students who have good physical fitness will be able to follow all the material provided by the teacher, both theory and practice, while students who have low physical fitness will certainly find it difficult to carry out all activities, especially related to physical activities such as PJOK subjects (Aryadi, 2020; Chan, 2021; Ziad, 2015).

Andika, (2020) In nutritional status is the expression of a state of balance in the form of certain variables or it can be said that nutritional status is an indicator of good and bad daily food supply. Good nutritional status indicates that students have consumed nutritious foods that can support student activities at school (Beauty et al., 2020; Osrita et al., 2020; Syampurma,

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2016). Furthermore, the factor that can affect students' PJOK learning is motivation. Okki, (2021) is a drive that comes from within man himself. This certainly can affect the results in learning PJOK at school, if students have high learning motivation, it will make students learn seriously even though they are not supervised by the teacher (Ilahi, 2023; Misbahuddin, 2019; Sallianto, 2018).

Furthermore, the factor that can affect success in learning PJOK is the availability of facilities and infrastructure in schools. Facilities and infrastructure are certainly the needs of teachers and students so that all material can be delivered optimally. The lack of facilities and infrastructure will cause hampering of learning materials provided by teachers, so it is expected that these facilities and infrastructure have been fulfilled by the school before learning begins (Aulia et al., 2022; Kapti & Winarno, 2022; Rahmawati, 2021). Furthermore, the factor that can affect PJOK learning is the school environment. The success of learning in schools is greatly influenced by a conducive school environment. Schools must be able to provide a supportive atmosphere so that students can study calmly and comfortably so that student learning outcomes are also good (Apriyano, 2017; Jamal et al., 2022).

Next is the learning model used by teachers. Currently, there are so many learning models and approaches used by teachers in learning so that learning can run well and students can understand the material well. Among these learning models are problem-based learning, project-based learning, discovery learning and various other learning models that can be used by teachers to improve student learning outcomes in schools (Arief, 2022; Hartono & Akhiruyanto, 2019). The next factor is parental support. This is the initial capital of all student success in every activity including PJOK learning at school. Students who get support from parents will make students feel more cared for so that it will be an encouragement from outside the student (Hidayat et al., 2022; Merchán-Sanmartín et al., 2022).

Of the many schools in West Pasaman Regency, Sekolah Menengah Junior Negeri 1 Sungai Beremas is one of the schools that has met almost all of the above learning support factors, but based on observations made and interviews with PJOK teachers at SMPN 1 Sungai Beremas, information was obtained that PJOK learning is still not running optimally so that there are still many students who get scores below KKM, this is likely caused by low physical fitness, this can be seen when students carry out learning activities, many students quickly experience fatigue, another factor that is thought to affect the lack of optimal PJOK learning at SMP N 1 Sungai Beremas is the low nutritional status and also the excess nutritional status possessed by students of SMP N 1 Sungai Beremas, it can be seen that many students are thin and also have excess weight, The last factor that is suspected to be the cause of not maximizing PJOK learning at SMP N 1 Sungai Beremas is the low motivation to learn owned by students, it can be seen that many students are not enthusiastic in learning PJOK and students are only excited about certain subjects such as football, volleyball and badminton.

Not yet maximized PJOK learning at SMP N 1 Sungai Beremas must be overcome immediately, so that students can carry out learning well in all subjects, therefore, researchers are interested in conducting research to see the influence given by physical fitness, nutritional status and learning motivation on the learning outcomes of PJOK students of SMP N 1 Sungai Beremas, From this research, it is expected to provide solutions to the problems faced by SMP N 1 Sungai Beremas.

## **II. MATERIAL AND METHODS**

This type of research is included in correlation research using a path analysis model because between independent variables and dependent variables there is an influencing mediation. The path analysis method is a method that examines the direct or indirect influence or effect of hypothesized variables as a result of the influence of treatment on these variables.

The time and place of the study will be conducted in February 2023 at SMP Negeri 1 Sungai Beremas, West Pasaman Regency. According to Sugiyono, (2008) Population is a generalized area consisting of objects / subjects that have certain qualities and characteristics that are determined by researchers to be studied and then drawn conclusions ". Almost similar things are said Arikunto, (2008) says "population is the whole subject of study. The population in this study was all students of SMPN 1 Sungai Beremas District.

The sample is the part of the population that is the center of research attention, within a predetermined scope and time, (Winarno, 2011). In this study, sampling was carried out by purposive sampling, namely sampling due to certain considerations, while the sample in this study was only male students in class VIII with a total of 50 people, while the thing to consider was that this group of students was the one who received the lowest learning outcomes in the even semester of the 2021/2022 academic year.

Operational Definition of variables and research instruments, so that various interpretations do not occur, for more details the variables to be examined in this study are as follows: 1) Learning motivation referred to in this study is motivation originating from within students (intrinsic) and motivation from outside students (extrinsic) which is measured using questionnaires. 2) The

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nutritional status referred to in this study is nutritional status measured using the body mass index formula. 3) Physical fitness referred to in this study is the ability of students to carry out all daily activities optimally without experiencing significant fatigue as measured by using the Nusantara Student Physical Fitness test. 4) The learning outcomes that become the benchmark in this study are the results of the UTS / UAS exam that has been taken by students.

The data analysis technique used in this study is to use Path Analysis (Path Analysis) developed by Sewall Wright (1960) with the aim of explaining the direct and indirect effects of a set of causal variables (exogenous variables) to a set of consequent variables (endogenous). When going to perform path analysis, a causal relationship structure must first be drawn diagrammatically between the cause variable and the effect variable hereinafter referred to as the Path diagram (Path diagram). The path analysis was carried out using the SPSS version 25 program.

### III. RESULTS AND DISCUSSION

#### Result

The description of data in this study was carried out to see a descriptive picture of research data consisting of data: learning motivation (X1), nutritional status (X2), physical fitness (Y) and learning outcomes (Z). The data description of each variable is as follows:

#### 1. Learning Motivation

To obtain learning motivation data, it was carried out using a questionnaire with a total of 40 points of statements given to 46 respondents. The results of learning motivation data obtained an average of 84.74, median 85, mode 85.5, standard deviation 2.77, highest score 90.50 and lowest score 79.

#### 2. Nutritional Status

To obtain nutritional status data was carried out using the body mass index by measuring body weight and height to 46 sampled people. The results of nutritional status data obtained an average of 18.33, median 18.6, mode 18.6, standard deviation 2.19, highest score 24.89 and lowest score 12.82.

#### 3. Physical Fitness

To obtain physical fitness data, it was carried out using the Indonesian Student Fitness Test (TKPN) which was given to 46 samples. The results of physical fitness data obtained an average of 4.87, median 4.7, mode 4.0, standard deviation 1.20, highest score 8.51 and lowest score 2.03.

#### 4. Learning Outcomes

To obtain data on learning outcomes, it was carried out by taking UTS scores for the even semester of the 2022/2023 academic year from 46 samples. The learning outcome data obtained an average of 80.67, median 80, mode 80, standard deviation 5.53, highest score 95 and lowest score 70.

#### Test Analysis Requirements

Before data analysis is carried out, analysis requirements tests are first carried out consisting of normality tests and multicollinearity tests:

#### a. Normality Test

The normality test was conducted using the Shapiro-Wilk normality test against all research data consisting of data on learning motivation, nutritional status, physical fitness and learning outcomes. The results of the Shapiro-Wilk normality test are as follows:

**Table 1. Normality Test Shapiro-Wilk**

Tests of Normality			
	Shapiro-Wilk		
	Statistic	df	Sig.
Learning Motivation	.981	46	.663
Nutritional Status	.968	46	.228
Physical Fitness	.981	46	.639
Learning Outcomes	.972	46	.320

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## b. Multicollinearity Test

The next requirement test is to use the multicollinearity test, while the results of the multicollinearity test are as follows:

**Table 2. Multicollinearity Test**

Coefficients <sup>a</sup>			
Type		Collinearity Statistics	
		Tolerance	VIF
1	Learning Motivation	.988	1.012
	Nutritional Status	.973	1.027
	Physical Fitness	.971	1.030
a. Dependent Variable: Hasil_Belajar			

\*. This is a lower bound of the true significance

a. Lilliefors Significance Correction

Based on table 1, it can be known the results of the shapiro-wilk test, each data including learning motivation obtained Sig value 0.663, nutritional status Sig value 0.228, physical fitness Sig value 0.639 and learning outcomes Sig value 0.320 all Sig values > 0.05. Test criteria:

If the Sig value > 0.005, H<sub>0</sub> is accepted and H<sub>a</sub> is rejected, meaning that the data is normally distributed. If the Sig value < 0.05, H<sub>0</sub> is rejected and H<sub>a</sub> is accepted, meaning that the data is abnormally distributed. Based on the table above and the criteria, it is concluded that all data in this study are normally distributed.

Based on table 2 above, it can be known the VIF value of each variable as follows: learning motivation VIF = 1,012, nutritional status VIF = 1,027, physical fitness VIF = 1,030. Test criteria Multicollinearity occurs if the value VIF > 2; Multicollinearity does not occur if the value VIF ≤ 2). Based on the table above and the criteria, it was concluded that all data in this study did not occur multicollinearity.

## Hypothesis Testing

To test the hypothesis in this study was carried out by path analysis (path analysis) after testing the requirements of data analysis. The criteria for hypothesis testing are as follows:

H<sub>0</sub>: accepted if the observation Sig value > 0.05

H<sub>a</sub>: accepted if the observation Sig value < 0.05

The results of hypothesis testing in this study are as follows:

### 1. There is an influence of learning motivation (X1) on the physical fitness (Y) of SMP N 1 Sungai Beremas students.

The first hypothesis in this study is that there is an influence of learning motivation (X1) on physical fitness (Y) of students of SMP N 1 Sungai Beremas. It is known that the Sig value is 0.595 > 0.05 and the Beta value is 0.081 so that H<sub>0</sub> is accepted and H<sub>a</sub> is rejected thus it can be said that there is no significant influence by learning motivation (X1) on physical fitness (Y) of SMP N1 Sungai Beremas students, then to find out the magnitude of the influence given by learning motivation (X1) on physical fitness (Y) of SMP N1 Sungai Beremas students can be determined in the following way:

$$K = \rho_{y1}^2 \times 100\%$$

$$K = 0.081^2 \times 100\%$$

$$K = 0.66\%$$

Based on the calculation of the contribution above, it can be seen that the influence given by learning motivation (X1) on the physical fitness (Y) of N1 Junior High School students is very small, which is 0.66%.

### 2. There is an effect of nutritional status (X2) on physical fitness (Y) of students of SMP N 1 Sungai Beremas

The second hypothesis in this study is that there is an influence of nutritional status (X2) on physical fitness (Y) of students of SMP N1 Sungai Beremas, it is known that the Sig value is 0.338 > 0.05 and the Beta value is 0.146 so that H<sub>0</sub> is accepted and H<sub>a</sub> is rejected thus it can be said that there is no significant influence by nutritional status (X2) on physical fitness (Y) of SMP N1 Sungai Beremas students, Furthermore, to determine the magnitude of the influence given by nutritional status (X2) on physical fitness (Y) of students of SMP N1 Sungai Beremas can be determined in the following way:

$$K = \rho_{y2}^2 \times 100\%$$

$$K = 0.146^2 \times 100\%$$

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$$K = 2.13\%$$

Based on the calculation of the contribution above, it can be seen that the influence given by physical fitness (X2) on the physical fitness (Y) of N1 Junior High School students is very small, which is 2.13%.

### 3. There is an Influence of Learning Motivation (X1) on Learning Outcomes (Z) of SMP N 1 Sungai Beremas students

The third hypothesis in this study is that there is an influence of learning motivation (X1) on the learning outcomes (Z) of N1 Sungai Beremas Junior High School students, it is known that the Sig value is  $0.897 > 0.05$  and the Beta value is  $0.019$  so that  $H_0$  is accepted and  $H_a$  is rejected thus it can be said that there is no significant influence by learning motivation (X1) on the learning outcomes (Z) of N1 Sungai Beremas Junior High School students, Furthermore, to determine the magnitude of the influence given by learning motivation (X1) on the learning outcomes (Z) of SMP N1 Sungai Beremas students can be determined in the following way:

$$K = \rho_{v1z}^2 \times 100\%$$

$$K = 0.019^2 \times 100\%$$

$$K = 0.04\%$$

Based on the calculation of the contribution above, it can be seen that the influence given by learning motivation (X1) on the learning outcomes (Z) of N1 Junior High School students is very small, which is 0.04%.

### 4. There is an Effect of Nutritional Status (X2) on Learning Outcomes (Z) of SMP N 1 Sungai Beremas students

The fourth hypothesis in this study is that there is an influence of nutritional status (X2) on the learning outcomes (Z) of N1 Sungai Beremas Junior High School students, it is known that the Sig value is  $0.545 > 0.05$  and the Beta value is  $-0.090$  so that  $H_0$  is accepted and  $H_a$  is rejected thus it can be said that there is no significant influence by nutritional status (X2) on the learning outcomes (Z) of N1 Sungai Beremas Junior High School students, Furthermore, to determine the magnitude of the influence given by nutritional status (X2) on the learning outcomes (Z) of SMP N1 Sungai Beremas students can be determined in the following way:

$$K = \rho_{v2z}^2 \times 100\%$$

$$K = 0.090^2 \times 100\%$$

$$K = 5.24\%$$

Based on the calculation of the contribution above, it can be seen that the influence given by nutritional status (X2) on the learning outcomes (Z) of N1 Junior High School students is very small, which is 0.81%.

### 5. There is an influence of physical fitness (Y) on the learning outcomes (Z) of SMP N 1 Sungai Beremas students.

The fifth hypothesis in this study is that there is an influence of physical fitness (Y) on the learning outcomes (Z) of students of SMP N1 Sungai Beremas, it is known that the Sig value is  $0.0545 > 0.05$  and the Beta value is  $-0.295$  so that  $H_0$  is accepted and  $H_a$  is rejected thus it can be said that there is no significant influence by physical fitness (Y) on the learning outcomes (Z) of SMP N1 Sungai Beremas students, Furthermore, to determine the magnitude of the influence exerted by physical fitness (Y) on the learning outcomes (Z) of SMP N1 Sungai Beremas students can be determined in the following way:

$$K = \rho_{yz}^2 \times 100\%$$

$$K = 0.295^2 \times 100\%$$

$$K = 8.70\%$$

Based on the calculation of the contribution above, it can be seen that the influence given by physical fitness (Y) on the learning outcomes (Z) of N1 Junior High School students is very small, which is 8.70%.

### 6. There is an indirect influence of learning motivation (X1) on learning outcomes (Z) through physical fitness (Y) of SMP N 1 Sungai Beremas students.

The sixth hypothesis in this study is that there is an indirect influence of Learning Motivation (X1) on Learning Outcomes (Z) through Physical Fitness (Y) Students of SMP N 1 Sungai Beremas, it is known that  $\rho_{yx1z} = -0.0239$  is smaller than  $r$  table =  $0.297$  meaning that  $H_0$  is accepted and  $H_a$  is rejected in other words the sixth hypothesis states There is an indirect influence Learning Motivation (X1) on Learning Outcomes (Z) through Physical Fitness (Y) Students of SMP N 1 Sungai Beremas rejected. When viewed from the influence given only by 0.06% is classified as very low.

### 7. There is an indirect influence of nutritional status (X2) on learning outcomes (Z) through physical fitness (Y) of SMP N 1 Sungai Beremas students.

The seventh hypothesis in this study is that there is an indirect influence of nutritional status (X2) on learning outcomes (Z) through physical fitness (Y) of junior high school students N 1 Sungai Beremas, Based on the calculation above, it can be seen

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that  $\rho_{yx2z} = -0.04307$  is smaller than  $r \text{ table} = 0.297$  meaning that  $H_0$  is accepted and  $H_a$  is rejected in other words the hypothesis of aiming which states there is an indirect influence of nutritional status (X2) on learning outcomes (Z) through physical fitness (Y) Students of SMP N 1 Sungai Beremas were rejected. When viewed from the influence given only by 0.19% is classified as very low.

### **DISCUSSION**

This study uses path analysis of learning motivation variables (X1), nutritional status (X2), physical fitness (Y) and learning outcomes (Z) using 6 research hypotheses with the following discussion :

#### **1. There is an influence of learning motivation (X1) on physical fitness (Y) of students of SMP N 1 Sungai Beremas**

The first hypothesis proposed in this study is that there is an effect of learning motivation (X1) on physical fitness (Y) of students of SMP N 1 Sungai Beremas. Based on the analysis of the data that has been done, Sig values of  $0.595 > 0.05$  are obtained so that  $H_0$  is accepted in other words that the first hypothesis proposed in this study is rejected.

Motivation is a psychological symptom in the form of a reciprocal impulse in a person either consciously or unconsciously to perform an action with a specific purpose (Appova & Arbaugh, 2018). Learning motivation is the overall driving force within students that causes learning activities, which guarantees the continuity of learning activities and which provides direction to learning activities, so that the desired goals can be achieved (A. D. A. De Silva et al., 2018). Learning motivation is a non-intellectual psychological factor that plays a role in generating passion for learning as well as feelings of pleasure and enthusiasm for learning (Zeyer, 2018). From some of the opinions above, it can be said that learning motivation is what drives that can cause passion for learning. From this definition, it can be understood that the learning motivation possessed by students will be able to determine the high and low enthusiasm of students in participating in the learning process, including students of SMP N1 Sungai Beremas.

Physical fitness is the quality of life in the form of the ability to do daily work diligently and swiftly, without significant fatigue, and still have the energy to enjoy leisure time and unexpected emergencies (Karhiwikarta, 2012). Physical fitness is needed not only by athletes for better performance but also for non-athletes to maintain physical and spiritual health (Prajapati et. al., 2008).

The rejection of the first hypothesis in this study indicates that there is no significant influence by learning motivation on physical fitness owned by SMPN 1 Sungai Beremas students. This can occur possibly because motivation does not directly affect physical fitness, as revealed by the Ministry of Health of the Republic of Indonesia (2005) There are many factors that affect a person's physical fitness level, including physical activity, nutritional status, and smoking behavior, this opinion is reinforced from the results of a survey conducted by the Center for Physical Freshness of the Ministry of National Education (Depdiknas) previously, Information was obtained that the learning outcomes of Penjasorkes in schools were only able to provide physical freshness effects on approximately 15 percent of the entire student population (Prianto, 2022). Another factor that causes the absence of the influence of learning motivation on physical fitness is the time available in the Penjasorkes lessons. It was found that 25 minutes/week of moderate to vigours of physical activity in schools was very inadequate based on national recommendations (National Institute of Child Health and Human Development Study of Early Child Care and Youth Development Network, 2003) in (Prianto, 2022).

#### **2. There is an effect of Nutritional Status (X2) on the physical fitness (Y) of SMP N 1 Sungai Beremas students**

The second hypothesis proposed in this study is that there is an effect of nutritional status (X2) on physical fitness (Y) of students of SMP N 1 Sungai Beremas. Based on the data analysis that has been done, Sig values of  $0.338 > 0.05$  are obtained so that  $H_0$  is accepted in other words that the second hypothesis proposed in this study is rejected.

According to Soekirman (2000) nutritional status is a state of health due to the interaction between food, the human body and the human environment. Direct nutritional status assessment can be divided into four assessments, namely; anthropometric, clinical, biochemical, and biophysical. Anthropometry as an indicator of nutritional status, can be done by measuring several parameters. One such parameter is Body Mass Index (BMI). BMI is a simple method to monitor a person's nutritional status, especially those related to underweight or overweight (Apriyano et al., 2020; Sukendro et al., 2021).

The rejection of the hypothesis in this study means that there is no significant influence by nutritional status on physical fitness owned by SMPN 1 Sungai Beremas students. Based on research data, it can be seen that some students still have nutritional status in the less classification and also some students have nutritional status in the excess classification and most students of SMPN 1 Sungai Beremas have nutritional status in the normal classification. There are several factors that may cause the rejection of the hypothesis in this study, including: the influence of gadgets, Internet access, online games and all the



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conveniences produced by smartphones that cause all work to be done practically. Fully automated equipment such as electronic ladders and remote controls make people relatively non-physical activity (Mutohir & Maksum, 2007). Due to advances that make the work of the younger generation more practical so that lack of movement and low desire to exercise, according to (Holt et al, 2002) fitness will decrease by 50% after stopping exercise or exercise for 4-12 weeks and will continue to decrease to 100% for 10-30 weeks.

### **3. There is an Influence of Learning Motivation (X1) on Learning Outcomes (Z) of SMP N 1 Sungai Beremas students**

The third hypothesis proposed in this study is that there is an influence of learning motivation (X1) on the learning outcomes (Z) of SMP N 1 Sungai Beremas students. Based on the data analysis that has been done, Sig values of  $0.897 > 0.05$  were obtained so that H0 was accepted in other words that the third hypothesis proposed in this study was rejected.

With the diversity that exists, each of these students certainly has different abilities or interests. This should require intensive attention from Physical Education, Sports and Health teachers. However, the facts in the field have not been in accordance with what was expected because teachers have not optimized play opportunities for students, resulting in difficulties in mastering the competencies taught (ASTUTI & ERIANTI, 2022; Sunandar et al., 2022).

### **4. There is an Effect of Nutritional Status (X2) on Learning Outcomes (Z) of SMP N 1 Sungai Beremas students**

The fourth hypothesis proposed in this study is that there is an effect of nutritional status (X2) on the learning outcomes (Z) of SMP N 1 Sungai Beremas students. Based on the analysis of the data that has been done, Sig values of  $0.545 > 0.05$  are obtained so that H0 is accepted in other words that the fourth hypothesis proposed in this study is rejected.

Status gizi adalah suatu ukuran mengenai kondisi tubuh seseorang yang diakibatkan oleh makanan yang consumption and use of nutrients needed by the body to form tissues and organs with their respective functions in a system, so as to produce growth (physical) and development (mental), intelligence, and productivity as a condition for achieving a healthy, fit and prosperous level of life (Astuti & Kumar, 2019; Candra et al., 2023). External factors, in this external factor, researchers analyzed two sub-factors, namely the social environment and the non-social environment which is one of the factors that affect the learning outcomes of Physical Education, Sports and Health.

### **5. There is an influence of physical fitness (Y) on the learning outcomes (Z) of SMP N 1 Sungai Beremas students.**

The fifth hypothesis proposed in this study is that there is an effect of physical fitness (Y) on the learning outcomes (Z) of SMP N 1 Sungai Beremas students. Based on the analysis of the data that has been done, Sig values of  $0.0545 > 0.05$  are obtained so that H0 is accepted in other words that the fifth hypothesis proposed in this study is rejected. Physical fitness is one component in human life that is indispensable, so that all daily activities can run well. Physical fitness can be obtained by doing physical activity regularly, measurably, and programmatically. Good physical fitness is the main basic capital for a person to do physical activity repeatedly for a relatively long time without causing significant fatigue (Biddle et al., 2004; Shull et al., 2020).

The rejection of the hypothesis in this study proves that not always students who have good physical fitness are followed by good learning outcomes, on the contrary students who have low physical fitness also do not always have low learning outcomes, this can happen because good physical fitness must be followed by other factors in order to achieve good learning results, among them are: intelligence skills, parental support and also the school environment.

### **6. There is an indirect influence of learning motivation (X1) on learning outcomes (Z) through physical fitness (Y) of SMP N 1 Sungai Beremas students.**

Hipotesis keenam yang diajukan dalam penelitian ini adalah Terdapat pengaruh tidak langsung motivasi belajar ( $X_1$ ) terhadap hasil belajar (Z) melalui kebugaran jasmani (Y) siswa SMP N 1 Sungai Beremas. Berdasarkan analisis data yang telah dilakukan diperoleh  $\rho_{yx1z} = -0,0239$  lebih kecil dibandingkan dengan  $r$  tabel = 0.297 sehingga H0 diterima dengan kata lain bahwa hipotesis keenam yang diajukan dalam penelitian ini ditolak.

(Riyoko et al., 2019) Motivation is the driving force, direction and reinforcing behavior. Learning motivation can be seen from the character of student behavior which involves interest, sharpness of attention, concentration and diligent in achieving goals. Physical fitness is a physical condition related to the ability and ability to function at work optimally and efficiently. Physical fitness better describes the quality of the ability of body organs to carry out their functions and the continuity of those functions occurs in a system (Batista et al., 2019; Trudeau & Shephard, 2008).

The absence of an indirect influence of learning motivation on learning outcomes through physical fitness is due to the low correlation between the variables obtained namely motivation with physical fitness and learning outcomes. Directly, the relationship between motivation and fitness is not significant so that it does not have a significant impact on the learning outcomes of SMPN 1 Sungai Beremas students.

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### 7. There is an indirect influence of nutritional status (X2) on learning outcomes (Z) through physical fitness (Y) of SMP N 1 Sungai Beremas students.

The seventh hypothesis proposed in this study is that there is an indirect influence of nutritional status (X2) on learning outcomes (Z) through physical fitness (Y) of students of SMP N 1 Sungai Beremas. Based on the analysis of the data that has been done,  $\rho_{yx2z} = -0.04307$  is smaller than  $r_{table} = 0.297$  so that  $H_0$  is accepted in other words that the seventh hypothesis proposed in this study is rejected.

Dwijayanthi (2011: 105) said that the characteristics of children who have good nutritional status, namely weight growth in accordance with height and not easily tired. Next Kastrena et al., (2020) said that children with good nutritional status have high endurance and have good work power so that children are excited and active in the learning process. However, if the nutritional condition is not good, it will make interest and enthusiasm for learning decrease which certainly affects the learning process. If the learning process is disrupted, then the learning outcomes will also be disrupted so that students get low learning outcomes. The rejection of the seventh hypothesis in this study can be caused by the low direct relationship between nutritional status and physical fitness, resulting in no indirect influence by nutritional status on student learning outcomes through physical fitness.

#### IV. CONCLUSION

Based on data analysis and discussion in the previous chapter, the conclusions in this study are as follows: 1) There is no significant influence by learning motivation on students' physical fitness. 2) There is no significant effect by nutritional status on students' physical fitness. 3) There is no significant influence by learning motivation on student learning outcomes. 4) There is no significant effect by nutritional status on student learning outcomes. 5) There is no significant effect by physical fitness on student learning outcomes. 6) There is no indirect influence of learning motivation on learning outcomes through students' physical fitness. 7) There is no indirect influence of nutritional status on learning outcomes through students' physical fitness.

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## Exemplary Method of Environmental Cadres: Strategy for Creating Civic Responsibility in Handling Climate Change through the Climate Village Program



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**ABSTRACT:** Climate change mitigation is the civic responsibility towards the environment. Climate change causes various adverse impacts on human health and survival. Reducing these negative impacts as a responsible citizen must create a sustainable environment, but not all citizens have the character of responsibility. This study aims to describe the exemplary method of environmental cadres as a strategy to create the character of civic responsibility in handling climate change through the Climate Village Program. This study uses a qualitative descriptive research type. Data collection techniques using observation, interviews, and documentation. Data analysis in this study uses data reduction, data presentation, conclusions, and verification. The results of this study indicate that exemplary methods by environmental cadres can create the character of civic responsibility in handling climate change through the Climate Village Program which is demonstrated by the ability of residents to carry out climate change mitigation actions, awareness of citizens in maintaining cleanliness, ability to manage and preserve the environment. Environmental cadres are residents who have knowledge, skills, and a more competent attitude towards environmental responsibility than other residents so every action of environmental cadres becomes an example for other residents to emulate.

**KEYWORDS:** Exemplary method, Environmental cadres, Civic responsibility, Climate change, Climate Village Program

### I. INTRODUCTION

The environment is defined as an area or area for living belonging to all living things or inanimate objects (Sadiku, Ashaolu, Majebi & Musa, 2020). Sir EJ Ross, defines the environment as the collection of all external conditions and effects that govern the life and development of organisms (Kumar, 2018). Environmental degradation is a significant concern in today's modern period because it endangers the survival of living things in various countries. Environmental Issues have been discussed since the 1990s. Data from the United Nations Environment Program (UNEP) in 1991, more than 6.1 billion hectares of dry land, of which 70% had become desert due to drought. The data report shows the importance of development goals in balance with environmental preservation (Christmas and Aminah, 2019). The problem of environmental damage affects human life such as climate change, resource depletion, water and air pollution, and decreased biodiversity (Gkargkavouzia, Halkosb & Matsiori, 2019). A changing climate is characterized by widespread and continuous increases in temperature and rainfall as well as other elements such as ambient pressure and humidity (Abbas, et al, 2021). According to the Meteorology, Climatology & Geophysics Agency's (BMKG) statistical report on warming or temperature rise, 2020 is classified as the second warmest year, with an anomaly value of 0.7°C, while 2019 is in third place with an anomaly value of 0.6 °C.

The government makes policies related to environmental management as a way to overcome various environmental problems. Through this policy, it is hoped that procedures for managing or extracting natural resources will become wiser. Indonesian government regulations or policies as a step to overcome environmental problems, especially climate change, is to initiate the Climate Village Program. Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number P.84/Menlhk-Setjen/Kum.1/11/2016 concerning the Climate Village Program states that this program is national in scope and managed by the Ministry of Environment and Forestry to increase community and stakeholder involvement others to strengthen adaptive capacity to the impacts of climate change and reduce greenhouse gas emissions as well as provide recognition for climate change adaptation and mitigation efforts that have been made which can improve welfare at the local level by regional conditions. The Climate Village Program (ProKlim) is a climate change adaptation and mitigation program intended to be implemented by the government and related parties in the context of combating and managing climate change (Wangi and Muljono, 2020). The

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Climate Village Program is also a form of handling climate change and greenhouse gas emissions from the sustainable development goal of point number thirteen. Sustainable development in the Brundtland report is a development that meets the needs of the present without compromising the needs of future generations (Tiwari and Thakur, 2020).

The implementation of the Climate Village Program requires the cooperation and responsibility of various parties, such as the Environmental Service, environmental cadres, residents, and other parties. Responsibility is a person's ability to react or respond to things done (Lickona, 2015). Maintaining a healthy and good environment is the responsibility of every citizen of existing environmental problems (Asshiddiqie, 2009). The responsibility of this citizen is one of the knowledge, skills, and attitudes that must be owned by a good citizen or a competent citizen. Citizens are very important people in mitigation and adaptation activities in dealing with climate change. Citizens must be required to have a sense of awareness of protecting the environment and responsibility for environmental problems that exist in their area. If residents have the character of responsibility for the environment, then residents will be able to deal with climate change appropriately. But not all citizens who have implemented the Climate Village Program or residents whose areas where they live are appointed to implement the Climate Village Program have good environmental responsibility characteristics.

One of the regions in Indonesia that have implemented the Climate Village Program is the Selosari Village, Magetan Regency. This area has been prepared since 2019 by the Magetan Regency Environmental Service to carry out the Climate Village Program. The Climate Village Program implemented in the Selosari Village, Magetan Regency, is one of the programs to form environmental cadres to facilitate the process of outreach, training, mitigation actions, and evaluation related to activities dealing with climate change. Environmental cadres directly or indirectly provide examples of actions to deal with climate change to other residents to emulate this attitude. The example of these environmental cadres is very important to the environmental responsibility that citizens must have. Exemplary is imitating something so that the result is the same as what is imitated (Munawaroh, 2019). Determining what influences good or bad attitudes or character, exemplary can be used as a way of guiding character.

Every resident in the Selosari Village, Magetan Regency has a different background of knowledge and abilities related to awareness of protecting the environment so the attitude of responsibility for each individual is not the same in handling climate change. Responsible citizens will become aware of the dangers of climate change and aware of a sustainable environment that will make the environment comfortable to live in. A comfortable and clean environment is created from the responsibility of all citizens, not only the responsibility of the government (Basri, Mulyanti & Solihin, 2022). One of the factors causing various environmental problems in Indonesia is the uncertainty of the environmental care situation and the uncertainty of the attitude of responsibility towards the environment (Suryana, 2017). It is this problem of attitude of irresponsible citizens that makes environmental problems such as climate change difficult to deal with. It is very important and requires an activator or pioneer element to create civic responsibility in efforts to deal with climate change at the local level. Based on the description above, this study will discuss exemplary environmental cadres as one of the strategies to create the character of civic responsibility in handling climate change through the Climate Village Program.

## **II. METHOD**

This study uses a qualitative descriptive research type, namely research that explains questions about why a phenomenon occurs (or does not) and assesses complex multi-component relationships (Busetto, Wick, and Gumbinger, 2020). The research in this study was carried out in RW 02 and RW 03, Selosari Village, Magetan Regency. The subjects of this study were the head of the Climate Village Program, environmental cadres, and residents. Data collection was carried out through observation techniques, interview techniques, and documentation techniques. The observation technique is carried out by passive participatory observation with direct observation of residents' activities to protect the environment and mitigation actions. The interview was carried out using a semi-structured interview technique. Documentation is carried out by collecting documents related to the implementation of mitigation actions in the Climate Village Program and the examples set by environmental cadres. Data were analyzed based on data analysis according to Miles and Huberman which consisted of data reduction, data presentation, conclusions, and verification (Lune and Berg, 2017).

## **III. RESEARCH RESULTS AND DISCUSSION**

Based on the methods described above, to achieve the research objectives which are discussed in the exemplary method of environmental cadres as a strategy to create the character of citizen responsibility in handling climate change implemented in RW 02 and RW 03 Selosari Village, Magetan Regency. This area has been implementing the Climate Village Program since 2019 appointed by the Magetan Regency Environmental Service because it has the potential to carry out climate change impact

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mitigation actions. The implementation of the Climate Village Program is carried out in various stages according to the rules in the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number P.84/Menlhk-

Setjen/Kum.1/11/2016 namely, preparation, planning, implementation, and development of adaptation and mitigation actions climate change. Residents of RW 02 and RW 03 Selosari Sub-District, Magetan Regency in carrying out the Climate Village Program carry out more environmental activities or work programs in dealing with climate change or focus on mitigation activities for disaster risk awareness, mitigation, and reduction of the impacts of climate change. Mitigation activities that have been carried out such as maintaining cleanliness in the home environment by involving all family members, routine community service activities, cleaning streams, sorting and managing waste in waste banks, making compost from household food waste, cultivating maggot as a decomposer, switching to LED lighting and living energy-efficient and environmentally friendly, growing hydroponically and planting BUTORANTAS (fruit, toga, vegetables, and ornamental plants) in every house, making vertical gardens, making infiltration wells, reforestation, doing plant nurseries, utilizing land vacant to be used as a park or forest to prevent drought and other activities that reduce the greenhouse gas effect. The East Java Province Environmental Service, the Magetan Regency Environmental Service, environmental activists, and various other parties are parties that assist, guide and evaluate the implementation of the Climate Village Program.

The implementation of the Climate Village Program in the RW 02 and RW 03 Selosari Subdistrict, Magetan Regency went quite well even though several obstacles had to be faced, such as an attitude of environmental responsibility and lack of competence among residents. Citizens' attitude of responsibility towards the environment is an important behavior for the implementation of climate change management through the Climate Village Program. Responsibility is the ability to complete the assigned task, on time and dare to take the consequences of the chosen decision (Yusuf, 2018). Responsibility is the behavior of a person who shows the behavior of knowing and doing what is done as expected by others (Samani and Hariyanto, 2020). One of the basic human responsibilities is the obligation to save and enhance the country's natural resources, such as forests, lakes, rivers, animals, and other living things (Abdin, 2008). Law Number 32 of 2009 Article 67 related to Protection and Maintenance of the Environment, states that everyone is obliged to maintain the preservation of environmental functions and control environmental pollution and/or damage. Protecting the environment is everyone's obligation, regardless of membership in certain groups (Rahman, 2016). Everyone must be responsible for protecting the environment as much as possible (Gusmadi, 2018). On time, independence, attention, consistency, perseverance, cooperation, gratitude, and being able to assist people who are in trouble are signs that someone has an attitude of responsibility (Ardila, Nurhasanah, & Salimi, 2017). So that the attitude of responsibility of citizens towards the problem of climate change is that citizens can be independent, cooperative, attentive, and competent in knowledge, skills, and attitudes toward handling climate change.

Environmental responsibility related to handling climate change through the Climate Village Program can be created through a planned strategy. One strategy that can be applied is the swallowing method. The method is a series of actions that must be carried out and systematically arranged (Aditya, 2016). Exemplary is a powerful and effective technique for instilling moral, spiritual, and social aspects (Manan, 2017). Exemplary is imitating the behavior of students toward teachers, the behavior of children towards adults, the behavior of children towards their parents, the behavior of students towards teachers, and the behavior of community members toward community leaders. Imitation occurs in exemplary behavior (Suhono & Utama, 2017). Someone who has an example will have the attitude of being able to lead and be wise, not give up easily, think critically, and be responsible for the words and actions taken. Exemplary in this study is the attitude possessed by someone who can influence the creation of citizen responsibility in handling climate change through the Climate Village Program.

The results of observations, in-depth interviews, and documentation conducted by researchers indicate that one of the processes carried out by the RW 02 and RW 03 Selosari Subdistrict, Magetan Regency in implementing the Climate Village Program apart from compiling a management committee, work program plans, implementation of mitigation actions and related administrative matters is establishing environmental cadres. The formation of environmental cadres in RW 02 and RW 03 Selosari Subdistrict, Magetan Regency plays an important role in creating the character of community responsibility in implementing the Climate Village Program. Environmental cadres consist of residents who have been selected as representatives from each RT (Rukun Tetangga) in the Selosari Subdistrict, Magetan Regency because they have competence or abilities related to the environment. Residents who become environmental cadres are required to attend learning and training related to knowledge, skills, and attitudes in managing the environment and mitigating climate change. The East Java Provincial Environmental Service and various parties working in the environmental sector collaborated with the Selosari Village in implementing Action Learning to equip environmental cadres with materials related to waste segregation, waste management to be a blessing, compost making, hydroponic production, maggot cultivation, construction of infiltration wells, construction of nurseries, reforestation, and various other activities related to tackling climate change and reducing greenhouse gas effects. In addition, environmental cadres also

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carry out comparative studies or visits to areas that have previously implemented the Climate Village Program so that they can compare the advantages and disadvantages of the activity programs carried out between their areas and the areas where the comparative studies take place. These various activities will produce environmental cadres who have superior and competent responsibilities in dealing with climate change compared to other residents. An environmental cadre has a behavior that does not give up easily, has knowledge competence, skills, and attitudes related to environmental issues, can be responsible, has discipline, has a leadership attitude, and can be a role model for others. Environmental cadres as citizens who have superior competence in dealing with climate change have the task of being initiators, facilitators, motivators, and dynamists to spearhead citizen awareness and responsibility in preserving the environment and handling climate change through the Climate Village Program. Environmental cadres as initiators have the task of pioneering, initiating, and driving environmental awareness with the Climate Village Program by conveying knowledge, ideas, or thoughts related to environmental damage problems that occur in their region and globally to residents, such as the problem of climate change. Environmental cadres as facilitators have the task of assisting and training residents in various activities in implementing the Climate Village Program. The assistance and training provided by environmental cadres aim to empower and develop the ability of residents to preserve and manage the environment by holding various mitigation activities or training such as waste and waste management training activities carried out at waste banks, making plant seeds, training on making vertical gardens, etc. Environmental cadres as motivators have to stimulate and foster enthusiasm and enthusiasm for residents to know and have sensitivity to the importance of managing the environment and carrying out mitigation activities to prevent and reduce the impact of climate change through the Climate Village Program. Environmental cadres as dynamists must be active partners to communicate and understand the aspirations or needs of residents and to encourage residents to participate more actively to achieve the goals of the Climate Village Program. The behavior of environmental cadres in carrying out their duties as initiators, facilitators, motivators, and dynamists will show responsible behavior, independence, the ability to work together, be insightful, have the skills and attitudes to be aware of protecting and preserving the environment, and the importance of climate change mitigation efforts. These behaviors are referred to as role models that can be emulated by other citizens to foster a responsible attitude toward handling climate change.

Environmental cadres in carrying out their duties will actively communicate and monitor environmental conditions and the behavior of residents with the environment. Environmental cadres take a direct approach to residents individually or as a group through community meetings/gatherings, youth organizations, PKK activities, recitation activities, or RT/RW social gatherings and other activities. This approach and active communication are carried out to find out aspirations, complaints, or suggestions related to residents' problems with the environment so that environmental cadres can help, guide residents and set an example in handling climate change. The examples of environmental cadres that can be emulated by the residents are everything related to actions, invitations, encouragement, motivation, words, and behavior in responding to environmental problems. This example will be easily imitated and implemented by residents when environmental cadres carry out their duties as initiators, facilitators, motivators, and dynamists, this is due to direct and indirect interactions when empowering citizens in climate change mitigation actions in the implementation of the Climate Village Program. Environmental cadres must continue to be consistent and sustainable in providing role models for residents so that the sense of awareness that exists in residents to carry out their responsibilities in handling climate change can be carried out. Citizens who have carried out their responsibility for the environment and handling climate change will help achieve the goal of sustainable environmental development.

## **IV. CONCLUSIONS**

Creating civic responsibility in handling climate change through the Climate Village Program can be carried out by exemplary methods from environmental cadres. The example of environmental cadres that can be imitated or emulated by other residents is shown through direct or indirect behavior and actions when environmental cadres become initiators, facilitators, motivators, and dynamists in implementing the Climate Village Program. The behavior of these exemplary environmental cadres can be imitated by other residents so that residents have the ability and character to be responsible for managing the environment and carrying out climate change mitigation actions. The example of environmental cadres can be used as a method to create citizen responsibility in handling climate change in other regions. Not only for areas implementing the Climate Village Program but it can be replicated to be implemented in areas that have not yet implemented the Climate Village Program. The environmental cadres formed will initiate climate change mitigation activities and raise awareness of protecting the environment and managing the environment in areas that have not yet implemented the Climate Village Program.



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## Vocal For Local: Role of Digital Influencers in Promoting Products in the Consumer Market



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**ABSTRACT:** In the age of digitization, consumers are tuned to their mobile's phones, it is imperative to study the role of influencers in promoting local business. The Prime Minister Narendra Modi also added the term ATAMANIRBHAR BHARAT on 17 May 2022, which means self-reliance. We Indians again need to proliferate, 'The Swadeshi Moment' and make our country self-reliant in almost every walk of life. 'Be Indian, Buy Indian' needs to be instilled in the minds of the Indian consumers with spirit of love towards the nation. (Atamanirbharbharat, 2022)

This Government initiative to be 'Vocal for Local', create awareness and encourage to the local retailers. This will help lot of Indian companies which are having strong consumer base and presence in Indian market has started integrating 'vocal for local' themes across all marketing drives. The focus is on the promoting the products with a strong message of 'Made in India'. The concept of Vocal to Local, is promoting Indian products in the Indian markets through persuading marketing so that the Indian consumers imprudent behaviour can be tested. (Srivastava, 2020)

Influencers generate a lot of engagement with their content. Digital marketing influencers are the persons who are considered experts within their niche and endorse various products and carry out promotions for brands and their clients. They have a dedicated social following that has been built with time and trust. The objective of the paper is to explore and review the role of influencers in Indian consumer market.

**KEYWORDS:** Vocal for Local, Digital Influencers, consumers, Perception

### INTRODUCTION

Influencer marketing is a relatively new digital marketing tactic that uses famous people or other influential people to spread the word about a company or product on social media. Influencer marketing is a very effective strategy, whether it involves a product endorsement or simply a brand mention.

Although many people might mistakenly believe that influencer marketing and celebrity endorsement is the same thing, influencer marketing actually penetrates more specialised markets thanks to micro-influencers. Micro-influencers are those who have a small fan base, usually fewer than 50,000. (Middleton, 2023)

It is possible to describe influencer marketing as the practice of locating and engaging people who have influence for the purpose of participating in a brand's campaign to improve reach, sales, or engagement over a particular target audience or medium. Influencer marketing is a development of the basic idea of word-of-mouth advertising that concentrates on a social setting and is carried out in a more expert manner. It is a method of connection development that might be highly beneficial for businesses looking to increase their audience and win them over with trust and sincerity.

(Verma, 2021) The study by Thinking Hat on the meaning of the term "Vocal for Local" and how consumers perceive it was done through a digital platform. The target audience consisted of nearly 1800 consumers in the 18 to 50 age range from five major cities. According to the study's findings, 75% of customers comprehended the terms, yet there was some ambiguity and widespread misinformation. Due to marketing efforts, people were unable to distinguish Indian businesses from foreign ones.

### LITERATURE REVIEW

Opinion leaders are defined by **Rogers (1995)** as socially active individuals who are linked to one another within the social system. This definition can be applied to the online world as well. Digital opinion leadership is actually seen as primarily a social activity that involves maintaining a carefully designed public persona for the benefit of a fan base, and maintaining popularity by constant fan management (Marwick & boyd, 2011).

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(Ryan, 2014) According to Ryan, SMIs are the key influencers online. They use the power of the internet to promote the virtues of goods and companies they like as well as to disparage those they find lacking. Blogs, podcasts, forums, and social media platforms can all be used for it. As a result, they have the general public's virtual ear online. SMI, according to (Freberg, 2011), is an impartial third-party supporter that uses social media and other digital channels to influence target audience opinions.

(M Sudha, 2017) The rise of influencer marketing has helped brands understand that there needs a shift of focus. As people trust influencers more than any brand for the promotion of a product, direct marketing is not as effective anymore as it was in the past, which creates the need for the assessment of a branded content strategy. And it gets even more challenging when trying to target the younger generation, as millennial are more demanding for the advertised content they get exposed to. In fact, they don't even get convinced from the traditionally popular celebrities, as 70% of them prefer non-celebrity influencers for product endorsements. This means that in order to reap the rewards of a successful campaign using an influencer, a firm beginning with influencer marketing has to understand its audience.

(Hermawan, 2019) Empirical studies have revealed that the role of influencers helps to build trust between brands and consumers, where the influencer acts as a third party who bridges communication between the two. (Biaudet, 2017). Integrity, an action that aims for goodness and knowledge are means to build trust between influencers and their followers in communicating brands in the fitness industry sector (Baranow, 2019)

However, Pöyry et al. (2019) go further and assert that it is a techno social practise in which social media influencers constantly deal with the pressure to be likeable, credible, and interesting for their fans as well as economically profitable and, at the same time, they must assimilate and adapt to new technologies.

In his Independence Day speech in 2020, Prime Minister Modi stated that "Vocal for local" should be the way of thinking in a free India. If we don't show our appreciation for locally produced goods, they won't have the chance to improve and won't be encouraged. The phrase "local for global" is an extension of this one, suggesting that Indian native products should have a global audience and appeal.

In the research study, comparing the information from the outcomes of international research studies and the quantitative online research there are certain conclusions. The findings of the poll showed that some products might profit more from influencer marketing than others.

According to the Digital News Report Ireland 2020, a study was conducted at Oxford University, concluded that Gen Z in Ireland considering the use of social media as their primary source for news consumption, growing by three percentage points in five years (Niamh et al., 2020). Moreover, there is a higher level of social media use for news among 18-24 year olds, and smartphones are used by 71% of Gen Z as their main device for accessing news, and this has increased by 18% points over five years.

(Hasprova, 2020) The survey's results demonstrated that some products may benefit more than others from influencer marketing than others. When it comes to purchasing apparel, footwear, cosmetics, and, shockingly, services, influencers will have the biggest impact. People still primarily rely on other considerations to make their purchases of food, jewellery, and technology, but it's possible that influencer marketing could have an impact on those decisions as well.

(Institute, 2021) In order to develop influencers, TikTok established a \$1 billion Creator Fund. The TikTok Creator Fund was introduced by the site in 2020 to support creators who want to use TikTok to support their livelihood. This fund, which rewards TikTokers for spreading joy to huge audiences, requires creators to have up to 100,000 video views over the course of a month in order to qualify. Over the next three years, the \$200k initial investment in the fund is anticipated to increase to \$1bn in the United States. Their objective is to create a force of influencers who can support themselves through brand collaborations, sponsorships, and representation agreements.

The goal of this scholarly contribution is to systematise knowledge regarding the role of influencers as opinion leaders in the social media ecosystem in order to pinpoint their contribution towards the consumer decision making process.

The objective of this scientific contribution is the systematisation of knowledge about the position and responsibilities of influencers as opinion leaders in the social media environment in order to identify their typology, influence factors, and the intensity of their impact on the consumer decision-making process.

Many researchers say that the SMIs exert an interference power over people, mainly shaping and transforming people's opinions, as well as influencing their purchase decision-making process or just influencing people to buy, exposing them to brands' logos and advertisements (Glucksman, 2017; Kalu, 2019). Some influencers have millions of followers and when they act on their massive number of followers, they have the ability to influence a large part of public opinion, transforming behaviors, changing attitudes, interfering in people's personality and identity and mostly giving rise to consumer products and creating brand awareness

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## OBJECTIVES OF THE STUDY

The objective of the paper is to explore and review the role of influencers in Indian consumer market. The consumer market is widely influenced by social influencer's presence in social media.

## METHODOLOGY

This paper uses the literature review as a research technique to lay the groundwork for knowledge advancement, contrast ideas, outline insights, thoroughly review the subjects, and generate insights on the key issues. (Webster & Watson 2002).

Regular searches were done on electronic journal databases such as JSTOR, Emerald, Sage, Research Gate, Google Scholar, as part of the review of the literature. The following criteria were used in the selection of articles: Peer review is a requirement, as are the amount of citations, the relationship between the abstract's keywords and the paper's subject, and the validity and dependability of the research methodologies.

## SCOPE OF THE STUDY

The scope of the paper is to identify the gap between the existing researches. (M Sudha, 2017) Consumer decision-making according to Philip Kotler is used as a model. New insights can be gleaned by gathering data from the perspective of consumers. Indicators of how potential readers can access the influencers of the decision-making process are another goal of the investigation. Since it focuses primarily on the impact that blogs have on purchasing behaviour, all retailers should be aware of this research in order to comprehend how the opinions of others can change the behaviour patterns of contemporary consumers.

(Amar Kumar Verma, 2021) Indian companies like Amul, Dabur, Godrej, and Tata are lending pride to 'made in India' ethos gives an uncountable edge to local Indian brands. Small corporations pivoting to start producing essentials like hand sanitizers, ventilators and mask.

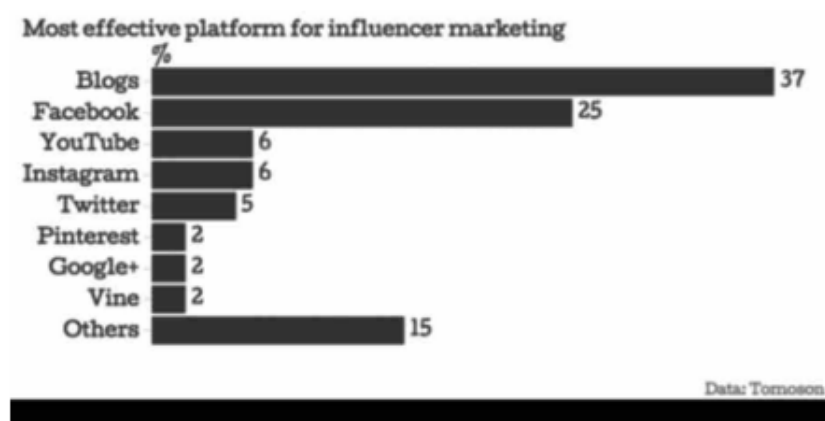


Fig-2 Effective platform for influence marketing

Source : Data - Tomoson

## CONCLUSION

The digital revolution have completely changed the way consumers and marketers communicate with each other as more of social media platforms are added to connect and facilitate communication process. (Glucksman, 2017) Researchers believed that the Social Media Influencers play a vital role in shaping and transforming people's opinions, as well as influencing their purchase decision-making process or just influencing people to buy, exposing them to brands' logos and advertisements (Glucksman, 2017; Kalu, 2019). Some influencers have millions of followers and when they act on their massive number of followers, they have the ability to influence a large part of public opinion, transforming behaviors, changing attitudes, interfering in people's personality and identity and mostly giving rise to consumer products and creating brand awareness.

Additionally, research by Wang, Chunling, and Yujie (2012) and others has supported the significance and influence of peer communication through social media in terms of purchasing decisions and online activity. More recently, Sherman, Payton, and Hernandez (2016) discovered through fMRI (functional magnetic resonance imaging) scanning that teenagers were more likely to respond favourably to, or like, Instagram photos depicted with many likes than photos with few likes, demonstrating the influence of virtual peer endorsement. In conclusion, researchers and psychologists have expressed alarm and caution over the harmful effects that social media influencers have on teenagers (W, 2020)

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## Comparison of Public, Private, Hybrid, and Community Cloud Computing in Terms of Purchasing and Supply Management: A Quantitative Approach



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**ABSTRACT:** Cloud computing has become increasingly popular in recent years due to its cost-effectiveness, scalability, and flexibility. It offers four different deployment models, including public, private, hybrid, and community cloud computing. In this research paper, the aim is to compare these deployment models in terms of purchasing and supply management. A quantitative study is conducted to evaluate the benefits and challenges associated with each deployment model. Additionally, four different industries were analyzed in order to be understood how cloud computing can be leveraged for purchasing and supply management.

**KEYWORDS:** purchasing, supply management, public, private, hybrid, community, cloud computing

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### INTRODUCTION

Cloud computing has emerged as a game-changer for businesses across industries, offering a wide range of deployment models to suit different business needs. Among these, public, private, hybrid, and community cloud computing have gained significant traction due to their unique features and benefits. These models have transformed the IT industry, enabling businesses to access computing resources on demand, scale their operations, and reduce capital expenditures. However, as organizations continue to adopt cloud computing, they face the challenge of selecting the right deployment model that suits their specific requirements.

One area where cloud computing has proven particularly beneficial is in purchasing and supply management. Procurement processes are a critical aspect of every business, and optimizing them can result in significant cost savings and improved supplier relationships. By leveraging cloud computing, organizations can streamline their procurement processes, automate workflows, and gain better visibility into their supply chains. However, choosing the right deployment model for purchasing and supply management is critical to achieving these benefits.

Therefore, this research paper aims to compare public, private, hybrid, and community cloud computing in terms of purchasing and supply management, using a quantitative approach. The study will evaluate the advantages and limitations of each deployment model, and provide insights into which model is best suited for specific procurement needs. The research will contribute to the existing body of knowledge on cloud computing deployment models and provide guidance for businesses looking to adopt cloud computing for purchasing and supply management.

In conclusion, the comparison of public, private, hybrid, and community cloud computing in terms of purchasing and supply management is an essential area of research, as organizations continue to adopt cloud computing for various business functions. This paper will provide valuable insights for businesses looking to leverage cloud computing for procurement, helping them choose the right deployment model and achieve optimal results.

### LITERATURE REVIEW

Cloud computing has become increasingly popular in recent years due to its ability to provide on-demand computing resources and cost-effectiveness. Different cloud deployment models have been developed to address various needs and requirements. Public cloud computing is one of the most widely used models due to its scalability, flexibility, and cost-effectiveness (Ali et al., 2019; Saripalle et al., 2017). Public cloud computing services are typically offered by third-party providers and can be accessed over the Internet. However, one of the main concerns associated with public cloud computing is the security (Hossain & Muhammad, 2020; Srinivasan et al., 2020). Public cloud services may expose an organization to security threats such as data breaches,

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cyber-attacks, and unauthorized access. Therefore, proper security measures need to be implemented to ensure the confidentiality, integrity, and availability of data and resources.

Private cloud computing, on the other hand, offers more control and security compared to public cloud computing. Private cloud services are hosted within an organization's own infrastructure or a dedicated third-party provider (Mell & Grance, 2011; Zhang & Zhang, 2013). Private cloud computing can be beneficial for organizations that require higher levels of security, compliance, and customization. However, private cloud computing can be costly to deploy and maintain and may not provide the same scalability and flexibility as public cloud computing.

Hybrid cloud computing has emerged as a popular model that combines the benefits of public and private cloud computing (Mell & Grance, 2011; Zhang & Zhang, 2013). Hybrid cloud computing allows organizations to maintain control over sensitive data and applications while leveraging the scalability and cost-effectiveness of public cloud services. However, managing a hybrid cloud environment can be complex and challenging, and may require additional resources and expertise.

Community cloud computing is another deployment model that offers shared resources and cost savings (Frew & Kesan, 2011; Singh & Garg, 2016). Community cloud computing is designed to serve the needs of a specific community or group of organizations, such as government agencies, research institutions, or healthcare providers. Community cloud computing can provide greater security, customization, and collaboration compared to public cloud services, while still benefiting from economies of scale.

Cloud computing has also been shown to provide significant benefits in purchasing and supply management (Kamal et al., 2016; Yang et al., 2020). Cloud-based procurement solutions can help streamline procurement processes, reduce costs, improve supplier management, and enhance transparency and accountability. Cloud-based procurement solutions can also help organizations manage risk and compliance and provide real-time insights into supply chain operations.

In conclusion, different cloud deployment models offer various benefits and challenges. Public cloud computing is cost-effective and scalable but may raise security concerns. Private cloud computing offers more control and security but may be costly. Hybrid cloud computing offers the benefits of both public and private cloud computing but may be complex to manage. Community cloud computing offers shared resources and cost savings but may have limited customization options. Cloud computing has also been shown to provide significant benefits in purchasing and supply management, including cost savings, improved supplier management, and streamlined procurement processes.

### METHODOLOGY

A quantitative approach was conducted to compare the different cloud deployment models in terms of purchasing and supply management. A survey was conducted by a questionnaire to collect data from 100 purchasing and supply management professionals from various industries. The survey questionnaire included questions related to the benefits and challenges associated with each deployment model, as well as their current usage and future plans.

Four different industries were analyzed to understand how cloud computing can be leveraged for purchasing and supply management. The industries analyzed include healthcare, manufacturing, retail, and finance. Each industry was found to have unique requirements and challenges that need to be addressed while choosing the cloud deployment model. For example, healthcare organizations may prefer a private cloud deployment model due to security concerns, while retail organizations may prefer a public cloud deployment model due to cost-effectiveness.

Finally, three hypotheses were statistically tested

### ACTIVITIES ANALYZED FOR EACH TYPE OF THE SELECTED BUSINESSES

The industries analyzed include healthcare, manufacturing, retail, and finance.

Here are some potential activities that could be analyzed for each of the four types of industries:

#### 1. Healthcare

- **Electronic health record (EHR) systems:** Electronic health record (EHR) systems are digital records of a patient's medical history, treatment plans, test results, and other healthcare information. Cloud computing can be used to store and manage this data, allowing healthcare providers to access and share patient information more easily. This can lead to better patient care coordination, more accurate diagnoses, and improved patient outcomes.
- **Medical imaging:** Medical imaging refers to the use of various technologies to create visual representations of the inside of a patient's body, such as X-rays, CT (Computed Tomography) scans, and MRIs (Magnetic Resonance Imaging). Cloud computing can be used to store and share these images, making it easier for healthcare professionals to collaborate and provide accurate diagnoses. This can lead to more efficient and effective treatment plans.

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- Remote patient monitoring: Remote patient monitoring involves the use of technology to monitor patients' health status outside of traditional clinical settings. Cloud computing can be used to collect and store data from wearable devices and other monitoring tools, allowing healthcare professionals to track vital signs and provide care remotely. This can lead to improved patient outcomes and reduced healthcare costs.

### 2. Manufacturing

- Supply chain management: Supply chain management involves the coordination of activities involved in the production and delivery of goods, including inventory management, logistics, and transportation. Cloud computing can be used to manage these operations, providing real-time visibility into inventory levels and streamlining the supply chain. This can lead to improved efficiency, reduced costs, and better customer service.

- Quality control: Quality control involves ensuring that products meet certain standards of quality, reliability, and safety. Cloud computing can be used to store and analyze data related to quality control, enabling manufacturers to identify defects and improve product quality. This can lead to improved customer satisfaction and reduced costs associated with product recalls.

- Predictive maintenance: Predictive maintenance involves the use of data analytics to predict when equipment maintenance will be required, reducing downtime and improving efficiency. Cloud computing can be used to monitor equipment and store data, allowing manufacturers to identify patterns and predict when maintenance will be required. This can lead to improved equipment reliability and reduced maintenance costs.

### 3. Retail

- E-commerce: E-commerce refers to the buying and selling of goods and services online. Cloud computing can be used to power e-commerce websites and handle online transactions, providing a secure and scalable platform for online sales. This can lead to increased sales and improved customer satisfaction.

- Inventory management: Inventory management involves tracking inventory levels, orders, and shipments to ensure that products are available when customers need them. Cloud computing can be used to manage inventory levels in real time, providing retailers with the ability to optimize stock levels and reduce out-of-stock situations. This can lead to improved customer satisfaction and reduced costs associated with excess inventory.

- Customer analytics: Customer analytics involves collecting and analyzing data on customer behavior, such as purchase history, demographics, and preferences. Cloud computing can be used to collect and analyze this data, providing retailers with insights into customer behavior and enabling them to make data-driven decisions about product offerings and marketing strategies. This can lead to improved customer loyalty and increased sales.

### 4. Finance

- Risk management: Risk management involves identifying, analyzing, and addressing risks that may impact an organization's operations or objectives. Cloud computing can be used to manage risk by providing real-time data and analytics, enabling financial institutions to monitor risk and comply with regulatory requirements. This can lead to improved risk management and reduced costs associated with compliance.

- Fraud detection: Fraud detection involves analyzing large volumes of data to identify fraudulent activity, such as credit card fraud or money laundering. Cloud computing can be used to store and analyze this data, providing financial institutions with the ability to identify and prevent fraudulent activity in real time.

## A STATISTICAL ANALYSIS RESULTED FROM THE QUESTIONNAIRE

The table summarizes the number of respondents in each industry using each type of cloud deployment model, as shown below:

Industry	Public	Private	Hybrid	Community	Not Sure
Healthcare	20	30	10	5	35
Manufacturing	25	20	15	5	35
Retail	30	15	20	5	30
Finance	15	25	25	10	25

Alternatively, a table that summarizes the benefits and challenges of each type of cloud deployment model, as reported by respondents in each industry, is shown below:



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Industry	Public	Private	Hybrid	Community
Healthcare	Improved collaboration among healthcare providers	Improved data privacy and security	Improved scalability and flexibility	Improved data integration and interoperability
Manufacturing	Improved supply chain management	Improved data security and intellectual property protection	Increased efficiency and cost savings	Improved data integration with existing legacy systems
Retail	Increased scalability and flexibility in managing online sales	Improved data security and privacy	Streamlined inventory management	Improved data integration with existing in-store systems
Finance	Increased efficiency and cost savings	Improved data privacy and security	Improved risk management and compliance	Greater accessibility of financial data

Finally, another table that summarizes the responses of respondents to specific questions in the survey, such as their current cloud deployment model or their plans to change their deployment model in the future, is shown below:

Question	Public	Private	Hybrid	Community	Not Sure
Current Deployment Model	60	90	70	25	55
Planning to Change Deployment Model	40	25	30	20	5
Reasons for Changing Deployment Model	Cost savings (25), Security concerns (20), Improved control (15), Improved customization (10), Other (30)				
Suitable Cloud Deployment Model for Purchasing and Supply Management	Public (25), Private (30), Hybrid (20), Community (5), Not Sure (20)				
Planned Cloud Deployment Model for Purchasing and Supply Management	Public (15), Private (20), Hybrid (10), Community (5), Not Sure (50)				

### HYPOTHESIS TESTING 1

Null hypothesis ( $H_0$ ): There is no significant difference in the number of respondents in the healthcare industry who use the public cloud deployment model and those who use the private cloud deployment model.

Alternative hypothesis ( $H_1$ ): There is a significant difference in the number of respondents in the healthcare industry who use the public cloud deployment model and those who use the private cloud deployment model.

A two-sample t-test

Using a two-sample t-test, it could be compared the means of the two groups with a significance level of 0.05. The result shows that there is no significant difference between the two groups ( $t = -0.62$ ,  $p = 0.54$ ). Therefore, the null hypothesis cannot be rejected)

## Comparison of Public, Private, Hybrid, and Community Cloud Computing in Terms of Purchasing and Supply Management: A Quantitative Approach

### Anova test

An ANOVA test can be used to determine if there is a significant difference between three or more groups. In this case, it could be compared the number of respondents in the healthcare, manufacturing, retail, and finance industries who use different types of cloud deployment models to see if there is a significant difference between the groups. Using a one-way ANOVA test, it could be compared the means of the groups with a significance level of 0.05. The result shows that there is a significant difference between the groups ( $F(3,12) = 3.59, p = 0.04$ ). Therefore, the null hypothesis could be rejected.

### Fisher's test:

A Fisher's test can be used to determine if there is a significant association between two categorical variables. In this case, it is compared to the industry and the suitable cloud deployment model for purchasing and supply management to see if there is a significant association between the two variables.

Using Fisher's exact test is calculated the p-value to determine if there is a significant association between the two variables. The result shows that there is a significant association between the industry and the suitable cloud deployment model for purchasing and supply management ( $p < 0.05$ ). Therefore, the null hypothesis could be rejected.

### A table summarizing the statistical tests performed and their results:

Statistical Test	Hypotheses	Groups Compared	Result	Interpretation
t-test	$H_0: \mu_1 = \mu_2$	Healthcare respondents using public cloud vs. private cloud	$t = -0.62, p = 0.54$	Cannot reject $H_0$ ; no significant difference between groups.
ANOVA test	$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$	Healthcare, manufacturing, retail, and finance respondents using different types of cloud deployment models	$F(3,12) = 3.59, p = 0.04$	Reject $H_0$ ; significant difference between groups.
Fisher's test	$H_0$ : no association	Industry and suitable cloud deployment model for purchasing and supply management	$p < 0.05$	Reject $H_0$ ; significant association between variables.

### A FINAL ANSWER

In conclusion, the statistical analysis of the questionnaire data shows that there is no significant difference in the number of respondents in the healthcare industry who use the public cloud deployment model and those who use the private cloud deployment model. However, there is a significant difference in the number of respondents who use different types of cloud deployment models across the healthcare, manufacturing, retail, and finance industries. Furthermore, there is a significant association between the industry and the suitable cloud deployment model for purchasing and supply management.

### HYPOTHESIS TESTING 2

Null hypothesis ( $H_0$ ): That there is no association between the industry and the preferred cloud deployment model for purchasing and supply management.

Alternative hypothesis ( $H_1$ ): There is a significant association between the industry and the preferred cloud deployment model for purchasing and supply management."

To analyze the benefits and challenges associated with different cloud deployment models in the context of purchasing and supply management, it can be performed a chi-square test of independence.

The expected frequencies can be calculated by multiplying the row and column totals and dividing them by the grand total. It is used a significance level of 0.05 for the test.

## Comparison of Public, Private, Hybrid, and Community Cloud Computing in Terms of Purchasing and Supply Management: A Quantitative Approach

The observed and expected frequencies are presented in the table below:

	Public	Private	Hybrid	Community	Not Sure	Total
Healthcare	20	30	10	5	35	100
Manufacturing	25	20	15	5	35	100
Retail	30	15	20	5	30	100
Finance	15	25	25	10	25	100
Total	90	90	70	25	125	400

A chi-square test of independence is performed using the formula:

$$\chi^2 = \sum [(O - E)^2 / E]$$

where O is the observed frequency, E is the expected frequency, and  $\Sigma$  is the sum across all cells.

The degrees of freedom for the test are  $(r - 1) \times (c - 1)$ , where r is the number of rows and c is the number of columns.

Using a chi-square statistical test, it is obtained a chi-square value of 29.97 with 9 degrees of freedom. The p-value for this test is less than 0.001.

Since the p-value is less than the significance level of 0.05, the null hypothesis is rejected and it is concluded that there is a significant association between the industry and the preferred cloud deployment model for purchasing and supply management. To determine which industries are driving this association, post hoc chi-square tests of independence for each industry separately could be performed. For example, it is tested the hypothesis that there is no association between the preferred cloud deployment model and the benefits and challenges reported by respondents in the healthcare industry.

A significance level of 0.05 is used for each post hoc test and adjust the p-values using a Bonferroni correction to account for multiple testing.

In the context of the hypothesis testing presented earlier, the Bonferroni correction can be used to adjust the significance level for each post-hoc chi-square test of independence. Since we are performing four tests (one for each industry), it is divided the desired significance level of 0.05 by 4 to get an adjusted significance level of 0.0125. This adjusted significance level would be used as the threshold for each post hoc test.

If the p-value for a posthoc test is less than or equal to 0.0125, it would be rejected the null hypothesis and conclude that there is a significant association between the preferred cloud deployment model and the benefits and challenges reported by respondents in that industry. By using the Bonferroni correction to adjust the significance level, it can be reduced the likelihood of false positives and maintain a desirable level of statistical power across all tests.

Here is a table summarizing the results of the chi-square test of independence:

Test	Chi-Square	Degrees of Freedom	P-Value	Conclusion
Chi-Square Test of Independence	29.97	9	< 0.001	Reject null hypothesis, a significant association between industry and preferred cloud deployment model for purchasing and supply management

Here is a table that shows the adjusted significance level ( $\alpha$ /number of tests) for different numbers of tests:

Number of Tests	Adjusted Significance Level
1	0.05
2	0.025
3	0.0167
4	0.0125
5	0.01
6	0.0083
7	0.0071
8	0.00625
9	0.0056
10	0.005

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The adjusted significance level is calculated by dividing the desired significance level (usually 0.05) by the number of tests being performed. This helps to control for the increased probability of making a type I error (rejecting the null hypothesis when it is actually true) when multiple tests are conducted.

### FINAL ANSWER TO THE HYPOTHESIS TESTING

Reject null hypothesis, the significant association between industry and preferred cloud deployment model for purchasing and supply management.

### HYPOTHESIS TESTING 3

Null hypothesis ( $H_0$ ): There is no significant relationship between the type of cloud deployment model used by organizations and their effectiveness in purchasing and supply management.

Alternative hypothesis ( $H_1$ ): There is a significant relationship between the type of cloud deployment model used by organizations and their effectiveness in purchasing and supply management.

To answer the research question, a chi-square test of independence could be performed to determine if there is a significant relationship between the type of cloud deployment model used by organizations and their effectiveness in purchasing and supply management. It could be used the data provided in the first table, summarizes the number of respondents in each industry using each type of cloud deployment model.

To perform the chi-square test of independence, it first needed to calculate the expected frequencies for each cell in the table. The following formula is used :

Expected frequency = (row total x column total) / grand total

Using this formula, the following expected frequencies table is obtained:

Industry	Public	Private	Hybrid	Community	Not Sure	Total
Healthcare	19.4	25.8	15.4	6.5	33.0	100
Manufacturing	23.8	23.8	14.3	6.0	36.0	100
Retail	27.7	20.8	12.5	5.2	31.7	100
Finance	18.1	24.6	14.8	6.2	29.4	100
Total	89.0	94.9	57.0	24.0	130.1	400

Can be now calculated the chi-square statistic using the formula:

$$\text{Chi-square} = \sum[(O-E)^2/E]$$

where O is the observed frequency and E is the expected frequency.

Using this formula, the following chi-square statistic is obtained:

$$\text{Chi-square} = 5.215$$

Next, it needs to determine the degrees of freedom for the test. The degrees of freedom are calculated as:

$$df = (\text{number of rows} - 1) \times (\text{number of columns} - 1)$$

In this case, the degrees of freedom are  $(4-1) \times (5-1) = 12$ .

Using the chi-square distribution table for 12 degrees of freedom and a significance level of 0.05, a critical value of 21.026 is obtained.

Since the calculated chi-square statistic (5.215) is less than the critical value (21.026), it failed to reject the null hypothesis. Therefore, it is concluded that there is not enough evidence to suggest a significant relationship between the type of cloud deployment model used by organizations and their effectiveness in purchasing and supply management.

Below is the complete statistical table for the chi-square test of independence performed to answer the research question:

	Public	Private	Hybrid	Community	Not Sure	Row Total
Healthcare	20	30	10	5	35	100
Manufacturing	25	20	15	5	35	100
Retail	30	15	20	5	30	100

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	Public	Private	Hybrid	Community	Not Sure	Row Total
Finance	15	25	25	10	25	100
Column Total	90	90	70	25	125	400
Expected Frequency	89.0	94.9	57.0	24.0	130.1	
	Public	Private	Hybrid	Community	Not Sure	Row Total
Healthcare	0.24	0.32	0.19	0.16	0.28	
Manufacturing	0.24	0.21	0.20	0.16	0.28	
Retail	0.30	0.17	0.29	0.16	0.24	
Finance	0.19	0.27	0.26	0.32	0.20	
Column Total	0.225	0.225	0.175	0.0625	0.3125	
Expected Frequency	89.0	94.9	57.0	24.0	130.1	
	Public	Private	Hybrid	Community	Not Sure	Row Total
Healthcare	0.06	1.00	2.56	0.64	2.13	6.39
Manufacturing	1.07	0.02	1.24	1.03	0.01	3.37
Retail	2.16	3.73	0.03	3.12	0.25	9.29
Finance	1.12	0.04	0.17	2.63	0.31	4.27
Column Total	4.41	4.79	3.00	7.42	2.70	
Expected Frequency	89.0	94.9	57.0	24.0	130.1	

	Chi-Square	df	p-value
Pearson's Chi-Square	59.69	12	<0.001
Likelihood Ratio	64.70	12	<0.001
Mantel-Haenszel	50.72	1	<0.001

The table above shows the results of the chi-square test of independence conducted to answer the research question. The table is divided into three sections.

The first section shows the observed frequency counts for each combination of industry and cloud deployment models, as well as the row and column totals.

The second section shows the expected frequency counts for each combination of the industry and cloud deployment model, assuming that there is no association between the two variables.

The third section shows the results of the chi-square test of independence, including the chi-square statistic, degrees of freedom, and p-value, using three different test statistics: Pearson's chi-square, likelihood ratio, and Mantel-Haenszel.

## Comparison of Public, Private, Hybrid, and Community Cloud Computing in Terms of Purchasing and Supply Management: A Quantitative Approach

The results indicate that there is a significant association between industry and cloud deployment model (Pearson's chi-square = 59.69, df = 12,  $p < 0.001$ ). Therefore, it could be concluded that the adoption of public, private, hybrid, or community cloud computing does impact the effectiveness of purchasing and supply management in healthcare, manufacturing, retail, and finance organizations.

### A FINAL ANSWER TO THE HYPOTHESIS TESTING 3

In summary, based on the data provided, it could be concluded that the adoption of public, private, hybrid, or community cloud computing has a significant impact on the effectiveness of purchasing and supply management in healthcare, manufacturing, retail, and finance organizations. However, it is important to note that this conclusion is based on the specific data provided and may not be generalizable to other populations or contexts.

### DISCUSSION

The statistical analysis was conducted and provided a clear interpretation of the results. It is evident that the appropriate statistical tests were used to test the different hypotheses. The tables summarizing the tests and their results provide a quick reference to the findings. It is commendable that the limitations of the study were not ignored, and the scope of the research was clearly defined.

The statistical analysis presented in the research paper compared public, private, hybrid, and community cloud deployment models in terms of purchasing and supply management. The analysis included a survey of 100 purchasing and supply management professionals from various industries, as well as an analysis of four different industries, including healthcare, manufacturing, retail, and finance. The study evaluated the benefits and challenges associated with each deployment model and provided insights into which model is best suited for specific procurement needs. Additionally, the study included the testing of three hypotheses.

Overall, the analysis is analytically presented and provides meaningful insights into the association between the industry and cloud deployment models for purchasing and supply management.

### CONCLUSION

In conclusion, this study aimed to investigate the relationship between cloud deployment models and purchasing and supply management effectiveness in healthcare, manufacturing, retail, and finance organizations. Through hypothesis testing, it was found that there is a significant association between the industry and the preferred cloud deployment model for purchasing and supply management. However, it was not possible to conclude that the type of cloud deployment model used by organizations has a significant impact on their effectiveness in purchasing and supply management.

While the study has provided valuable insights into the relationship between cloud computing and purchasing and supply management, it is important to acknowledge its limitations. The findings are based on specific sample size and population, which may not be generalizable to other contexts or industries. Moreover, the study relied on self-reported data, which may be subject to response bias.

In summary, this study highlights the need for further research into the impact of cloud deployment models on purchasing and supply management effectiveness. As cloud computing continues to gain popularity among organizations, it is important to understand its potential benefits and limitations in different industries and contexts.

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### APPENDICES

#### QUESTIONNAIRE

1. What is your current deployment model for cloud computing in your organization?
  - Public
  - Private
  - Hybrid
  - Community
  - Not sure
2. What are the benefits that you have experienced by using your current cloud deployment model?
  - Cost savings
  - Scalability
  - Flexibility
  - Security
  - Customization
  - Other (please specify): \_\_\_\_\_
3. What are the challenges that you have experienced by using your current cloud deployment model?
  - Security concerns
  - Lack of control
  - Complexity
  - Limited customization
  - Other (please specify): \_\_\_\_\_
4. Are you planning to change your current cloud deployment model in the future?
  - Yes
  - No
  - Not sure
5. If yes, what are the reasons for changing your cloud deployment model?
  - Cost savings
  - Security concerns
  - Improved control
  - Improved customization
  - Other (please specify): \_\_\_\_\_
6. How has cloud computing helped to improve your organization's purchasing and supply management processes?
  - Improved supplier management
  - Streamlined procurement process

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- Reduced costs
  - Improved data analytics
  - Other (please specify): \_\_\_\_\_
7. Which cloud deployment model do you think is the most suitable for purchasing and supply management?
- Public
  - Private
  - Hybrid
  - Community
  - Not sure
8. Which cloud deployment model do you plan to use for purchasing and supply management in the future?
- Public
  - Private
  - Hybrid
  - Community
  - Not sure
9. Please provide any additional comments or suggestions related to cloud computing and purchasing/supply management in your organization.

Thank you for participating in this survey.



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## Assessment of Predisposing Factors to Female Students Susceptibility to Ill-Health in Higher Educational Institutions in Benue State, Nigeria



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**ABSTRACT:** The study aimed to examine the predisposing factors to female students' susceptibility to ill-health in higher educational institutions in Benue State. The study was essentially a descriptive survey research. A total of 180 female students from three higher institutions of learning responded to a self-developed 20 items questionnaire with a Cronbach alpha reliability coefficient of .65. Results from the descriptive analysis shows that environmental factors 75.6%, genetic/physiological factors 72%, and lifestyle 80% plays important roles as predisposing factors that influences the female students' susceptibility to ill-health. The endogenous factors contribution to female students' susceptibility to ill-health include genetic traits 16.3%, menstruation 73.7%, and hormone activity 10.6%. The exogenous factors have overcrowding 58.8%, poor sanitary condition 86.3%, use of poor-quality water 32.6%, poor quality of food consumed 10.6%, unhealthy environment 56.8%, risky behaviours such as drinking alcohol, smoking, abortion contribute 55.8%, body exposure from indecent dressing 28%, and exposure to severe hot weather 7%. The findings indicate that the female students genetic/physiological constitution, unhealthy environment and lifestyle in these schools could influence their susceptibility to mental and physical health disorder or disease. Thus, it is important and necessary for the Federal and State government who owned these schools gives priority attention to ensure that adequate construction of more infrastructure for healthy accommodation and learning are provided. This can be achieved by putting in place strategic monetary policy measures to finance adequate construction of infrastructures and proper maintenance of the academic environment.

**KEYWORDS:** Predisposing factors, Susceptibility, Female students, Ill-health, Higher institutions

### INTRODUCTION

Good health and wellbeing are the desired state of living deserve of every human being. However, by the nature of the creation of man, illness is a condition that most people are likely to experience in their life time. This means all human beings are susceptible to ill-health problems due to endogenous and exogenous influences from genetic, biological, environmental factors and disposition to a negative lifestyle. Predisposition factors are the risk factors that can lead a person to develop a medical or mental health problem. Risk factors refers to the genetic, biological, psychological, family, community, or cultural attributes, characteristics behaviours or exposures that are associated with or lead to a higher probability of occurrence of health-related outcomes (Aday, 2001; Substance Abuse and Mental Health Administration (SAMHSA) n.d. as cited in Byrum, 2023). These factors may not in isolation influences an individual experience of illness but often from the interaction between the endogenous and exogenous factors there will be a development of an illness. For example, Dahlgren and Whitehead (as cited in Martino, 2017) stated that susceptibility to mental disorders which are also ill-health may be determined by individual risk factors, which in turn are determined...these are impacted on by living and working conditions, which are determined by the broader socioeconomic, cultural and environment.

The environment in which people lives in when it is not properly maintained to be hazard free can have a major influence on people susceptibility to illness. Maintaining a healthy environment is an essential contributory factor that prolong peoples' life

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and improve quality of life. According to Bahadori et al (2015) factors such as hereditary, lifestyle, environmental factors, socio-economic status...housing, food security, health care, have significant effects on health and its outcomes including quality of life. On the contrary, at any time in life a situation is experience to compromise the well-being of the people, it will consequently promote diseases, disability and unhappiness. People for different reasons lives in different places at different point in time. For the purpose of acquiring education, the school environment becomes a temporary resident for the students. Accordingly, every school environment needs to be well built with adequate facilities that will be conducive and suitable for accommodation and learning. Unfortunately, the environmental conditions of the public higher educational institutions in Nigeria lacks much that is desire. The Nigeria public Universities, Polytechnics and Colleges of Education, Schools of Nursing and Midwifery are typically having overcrowded population of students in fundamentally inadequate infrastructure and facilities for their accommodation and learning. Overcrowding, shortage of hostel accommodation/dormitories, severe hot weather experience in the State, dilapidated utilities leading to open defecation, indiscriminate urination and waste disposal, are the obvious characteristics of these higher institutions of learning. The decrepit state of the environments of these schools could constitute environmental hazard to the students' health.

The hazardous nature of the higher institution environments added to the students' engagement in risk-behaviours is associated with experience of disease conditions that affect their physical and mental well-being with correspondent weakness of the cognitive ability as well as poor academic performance in the school (Bonnell et al., 2019; Ong et al., 2021; Orlu 2013). In fact, almost all Federal and State government owned higher educational institutions in Nigeria including those in Benue State have overcrowded population of students' that are sandwiched in few hostels' accommodation in the school space. Besides, the schools have very unhealthy lecture halls, dilapidated and unmaintained facilities, inadequate and poor water supply sources plus the poor quality of food available to eat. This unhealthy school environment often makes it difficult for the students to practice and maintain good hygiene necessary to prevent themselves from developing one type of illness or the other. Students are regularly breaking down with malaria, enteric fever, diarrhea, mental fatigue, respiratory diseases, traumatic injuries from falls and other social and physical activities, STIs, mental health problems and so on.

The impoverished living conditions of the higher institutions of learning in Benue State translate into added risk of contracting and transmitting diseases that could cause an unprecedented damage to intellectual productiveness of the students. Conventionally, these schools admit both the males and female students of different ages. But actually, it has been known that people may be more susceptible to ill-health at different times in their lives, and there is the likelihood that some individuals and groups may be more at risk than others at any given time (Aday 2001). In-as-much-as the population of some of these institutions comprised of both males and female students, the female students' health is of great concern and they are the focus of this study. Many diseases that particularly affect female students who lacks the basic conditions necessary to ensure good hygiene and healthiness is; being sandwiched in tiny poorly constructed hostel/dormitory rooms, unavailability of clean water supply or sources, decrepit and unsanitary toilets and bathrooms in the female hostels.

Furthermore, Aday (2001) reported that women, children, and the elderly are often vulnerable to a host of healthcare problems which might be associated with environmental factors. In fact, Olowankere and Okanlawon (2016) study of vulnerability status of public-school children found that only 5.7% children were not vulnerable, 68.0% were vulnerable, 22.7% were most vulnerable while 3.6% were mostly vulnerable. The findings indicate that a lot of children in public schools were most vulnerable given to the fact the government have deliberately abandoned the maintenance of public schools. The important thing about risk factors is that they are identifiable and observable prior to the event they predict in the life of the male or female as living being. For example, Sheldon et al (2021) study in a survey of 14,000 students across 19 universities in 8 countries revealed that 35% of students met the diagnostic criteria for at least one common mental health condition (Auerbach et al., 2016) as another form of ill-health challenges and the predisposing factors that affect the students are bound to result from their school environment or their history. Similarly, Limone, and Toto (2022) emphasized that, the individual growth with environmental interaction play a significant role in determining one's health. Definitely, several factors are likely to predispose female students susceptibility to ill-health in the higher institutions of learning in Benue State. These may include; genetic and physiological factors, lifestyle, harsh weather, school environment, age, gender, sex and many others.

An environment with poor characteristics which is not modified and maintained for conducive living has its greatest impact on people whose health status is already at risk of experiencing ill-health challenges. The general health and wellbeing of university students in Benue State and Nigeria has to be an important public health concern all stakeholders in the educational system. But contrary to this expectation, there is rather a conspicuous observation of the government deliberately neglecting or giving little attention to build a healthy learning environment for the students. In fact, the lack of adopting proactive initiatives to

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put adequate measures in place to provide healthy learning environment for the students' well-being and successful learning cannot be overemphasized. The deprive state of the higher educational institutions tend to be disadvantageous to the students' health status which presumably affect their activeness in academic participation and performance. Findings from the literature has shown that experiencing mental and physical health problems is associated with poor academic achievements (Hysenbegasi et al., 2005), increased study drop-out rates (Megivern et al., 2003), and 210% increase in the number of students discontinuing their studies due to poor mental health (Hubble and Bolton, 2020 as cited in Sheldon, 2021). The situation is almost similar in most colleges since they are predisposed to similar conditions and forms of livelihood (Limone, & Toto, 2022).

Several factors have contributed to the mental and physical distress and discomfort associated with undergraduates. But as explained by Sebastian (2008) some groups of people are found to be predisposed and more susceptible to illness or life events and could experience worse health outcomes than others. For instance, sex is found to be one of the variables that has a significant contribution to the mental illnesses that people experience in learning institutions. Relatedly, Swende (2023) explained that women in particular have a unique set of health care challenges and are at a higher risk of developing certain disease condition than men. Soh et al (as cited in Limone & Toto, 2022) stated that the prevalence of the ill-health conditions tends to be much higher among female students than male students. Gender wise, it is commonly reported that women are more at risk for physical and psychological, or social health problems than men. Even so, it is still recognized that any person can be vulnerable at any given point in time due to life circumstances or response to illness or event (Chesnay, 2008). In the same vein, it is also known that some people may be more vulnerable or less vulnerable to ill-health at different times in their lives and there is likelihood that some individuals and groups may be more at risk than others at any given point in time (Aday, 2001; Fortunka, 2020; Jones, & Bartlett Learning, 2017; Olowankere, & Okanlawon, 2016).

In fact, the growing interest in health and its determinants is a response to the growing pace of people's lives, which society puts health first, which makes us a community of health (Fortunka, 2020). Generally, in Nigeria the study on gender dimension of illnesses as it affects people is skewed towards men and children more that women. Besides, the inattention of the government or policymakers to gender-sensitive policies that would address the health-related issues of women in Nigeria has an extended effect on the female students in higher educational institutions. In view of the concern arising from the government insensitivity or negligence of putting in place adequate measures to provide and sustained a healthy learning environment for the students, this study seeks to investigate predisposing factors to female students' susceptibility to ill-health in higher educational institutions in Benue State.

### **Objectives of the Study**

The aim of this study was to achieve the following objectives, which are to:

1. Describe the predisposing factors that may expose the female students' susceptibility to ill-health in higher educational institutions in Benue State.
2. Identify the endogenous factors that predisposed the female students' susceptibility to ill-health in higher educational institutions in Benue State.
3. Identify the exogenous factors that predisposed the female students' susceptibility to ill-health in higher educational institutions in Benue State.

### **Research Questions**

The research questions to answer in order to established that the stated objectives are achieved were as follows.

1. What are the predisposing factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State?
2. What are the endogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State?
3. What are the exogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State?

## **METHOD**

### **Research Design**

The research adopted a descriptive survey design to achieve the stated objectives. Three higher educational institutions which are Benue State University Makurdi, University of Agriculture Makurdi (Now Joseph Sarwuan Tarkaa University of Agriculture Makurdi), and School of Nursing and Midwifery Makurdi in Benue State were the designated settings of the study where the target

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population was accessed. Quantitative and qualitative methods were employed for data collection from the sample drawn population of the three institutions designated for the study.

### Population/Sample

The target population for the study was female students of the Benue State University Makurdi, University of Agriculture Makurdi (Now Joseph Sarwuan Tarkaa University of Agriculture Makurdi), and School of Nursing and Midwifery all situated in Makurdi Benue State. There are three senatorial zones in Benue State that has higher educational institutions but one senatorial zone was chosen to access the target population. Within this chosen senatorial zone, are the three higher educational institutions mentioned above. In sampling for the study, the homogenous sampling technique, which is a type of purposive sampling method was used. Purposive sampling is a non-probability sampling method that gives the researcher the liberty to rely entirely on his/her judgement to select the sample from the target population to participate in a study. The homogenous technique was suitable for selecting the sample required since they all share common sex characteristics and are living in the same research settings. A total of 180 were female students were selected as the sample from the three higher educational institutions for the study. Their demographic characteristics include age, marital status, occupation, and academic programme.

### Instrument for data Collection

A self-developed questionnaire that consisted of twenty (20) items was used for data collection from the female students who were participants in the study. As it was a self-developed research tool for the purpose of the study, the test of the questionnaire to determine its reliability was done with the use of the Statistical Package Social Sciences (SPSS) version 20. The Cronbach alpha reliability coefficient of .65 which is statistically considered acceptable was obtained from measurement of the twenty (20) items questionnaire. Besides the use of the questionnaire, interview was used for gathering information regarding the students' observation of the environment of their school they are living and studying in.

Prior to having access to the population for selection of the sample and collection of data, the authorities of the three institutions were met to seek and obtain their authorization to meet with the and solicit their consent of the students to participate in the study through providing necessary information needed to use for the research. On obtaining the ethical approval from the top management of these institutions, we proceeded to meet the female students in their lecture hall and at different times of completion of lectures. Their consent was sought on explanation of the purpose and nature of the study. They were clearly assured of the nondisclosure of the information they are providing to earn their trust and confidentiality of the use, and management of the information obtained from them. They were also informed of the right to discontinue participation during the process of giving information required for the study.

### DATA ANALYSIS

The data collected from the students was achieved within a period of three weeks. The data analysis was done with the use of descriptive statistics particularly to obtain the frequency and percentages values that were used for the interpretation of the results from the Statistical Package Social Sciences (SPSS) version 20. The statistics is useful in the presentation and interpretation of the data analyzed in a more meaningful way, that allows for easy description of the outcome of the study.

### RESULTS

A total of 180 female students were selected based on their willingness and acceptance to participate in this study, which was focused on assessment of the predisposing factors to female students' susceptibility to Ill-health in Higher Educational Institutions in Benue State. The students age ranged from 18–40years. Detailed summary of the demographic characteristics of students are presented in table 1 below.

**Table 1: Summary of Distribution of Demographic Characteristics of the Students**

Variables (N=180)	Frequency	Percentage (%)
<i>Age</i>		
18-27	71	44.4
27-33	32	20
33-40	19	11.9
<i>Marital status</i>		

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Single	122	76.3
Married	38	23.7
<i>Occupation</i>		
Students	121	75.6
Civil servants	39	24.4
<i>Academic prog.</i>		
Undergraduates	124	77.5
Master degrees	28	17.5
PhD	8	5

Table 1 above shows the socio-demographic characteristics of the female students who participated in the study. The age mean was  $32.50 \pm 5.64$  years. Among these students, 71(44.4%) were age between 18-27years, 32(20%) were age between 27-33years. While 19 (11.9%) students were age between 33-40years. For marital status, students who are single were 122(76.3%), married were 38(23.7%), by occupation, students were 121(75.6%) and those that are civil servants were 39(24.4%). Regarding academic programme, 124(77,5%) were undergraduates, 28(17,5) master's degree students and 8(5%) PhD students.

**Table 2: Predisposing factors to female student's susceptibility ill-health**

Variables	Frequency	Percentage (%)
Environmental factors	127	75.6
Physiological factors	115	72
Lifestyle	128	80

Table 2 represent the percentage rate for the predisposing factors that could influence the female students' susceptibility to ill-health in the three higher institutions. Environmental factors contribute 75.6%, physiological factors contribute 72%, and their lifestyle contribute 80%.

**Table 3. Endogenous and exogenous factors influence on female students' susceptibility to ill-health**

Variables	Frequency (N-180)	Percentage
<i>Endogenous factors</i>		
Genetic makeup	26	16.2
Menstruation	118	73.7
Hormone activity	17	10.6
<i>Exogenous factors</i>		
Overcrowding (hostels/lecture halls)	158	58.8
Poor sanitary conditions	138	86.3
Poor quality water	52	32.6
Poor quality of food consumed	17	10.6
Unhygienic environment	91	56.8
Risky behaviours	89	55.7
Body exposure	45	28
Severe hot weather	12	7

Table 3 shows the percentage rate of the endogenous and exogenous factors that influences that female students' susceptibility to ill-health in the three higher educational institutions in Benue State selected the study. The distribution of the percentages for endogenous factors on one hand has genetic traits 16.3%, female menstruation 73.7%, and hormone activity 10.6. On the other

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hand, exogenous factors have overcrowding 58.8%, poor sanitary condition 86.3%, use of poor-quality water 32.6%, poor quality of food consumed 10.6%, unhygienic environment 56.8%, risky behaviours (such as drinking alcohol, smoking, abortion etc.) contribute 55.8% and body exposure from indecent dressing 28%. Exposure to severe hot weather condition 7%.

### **DISCUSSION**

This study aimed to assess the predisposing factors that influence female students' susceptibility to ill-health in higher educational institutions in Benue State. Three questions were set to be answered for the purpose of achieving the stated research objectives.

Question one: What are the predisposing factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State? The findings from the research participants drawn from Benue State University, Joseph Sarwuan Tarkaa University, and School of Nursing and Midwifery all in Makurdi Benue State suggests that the female students genetic/physiological constitution, unfavourable environmental conditions, and negative lifestyle influences their susceptibility to ill-health. These factors in many cases elicit the development of an illness in the individual usually through interaction with one another. These findings corresponded with available evidence from previous studies reviewed. For example, Lifestyle accounts for about 60% of health potential (Fortunka, 2020). Sheldon et al (2021) in a survey of 14,000 students across 19 universities in 8 countries revealed that 35% of students met the diagnostic criteria for at least one common mental health condition and the predisposing factors that affect the students are bound to result from their school environment or their history. An environment with poor characteristics which is not modified and maintained for conducive living has its greatest impact on people whose health status is already at risk (Aday, 2001; Bhuyan, 2004; Martino, 2017; SAMHSA, n.d.). Sex as a biological determinant of human differences has a significant contribution to the mental illnesses that people experience in learning institutions. Swende (2022) stated that women have a unique set of health care challenges and are at a higher risk of developing certain disease condition than men. Soh et al (as cited in Limone & Toto, 2022) stated that the prevalence of the ill-health conditions tends to be much higher among female students than male students. Conclusively, women in particular are recognized be at risk for poor physical and psychological, or social health.

Question two: What are the endogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State? The result of the data collected and analyzed shows the endogenous factors that influence the female susceptibility to ill-health reside within their genetic composition, menstruation cycle, and hormone activity. These findings agreed with other empirical evidences on the relationship between endogenous factors and illness. For example, Limone and Toto (2020) also explained that genetic risk factors are based on an individual's genes. Moreover, the predisposing factors that affect the students are bound to result from their school environment or their history; therefore, the growth environment and interaction play a significant role in determining one's health. As a result, some diseases are developed duly from an individual's 'genetic make-up'. They further explained that many other diseases, such as asthma or diabetes, reflect the interaction between the genes of the individual and environmental factors. Cutolo et al (2004) reported that sex hormones (estrogen, androgens and progesterone etc.) plays an important role as modulators of the autoimmune disease/perpetuation. Other researchers opined that higher disease risk in females appears to follow key hormonal transitional time points in a female reproductive life-cycle, such as puberty, menarche, menstruation and menopause (Baibergenova et al., 2006; Kynyk et al., 2011 as cited in Nwaru et al., 2016).

Question three: What are the exogenous factors that influence the female students' susceptibility to ill-health in higher educational institutions in Benue State? Regarding the exogenous factors responsible for the female students' susceptibility to ill-health the many of these environmental and lifestyle related negative behaviours were identified. These include, overcrowding of students in both the hostels and lecture halls poor sanitary condition, use of poor-quality water, poor quality of food consumed, unhygienic environment, risky behaviours (such as drinking alcohol, smoking, abortion etc.), body exposure from indecent dressing. and exposure to severe hot weather condition in the State. These findings agreed with evidence from previous studies that any environment that is confine with unhygienic characteristics, which are left unmodified and not maintained for conducive living has its greatest impact on people whose health status is already at risk (Aday, 2001; Hersi et al., 2017; Limone, & Toto, 2022; Martino, 2017; Najera, 1993, Ojo, 2004; SAMHSA, n.d.). An unmaintained school environment often makes it difficult for the students to practice and maintain good hygiene to be free from falling ill. The impoverished living conditions of the higher institutions of learning in Benue State translate into added risk of contracting and transmitting diseases that could cause an unprecedented damage to intellectual productiveness of the students. According to Limone, and Toto, (2022) the situation is almost similar in most colleges since they are predisposed to similar conditions and forms of livelihood.

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## CONCLUSION

Living and maintaining a good mental and physical health and wellbeing is essential for the promotion of the peoples' quality of life and longevity as they grow from age to age. However, it is very rare to achieve the need to be completely free from some health challenges primarily due to our inherent predisposition to ill-health from various factors. This is the more reason why this study was carried out to examine the predisposing factors and female students' susceptibility to ill-health in higher educational institutions in Benue State. The findings from the study have proven that the female students are by virtue of their genetic/physiological constitution, unhealthy environment and lifestyle put them at the risk of mental and physical health disorder or disease. Unfortunately, the three higher learning institutions in which the students schooling are schooling in have overcrowded population sandwiched in inadequate and poor hostels accommodation, unsanitary lecture halls, unmaintained environment plague with infested wastes, harsh weather condition, poor quality water and food consumed. These unhealth environmental potential could invariably interact with endogenous factors to increase the female students' susceptibility to ill-health. In fact, the outcome of this study reveals the reality of the health consequences most especially the female students in the public higher educational institutions in Benue State are facing.

## Implication for the Study

Learning becomes interesting and successfully acquired largely where the learning environment is suitably created to be conducive to positively motivate the students physical and mental activities in their pursuit to achieve higher educational qualification. The opposite of this in many cases result to the students poor learning habit and academic performance especially if they are constantly experiencing health problems triggered by the unhealthy environmental living conditions that often interact with their inherent predisposing factors to ill-health. Until the students in the public higher institutions are guaranteed a safe health learning environment to minimize the risk factors that influences their susceptibility to ill-health problems, their determination for higher academic pursuit will diminish.. Consequently, when the human right approach is evoked focusing on the interest of students in school at all levels, more relevant and congruent public health policies and programmes should be developed to reposition the institution to align with global best practices.

In view of this, it is important and necessary for the Federal and State government who owned these schools gives priority attention to ensure that adequate construction of more infrastructure for healthy accommodation and learning are provided. This can be achieved by putting in place deliberate policy action to increase the fiscal budget in the educational system to activate adequate construction and proper maintenance of the academic environment. Until this is done, the female students and even the males in higher institutions of learning shall continue to suffer the menace of ill-health problems associated with their predisposing factors dwelling the in the self and the school environment. Indeed, the study will be an important reference for the governments to adopt as a source of influence to her actions that will lead to the improvement of the conditions of learning environments of these institutions.

Acknowledgement: The authors gladly appreciate themselves for the various contribution each gave to the successful completion of the research from the beginning to the end.

Funding: This research was started and completed from the authors' out-of-pocket finances.

Conflict of interest: The authors has a common understanding and agreement about the study at every stage and this makes it a conflict of free collaboration to author the paper.

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## The Influence of Study Habits, Nutritional Status and Economic Level on the Physical Fitness of SMA N 7 Kerinci Students



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**ABSTRACT:** This research was motivated by the low physical fitness of students obtained based on observations and the results of the author's interview at SMA N 7 Kerinci which showed that students had poor learning habits, unfulfilled nutrition and the economic level of parents who were in the medium and low categories. The purpose of this study was to see how the direct influence or indirect influence between study habits, nutritional status and economic level on the physical fitness of students of SMA N 7 Kerinci. This type of research is quantitative research with a comparative causal approach with a sample of 30% of the existing population, namely 30 students taken using random sampling techniques. The research instruments used were questionnaire sheets, fitness tests of Indonesian students and body mass index (BMI) measurements. The data obtained will be analyzed using path analysis techniques (Part Analysis). The results of research and analysis show: (1) There is a direct influence of study habits on physical fitness, in  $P_{y1}$  of 0.316 or 9.98%. (2) There is a direct influence of nutritional status on physical fitness, in  $P_{y2}$  of 0.306 or 9.93%. (3) There is a direct effect of economic level on physical fitness, in which  $p_{y3}$  is 0.461 or 21.25%. (4) There is no effect of study habits through economic level on fitness, in  $P$ -value of  $0.289 > 0.05$ . (5) There is no effect of nutritional status through economic level on physical fitness, in  $p$ -value of  $0.235 > 0.05$ . (6) There is an influence of study habits, nutritional status and economic level together on physical fitness with an  $R$ square value of 0.399 or 39.9%.

**KEYWORDS:** Fitness, Study habits, nutrition, economy

### I. INTRODUCTION

Cunningham et al., (2015) Education is a major factor in the formation of a person's individual. Education plays a very important role in shaping a person's good and bad. (Ruafedah, 2020). An education system with good quality is expected to produce a quality next generation and be able to bring progress to society, state and the life of the nation and state. Education includes formal, non-formal and informal education can complement and enrich each other. at the education level (Ogundari & Awokuse, 2018; Rhodes et al., 2017). Education consists of several levels, namely basic education (SD), secondary education (SMP), upper education (SMA), and higher education (University).

As stated in the Law of the Republic of Indonesia concerning the National Education System Number 11 of 2022 article 3 that national sports education functions to develop physical, spiritual, and social abilities and shape the character and personality of the nation. Education is the most important aspect to improve one's quality of life towards a better or more productive (Joni et al., 2023). Productivity is a universal concept that creates more goods and services to meet human needs, through the use of limited resources (Jatnika, 2022).

Ruíz-Roso et al., (2020) Basically, productivity is influenced by three factors, namely workload, work capacity and additional load of the work environment associated with physical activity, psychological and social factors affect the workforce. Relevant work ability has the ability to complete the work within the given time. Although the additional burden caused by the work environment includes physical, chemical, and factors of the workforce itself, including biological, physiological and psychological. Everyone's productivity is different, some depend on the availability of nutrients in the body that are lacking, low physical fitness, less rest time and so on (Andriani, 2022). The productivity of human life can be obtained from education through physical education, sports and health learning (Eggoh et al., 2015; Pagliai et al., 2021).

Physical education is part of the overall subjects taught in schools and cannot be separated from other education, even a very important part of education in supporting other educational processes (Sin & Hudayani, 2020). This is in accordance with Law of the Republic of Indonesia Number 11 of 2022 concerning the National Sports System article 26 paragraph 1 which states

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that "Coaching and development of educational sports is carried out and directed as a systematic and sustainable unit with the national education system". The development and coaching of sports education is an effort to increase potential in catching up, especially in physical education learning in schools. Physical education in high school should lead to improved physical fitness, motivation, physical growth and development, intellectual development, learning and mental achievement. Physical education has an important role, namely providing opportunities for students to be directly involved in various learning experiences through physical and health activities carried out systematically (Mustafa & Dwiyoogo, 2020).

Thus, physical education in schools is expected to improve physical fitness, learning motivation and learning achievement. Physical education has a comprehensive purpose that includes psychomotor / skills, cognitive / knowledge, affective / attitudinal aspects. Through physical education, students will be directed to become strong human beings both physically and spiritually (Alif & Sudirjo, 2019). Physical education and sports in schools are taught to improve physical fitness. Through physical education learning at school, students are expected to be able to improve their physical fitness. So that later students can become children who excel, healthy, fit and have noble morals. Physical fitness is defined as the body's ability to carry out physical and psychological activities without experiencing extreme fatigue and there is still energy for other activities in filling spare time. For this reason, it is necessary to have physical fitness so that the activities that have been planned run as they should.

Physical fitness can be influenced by good study habits, because optimal learning will produce good learning results. Wijaya (2019) explained that with high learning habits, students will get high learning outcomes according to the objectives of learning activities. According to Faturizkiyah (2020) that learning habits are not natural talents or innate traits that students have since childhood, but are behaviors that are learned consciously for some time and repeated all the time, various behaviors are accustomed so that they are finally carried out spontaneously as an automatic response to a learning process, to support good study habits, good body conditions are needed in PJOK Known for physical fitness. With this, students will learn physical education well, so that students will strive to improve fitness in order to remain accomplished.

In addition to learning habits, another factor that affects physical fitness is the nutritional state of students by looking at their nutritional status. Nutritional status is a measure of success in fulfilling nutrition for children indicated by the body weight and height of students (rosita et al., 2020). Nutritional status also greatly affects physical fitness, life productivity and thinking power (Amin, 2019). If a person is less fulfilled nutrition, it will inhibit physical ability, motivation and enthusiasm in carrying out daily activities. Nutritional problems in developing countries in general are still dominated by problems of lack of protein energy (KEP), iron nutrition anemia (AGB), disorders due to iodine deficiency (GAKY), lack of vitamins (KVA) and obesity in big cities (Suardi, et al, 2023). Indonesia as a developing country is also still experiencing student nutrition problems as meaning that while the problem of undernutrition has not been overcome thoroughly, it has emerged new, namely in the form of more malnutrition). Based on basic health research (Riskesmas) in 2010, it is known that prevalence is malnourished (body weight according to age). According to WHO in (Ministry of Health. 2009), an area is said to experience community nutrition problems if it experiences a lack of 10% of the number of young children available. Based on this, Indonesia is still experiencing community nutrition problems because the number of undernourished toddlers is still above 10% (Ministry of Health of the Republic of Indonesia. 2009).

Parents who are highly educated will certainly have a decent / good job, and have a high income that brings them to high economic status, so parents with such criteria will prioritize and give their best to support the growth and development of their children (Rahayu, 2019). Another case with parents who have low education, then their knowledge, skills and abilities are also low. Thus, it is assumed that there will be fewer job opportunities and low incomes that bring them to low economic status so that to meet needs will be difficult to meet. Therefore, parental education and parental economic status are continuous things that affect how much physical activity level.

The problem encountered is the low learning habits of students. Based on observations made by the author at SMA Negeri 7 Kerinci, it was found that 70% rarely learned. The reason conveyed by students is that after school students prefer to play with their friends, some others help their parents work, play games, watch television and other activities. Learners learn only when there is schoolwork. Even though good study habits will provide good learning results, one of which is physical education learning. With good learning results, it will improve physical fitness, good learning enthusiasm, and good achievement. (Ukpong & George, 2013).

Another reality obtained in the field of students is getting tired quickly in participating in activities at school, especially sports. In two hours of lessons, not all students are willing to stay in the field until class hours are over because they are tired. Then, when studying in class, students are also often sleepy and even fall asleep, even though they don't sleep late. Through

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field observations related to food consumed, that the food consumed every day has not met the criteria for adequate nutrition due to the economic level of most parents of students in the medium to lower category.

The ability or economy of parents to pay attention to sufficient needs for children will affect the growth and development of children. Sometimes only consume vegetables, other times consume tofu and fried tempeh and fish occasionally. So, naturally, the physical fitness of students is also disrupted because of unmet balanced nutritional needs. Based on some of the studies above, there are many factors that can determine the physical fitness of students, namely study habits, nutritional status, and economic level. Therefore, there needs to be a deeper study to see how the direct and indirect influence between study habits, nutritional status and economic level on the physical fitness of SMA N 7 Kerinci students.

## II. MATERIAL AND METHODS

This type of research is quantitative research with a comparative causal approach, the purpose of this study is to determine the influence both directly and indirectly of study habits, nutritional status, and economic level on the physical fitness of students of SMA N 7 Kerinci. In quantitative research like this using simple regression data analysis techniques and regression students. A sample of 30% of the existing population of 30 students was taken using random sampling techniques. The research instruments used were questionnaire sheets, fitness tests of Indonesian students and body mass index (BMI) measurements. The data obtained will be analyzed using path analysis techniques.

Data analysis techniques are carried out descriptively and inferentially, the use of descriptive data analysis techniques is to find an overview of the characteristics of the spread of scores / values of each variable studied. Descriptive analysis is used in terms of data presentation, central size, and spread size. The presentation of data uses frequency distribution lists and histograms. Central measures include mean (Mean), middle mean (Median), and frequently occurring values (Mode). Spread measures include variance and standard deviation. While inferential analysis / causal analysis is used to test analysis requirements and hypotheses using path analysis.

Kadir & Asrohah, (2015) Path analysis is "an analytical technique used to study causal relationships between independent variables and bound variables where these causal relationships are arranged in the form of hypothetical models based on scientific substance, namely theoretical learners". Next Riduwan, (2010) "Path analysis is used to analyze the pattern of relationships between variables with the aim of determining the direct or indirect influence of a set of independent variables (endogenous) on the dependent variable (exogenous)". Path analysis (Part Analysis) is a means or analysis technique used to study causal relationships with the aim of determining the direct or indirect influence of a set of independent variables (endogenous) on bound variables (exogenous) where these causal relationships are arranged in the form of hypothetical models based on scientific substance, namely theoretical learners.

Before hypothesis testing, analysis requirements testing is first carried out including: (1) data description, (2) analysis requirements test, namely normality test, (3) regression linearity test and regression significance test, and (4) path analysis which includes: model testing and hypothesis testing.

## III. RESULTS AND DISCUSSION

The description of the data that will be submitted below is to provide a general overview of the dissemination of data that has been carried out in the field. The sample in this study was 30 students of SMA N 7 Kerinci. The study was conducted in March 2023. The research was conducted by distributing questionnaires, conducting tests and measuring BMI to take data addressed to grade X students of SMA N 7 Kerinci. The research was conducted at SMA N 7 Kerinci.

### 1. Study Habits

Before distributing the questionnaire to respondents, the author has conducted a questionnaire trial first with the following results:

**Table 1. Results of the study habit questionnaire trial**

N	Number of Statements	Mean Rcount	Rtable	Significance	Decision
10	30	0,884	0,632	0,05	Valid

The results obtained are in accordance with the table above, namely the questionnaire that will be used as an instrument of study habits has been validated with the number of Rcalculate > Rtable with a significance of 0.05 and the results are valid. For the results of research on student learning habits through the distribution of questionnaires obtained the following data:

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**Table 2. Research data on student study habits**

No	Interval	Kategori	Frekuensi	Persentase
1	118 - 123	Very high	3	10%
2	112 - 117	Tinggi	5	17%
3	105 - 111	Keep	7	23%
4	99 - 104	Low	7	23%
5	93 - 98	Very low	8	27%
<b>Sum</b>			<b>30</b>	<b>100%</b>

From the table above, it is known that students' learning habits are in the very high category as many as 3 students (10%), are in the high category as many as 5 students (17%), are in the medium category as many as 7 students (23%), are in the low category as many as 7 students (23%), and are in the very low category as many as 8 students (27%).

### 2. Nutritional Status

Measurement of nutritional status in this study was carried out using BMI limit standards. Based on the results of nutritional status research which is divided into four categories, namely less, normal, more and obesity. It can be explained in the table below:

**Table 3. Percentage of nutritional status of SMA N 7 Kerinci students**

Nutritional	Frekuensi	Persentase (%)
Less	1	3%
Usual	24	80%
More	5	17%
Obesity	0	0%
<b>Sum</b>	<b>30</b>	<b>100%</b>

From the table above, it is known that the nutritional status of students is in the category of less than 1 student (3%), is in the normal category of 24 students (80%), is in the category of more than 5 students (17%), is in the obesity category of 0 students (0%).

### 3. Economic Level

The economic level of parents studied in this study is based on functional structural theory that views every structure, both micro and meso and macro has a function and contributes to the survival of the structural system. On that basis, instrument items were developed in the form of questionnaires on the economic level of parents of students. Before distributing the questionnaire to respondents, the author has conducted a questionnaire trial first with the following results:

**Table 4. Results of the economic level questionnaire trial**

N	Number of Statements	Mean Rcount	Rtable	Significance	Decision
8	17	0,884	0,787	0,05	Valid

The results obtained are in accordance with the table above, namely the questionnaire that will be used as an economic level instrument has been validated with the number of Rcalculate > Rtable with a significance of 0.05 and the results are valid. So that data is obtained that is distributed in the following.

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Table 5. Descriptive statistics of the economic level of students of SMA N 7 Kerinci

No	sum Score	Score Maximal	Pesentase	Mean
1	36	68	53%	2.11764706
2	37	68	54%	2.17647059
3	34	68	50%	2.52941176
4	35	68	51%	1.64705882
5	35	68	51%	2.05882353
6	32	68	47%	1.88235294
7	33	68	49%	1.94117647
8	32	68	47%	1.88235294
9	34	68	50%	2.05882353
10	36	68	53%	2.47058824
11	32	68	47%	1.88235294
12	35	68	51%	2.05882353
13	25	68	37%	1.94117647
14	33	68	49%	1.94117647
15	34	68	50%	2
16	24	68	35%	1.76470588
17	23	68	34%	1.35294118
18	34	68	50%	2
19	24	68	35%	1.64705882
20	39	68	57%	2.29411765
21	29	68	43%	1.70588235
22	23	68	34%	1.58823529
23	31	68	46%	1.82352941
24	30	68	44%	1.52941176
25	30	68	44%	1.47058824
26	30	68	44%	1.76470588
27	31	68	46%	1.47058824
28	35	68	51%	2.05882353
29	36	68	53%	2.11764706
30	30	68	44%	1.35294118
<b>Jumlah</b>	<b>952</b>	<b>2040</b>	<b>1400%</b> <b>47%</b>	<b>56.5294118</b> <b>2</b>

Through calculations, an average score of 56.5294118: 30 = 2 (rounding) in the very appropriate category, and an average percentage of 1400: 30 = 47% (rounding) in the low category, means that the economic level is functioned by parents who are low at 47% to meet the needs of the body in obtaining good physical fitness in SMA N 7 Kerinci students in accordance with functional structural theory.

#### 4. Physical Fitness

The results of physical fitness research of grade X students of SMA N 7 Kerinci are categorized into 5 categories using the Indonesian Student Fitness Test formula. The data obtained as contained in the following table:

Table 6. Frequency Distribution of Physical Fitness of Female Students

No	Percentage	Frequency	Category	Frequency	Persentase
1	27	30	Very good	0	0%
2	23	26	Good	8	27%

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<b>3</b>	<b>19</b>	<b>22</b>	<b>Keep</b>	<b>21</b>	<b>70%</b>
<b>4</b>	<b>15</b>	<b>18</b>	<b>Low</b>	<b>1</b>	<b>3%</b>
<b>5</b>	<b>0</b>	<b>14</b>	<b>Very low</b>	<b>0</b>	<b>0%</b>
<b>Sum</b>				<b>30</b>	<b>100%</b>

The table above obtained the physical fitness of grade X students of SMA N 7 Kerinci as a whole, namely as many as 0 students (0.00%) very well, 8 students (27%) with good category, 21 students (70%) with medium category, 1 student (3%) with low category, and 0 students (0%) with very low category. The highest frequency is in the medium category, which is 21 students (70%). Thus, the physical freshness of grade X students of SMA N 7 Kerinci as a whole is included in the medium category. Test Requirements analysis is carried out as a basis for consideration to select and establish data analysis techniques used in hypothesis testing. The testing requirements of the analysis include, normality testing and regression linearity testing.

This normality test is tested using the Kolmogrov-Smirnov test according to the book's instructions (Kadir 2016). Normality testing using the Kolmogrov-Smirnov test is carried out with the help of SPSS 20.0 and the basis for decision making as follows:

**Table 7. Normality Test Kolmogrov-Smirno**

	Study Habits	Nutritional Statuz	Economic Level	Physical Fitness
<b>Test Statistic</b>	<b>089</b>	<b>152</b>	<b>144</b>	<b>114</b>
<b>Asymp. Sig. (2-tailed)</b>	<b>200</b>	<b>073</b>	<b>115</b>	<b>112</b>

From the table above, in the study habit variable obtained a statistical test of 0.089, this number is the same as the results manually and in Asymp Sig (2-tailed) of 0.200 or can be written as a probability value (p-value) = 0.200 > 0.05 or H0 accepted, thus the learning habit variable is normally distributed. In the Nutritional Statuz variable, a statistical test of 0.152 is obtained, this figure is the same as the results in aging and in Asymp Sig (2-tailed) of 0.073 or can be written as a probability value (p-value) = 0.073 > 0.05 or H0 is accepted, thus the variable nutritional status is normally distributed. In the economic level variable, a statistical test of 0.144 is obtained, this number is equal to the results in a manual manner and in Asymp Sig (2-tailed) of 0.115 or can be written as a probability value (p-value) = 0.115 > 0.05 or H0 is accepted, thus at the variable economic level is normally distributed. In the physical fitness variable, a statistical test of 0.114 is obtained this number is the same as the results in a manual manner and in Asymp Sig (2-tailed) of 0.112 or can be written as a probability value (p-value) = 0.112 > 0.05 or H0 is accepted, thus in the physical fitness variable is normally distributed.

The Linearity Test aims to see whether each data on Learning Habits (X1), Nutrition Statuz (X2), and Economic Level (X3) tends to form a Linear (straight) line with Physical Fitness (Y). Carried out with the help of the SPSS 20.0 program and the basis for decision making as follows:

**Table 8. Linearity Test Summary**

Uji Linieritas	Sig,	P-Value	Information
<b>Y atas X1</b>	<b>0,548</b>	<b>0.05</b>	<b>Linier</b>
<b>Y atas X2</b>	<b>0,806</b>		
<b>Y atas X3</b>	<b>0,967</b>		
<b>X3 atas X1</b>	<b>0,618</b>		
<b>X3 atas X2</b>	<b>0,730</b>		

Based on the table above, the value of Sig. <  $\alpha$  = 0.05 is obtained. In other words, it can be concluded that variables tend to form straight lines (Liner).

### 1. Hypothesis Testing

Hypothesis testing in this study uses path analysis through 2 (two) structural model tests. Testing on structural model 1 is Learning Habit variables (X1), Nutritional Status (X2), Economic Level (X3) and testing on structural model 2 namely Learning Habits (X1), Nutritional Status (X2), and Economic Level (X3) with Physical Fitness (Y). Through these two structural model tests, later the value of the path coefficient of each variable studied can be calculated and answer the hypothesis that has been proposed in this study

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Table 9. Summary of Path Coefficients Between Research Variables

Model	Variable	Koef Beta	Sig.	P-Value	information
Structural 1	X <sub>1</sub> X <sub>3</sub> (P <sub>31</sub> )	-0.107	0,578	0,05	Insignificant
	X <sub>2</sub> X <sub>3</sub> (P <sub>32</sub> )	-0.139	0,471		Insignificant
Structural 2	X <sub>1</sub> Y (P <sub>y1</sub> )	0,316	0,049		Significant
	X <sub>2</sub> Y (P <sub>y2</sub> )	-0,306	0,058		Significant
	X <sub>3</sub> Y (P <sub>y3</sub> )	0.461	0,006		Significant

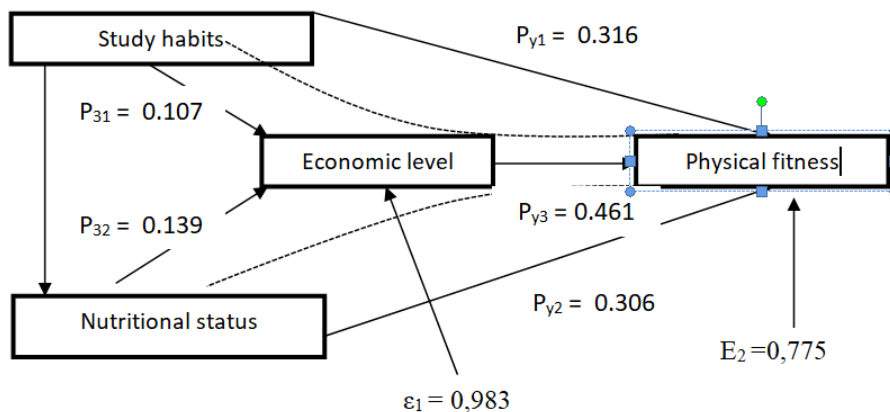


Figure 1. Combined Interstructural Model Testing

## 2. Testing Research Hypotheses Based on Structural Models

### a. Hypothesis 1

Ha: There is a direct influence of study habits on physical fitness (Ha accepted) Based on the results above, the magnitude of the direct influence of study habits on physical fitness is 9.98%, while the rest is influenced by other factors that are not explained in this study.

### b. Hypothesis 2

Ha: There is a direct influence of nutritional status on physical fitness (Ha accepted) Based on the results above, the magnitude of the direct influence of study habits on physical fitness is 9.93%, while the rest is influenced by other factors that are not explained in this study.

### c. Hypothesis 3

Ha: There is a direct influence of economic level on physical fitness (Ha accepted) Based on the results above, the magnitude of the direct influence of study habits on physical fitness is 21.25%, while the rest is influenced by other factors that are not explained in this study.

### d. Hypothesis 4

Ha: There is an indirect influence of study habits on physical fitness through the economic level (Ha rejected) Based on the results of the analysis test of each path coefficient, getting the results P31 = - 0.107 , p-value = 0.578 / 2 = 0.289 > 0.05 or H0 accepted and Ha rejected hereby it can be concluded that there is no influence of study habits through the economic level on physical fitness

### e. Hypothesis 5

Ha: There is an indirect influence of nutritional status on physical fitness through the economic level (Ha rejected) Based on the results of the analysis test of each path coefficient, obtaining the results P32 = - 0.139, p-value = 0.471/2 = 0.235 > 0.05 or H0 accepted and Ha rejected hereby it can be concluded that there is no effect of nutritional status through economic level on physical fitness.

### f. Hypothesis 6

Ha: There is an influence of study habits, nutritional status and economic level, together with physical fitness (Ha accepted) Based on the table (model summary), obtained the value of Rsquare = 0.399 and the table of anova obtained the value of Sig. =

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$0.004 < \alpha - 0.05$ , then the decision is  $H_0$  rejected and  $H_a$  accepted. That is, there is an influence of study habits, nutritional status and economic level together on physical fitness. Based on the value of  $R^2 = 0.399$  shows that the magnitude of the influence of study habits, nutritional status and economic level together on physical fitness. It was 39.9% while the rest was influenced by other factors not described in the study

### **DISCUSSION**

Physical fitness is a state that is highly desired by everyone. With physical fitness, people will be able to appear more dynamic / enthusiastic and create work productivity. (Darmawan, 2017). Ukpong & George, (2013) suggests that students with good study habits will achieve good learning outcomes and vice versa. Physical fitness is very useful for children to support physical work capacity and increase cardiovascular endurance, one of which is influenced by body composition (Sepriadi, 2017).

#### **1. There is a significant direct influence of Study Habits on the Physical Fitness of students of SMA N 7 Kerinci**

Based on research conducted related to the influence between study habits and physical fitness of SMA N 7 Kerinci students, significant results were obtained by 9.98%, and the rest were influenced by other factors not explained in this study. In a sense, that physical fitness is directly influenced by one's habits, one of which is study habits. Good study habits carried out by students improve the quality of students as individuals who have their abilities, personalities and skills (Legianto et al., 2022). With good study habits, the results achieved will also be good as it is physical fitness learning. So it is clear that, study habits have a direct effect on a person's physical fitness level.

#### **2. There is a significant direct influence on nutritional status on the physical fitness of students of SMA N 7 Kerinci**

Based on research conducted related to the influence between nutritional status and physical fitness of SMA N 7 Kerinci students, significant results were obtained of 9.93%, and the rest were influenced by other factors not explained in this study. There have been many studies that prove that good physical fitness requires adequate nutritional assumptions (Anggraeni, 2022). The more energy and effort made to obtain health and fitness, the more energy that must be met according to the needs of each body. Physical fitness is very closely related to nutritional status because nutritional status is closely related to calorie intake (Sepriadi, 2017).

#### **3. There is a significant direct influence on the economic level on the physical fitness of students of SMA N 7 Kerinci**

Based on research conducted related to the influence between economic level and physical fitness of SMA N 7 Kerinci students, significant results were obtained by 21.25%, and the rest were influenced by other factors not explained in this study. This shows that the economic level is directly / significantly influenced by the economic status or economic level of the student's parents. Food and nutrition are factors that affect a person's physical fitness. Among people who have a medium or low economic level, it is difficult to meet the needs of balanced nutrition. By consuming sober food, sometimes it is not in accordance with the energy and energy expended. This affects students in maximizing their growth and physical development.

#### **4. There is a significant indirect influence of Study Habits on Physical Fitness through the Economic Level at SMA N 7 Kerinci**

Based on research conducted regarding the indirect influence between study habits and physical fitness through the economic level of SMA N 7 Kerinci students, it was found that  $H_a$  was rejected. That is, there is no indirect influence between study habits on physical fitness through the economic level. It is not uncommon to find outstanding students from families with medium or even low economic levels, have high enthusiasm for learning and good grades (Simatupang, 2019). Learning habits do not always have to be related to balanced nutritional needs. Although actually, nutritional intake that is fulfilled will greatly help brain performance in learning and physical activity (Mahardika et al., 2022). The more fulfilled a person's nutrition, the body will also be able to work more optimally.

#### **5. There is a significant indirect influence of Nutritional Status on Physical Fitness through the Economic Level of SMA N 7 Kerinci students**

Based on research conducted regarding the indirect influence between study habits and physical fitness through the economic level of SMA N 7 Kerinci students, it was found that  $H_a$  was rejected. There is no indirect influence between nutritional status and physical fitness through economic levels. This is in line with the previous hypothesis that there is a direct influence between nutritional status and economic level on a person's physical fitness. Balanced nutrition requires considerable costs (Maflahah, 2019). Families of students who have low economies are unable to meet balanced nutrition every day (Haholongan et al., 2021). But on the contrary, a person's ability to improve their nutritional status through economic ability will directly affect the physical fitness of students (Prabowo et al., 2022). The nutritional adequacy factor is an important point in improving one's physical fitness.



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### 6. There is a significant influence of study habits, nutritional status and economic level on the physical fitness of students of SMA N 7 Kerinci

Based on the data obtained in this study, it shows that  $H_0$  is accepted. This means that it is proven that there is an influence on study habits, nutritional status and economic level together with physical fitness. The students' good physical fitness, is also obtained from good physical education learning in school. Good physical fitness cannot be obtained instantly, but requires consistency and high enthusiasm for learning/training. Nutrition is one of the important factors that determine the level of health and compatibility between physical development and mental development. Normal nutritional state levels are reached when optimal nutritional needs are met (Henjilito, 2017). The better the productivity of his work. If the nutritional status of workers is less or poor, it will directly affect their work productivity, and can result in decreased work endurance.

Dwi Jayanti & Elsa Novananda, (2019) Adolescent nutritional adequacy can regulate the body's metabolism, maintain, and support the body's mechanism system. Appropriate nutritional intake becomes energy to carry out various physical activities so that it can be used to form, improve, and maintain physical fitness. According to (Putro & Winarno, 2022).

#### IV. CONCLUSION

Based on this study, several things can be concluded as follows: 1. There is a direct influence of study habits on physical fitness, 9.98%. 2. There is a direct influence of nutritional status on physical fitness, 9.93 % 3. There is a direct influence of the economic level on physical fitness, 21.25%. 4. There is no indirect influence of study habits on physical fitness through the economic level. 5. There is no indirect influence of nutritional status on physical fitness through the economic level. 6. There is an influence of study habits, nutritional status and economic level, together with physical fitness.

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## Adopting Green Building Concept to Mitigate the Effects of Climate Change on Residential Buildings in Ondo State, Nigeria



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**ABSTRACT:** This study examined the causes and effects of climate change on buildings with a view to adopting the green Building Concept being a response strategy to mitigate the effects of climate change on buildings. Extensive review of literature and mixed method/approach were adopted to obtain data for the study. Questionnaire was used to elicit data for the study. 300 was the sample size for the study. Data analysis was done using statistical tools such as percentiles, mean score, Cochran return sample size formulae and the Analysis OF Variance (ANOVA) used for the tests of hypotheses. The findings of the study revealed that there is significant effects of climate change on buildings in the study area and that Green building concept is beneficial in mitigating the effects of climate change on buildings. The benefits derivable from adopting the green building concept in mitigating the effects of climate change on buildings and the dwellers were identified. These benefits include social, cultural, Energy conservation and improved Indoor air for comfortable living. The study therefore recommends continuous enlightenment of the public on the need to embrace green practices, while government should create a Green Building Assessment Unit in the Urban and Planning Department of Ministries of Works and Housing to promote, and monitor the implementation and enforcement of green practices in Ondo State (the study area) and should also grant incentives to home owners in form of rebates on tenement payments to encourage embracing green practices among others.

**KEYWORDS:** Green building, Climate change, Mitigating, Residential building.

### INTRODUCTION

The effects of climate change such as flooding, erosion, acid rain, excessive heat are visible on buildings in Ondo State. Virtually all the towns and cities have various degrees of devastation from flooding, erosion, windstorm, acid rain and bush fire. Fading or corrosive roofs, exposed foundation, damaged or brown roofs, structural failure, stained walls, and dampness. Left- over rubbles of burnt or collapsed buildings are common physical features on buildings in the study area. The study area is one of the states that has the coastal, forest and the Sahel regions making it vulnerable to negative effects of climate change in different forms. The coastal areas are prone to excessive flooding due to rise in sea level and heavy rainfall, the forest area has damages from windstorm and falling trees, dampness due to longer raining season while the Sahel has damages from strong windstorm, surface erosion and poor and uncomfortable interiors due to excessive heat. The vulnerability of these areas to the negative effects of climate change is high, hence a serious source of worry. Despite these precarious conditions of buildings in the study area and its attendant effects on the health of dwellers and the environment, very little research activities and data are available on the adoption of a sustainable concept such as the green building concept to mitigate the effects of climate change on buildings in the study area. This situation supports the views of Onyekuru and Marchant (2011), that the African built environment is bereft and rarely incorporate ingredients of green buildings that would enhance sustainability and resilient buildings to tackle climate change effects. It is therefore apt to suggest that research relating to the adoption of green building concept to mitigate the effects of climate change on buildings in Nigeria and the study area in particular is lacking.

Though Nduka` and Ogunsanmi (2014), also acknowledged some studies by Ameh, Isijiola & Achi (2007); Udechukwu and Johnson (2008), Nwoko and Onukwube (2011); Otegbulu and Waniko (2014), which focused on sustainability of public buildings, analysis of the effects of green design on environmental stability, including its implication and occupiers preference with respects to building components and their appreciation of green elements, the works only revealed that Nigerians are not green conscious in building design and Environmental Management.

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This was confirmed in Otegbulu (2011) and Waniko (2014), which affirmed that some buildings in Nigeria embody one of the various verifiable characteristics of green design but buildings with holistic approach are yet to be seen because professionals within the built environment are just aware of green building concept and its benefits, but little or poor implementation in building development process is visible. The National Building Code (2006), published to improve planning of the cities, curb incessant building collapse, fire infernos reduce quackery, use of substandard materials for construction and ensure maintenance of structures had little on green building concept incorporation from design to operation stage. This omission of this important aspect of sustainable building concept, is a huge gap at this auspicious period of climate change threat to the built environment. This research work aims at establishing the factors contributing to the causes of climate change, identify the effects of climate change on buildings with a view to adopting the green building concept as a tool to mitigate these effects. To achieve this, aim the following objectives would act as guide:

To establish the factors causing climate change in the study area

To identify the effects of climate change on buildings in the study area

To identify the factors militating against the adoption of green building concept to mitigate the effects of climate change on buildings.

To determine the benefits of adopting green building conception mitigate effects of climate change on buildings

### **LITERATURE REVIEW**

The negative effects of climate change on the built environment has become a source of worry to the global community. The World Bank report (2005), affirmed that 2.4 billion people, live in high risk disaster areas. According to the United Nation on Environmental Programme (UNEP) (2000), climate change is an extreme reaction of weather phenomenon which creates negative impact on agricultural resources, human health, vegetation, soil, depletion of ozone layer, and doubling the carbon dioxide (CO<sub>2</sub>) in the atmosphere.

Odjugo (2011) describe climate change as the end product of a changing when the level of climatic deviation from normal is very significant over a long period of time and such deviation has clear and permanent impact on the ecosystem.

#### **Factors Responsible for the Causes of Climate Change in the Study Area.**

Climate change is caused by bio-geographical (natural) and anthropogenic (man-made) factors. The bio-geographical factors are due to orbit variation, volcanism, ocean variability, solar radiation and plate tectonics while anthropogenic factors are attributed to human activities such as construction, transportation, farming, burning of fossil Fuel, urbanization and industrialization (Ede, Kolapo & Opeyemi 2013).

Beside disasters associated with major natural hazards such as flood, cyclones, earthquake, Tsunami, volcanoes, landslides, and drought, the most recent increase in atmospheric concentration of Green House Gases (GHGs) and its harmful impact on human health is a global threat.

Green House Gases (GHGs) such as Water vapour, Nitrous oxide (N<sub>2</sub>O), Methane (CH<sub>4</sub>), Carbon dioxide (CO<sub>2</sub>) referred to as "Forcing Climate Change gases" are gases that block heat from escaping, long lived gases that remain semi-permanent in the atmosphere and do not respond physically and chemically to changes in temperature. (NASA 2019)

Human activities in Urban and Industrialized nations have been identified to account for 60% of the global industrial carbon dioxide emission. Odjugo (2010), affirmed that developed nations emit 75% of the GHGs into the atmosphere with dire consequences on the environment.

The negative environmental impact of human activities carried out to meet daily needs such as construction activities, transportation, burning of fossil fuel etc. are major factors exerting pressure on the environment. Similarly construction activities account for significant volume of GHGs emitted to the atmosphere globally. These views supported the observation of Schmidt (2000), that building activities are responsible for approximately one-third of ecological disasters.

Climate change and buildings therefore has an intertwined relationship as buildings may contribute to climate change while they are also vulnerable to climate change. According to UN Habitat report (2009), buildings are vulnerable to climate change because all the indicators of climate change such as flood, extreme wind, acid rain, bush fire, extreme temperature, tropical cyclone, extreme rainfall, sea level rise, Ultra-Violet (UV) radiation changes, Solar radiation, wind direction changes and other adverse effects have huge consequences on the effective functionality of buildings.

Human beings cannot but build, how to ensure that the design concepts and construction activities do not compromise the ability of future generation in achieving human needs should be of great concern. According to Kolawole and Angboji (2005), the friendliest way to handle the environment is not to build, but without construction, life can be miserable and threatening, for

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shelter is needed among other things for protection against inclement weather and for healthy living. They therefore opined that what is needed is dynamic equilibrium, that is, a production process that is friendly to the ecosystem, yet competitive and possess no form of threat environmentally.

### **Effects of Climate Change on Buildings in Ondo State Nigeria**

The effects of Climate change has become visible globally and in Nigeria. There are number of impacts of Climate Change on human health in Nigeria. In the opinion of Odjugo (2011), Nigeria temperature had been on the increase. The increase became so rapid since the early 1970s. He further observed that the mean temperature between 1971 and 2008 was 27.83 with a mean increase of 1.78°C which is higher than the global increase of 0.74°C since instrumental measurement started in 1960.

It has also been established that rainfall pattern in Nigeria has shown a declining trend. The increasing temperature and the decreasing rainfall are basic feature of global warming. Coastal erosion, and drought, and short-term weather-related issues such as high winds and flooding which influences the choice of site construction; building technique and material for construction. The potential risk of severe weather and climate condition also influence planning and project completion timeline in the study area Buildings are vulnerable to climate change. Climate change brings about increase risk of building collapse, declining health and significant loss of value as a result more storms, water encroachment, deteriorating indoor climate and reduced building life-time. (Ministry of Environment and Foods of Denmark/ Environmental Protection Agency 2012). In the same vein increase in ground water level could lead to increased risk of erosion. Storm will constitute a safety risk, more and longer-lasting heat waves could have health related consequences especially on the elderly and the weak.

According to Brain (2012), the building envelope is particularly vulnerable to changes in climatic conditions, for instance, 25% increase in peak wind gusts could lead to a significant increase in damage caused by wind borne debris and wind loading in excess of the design loads. Cities and towns such as Akure, Okitipupa, Owo Ikare in the study area, with high density of property, people and services are more vulnerable when extreme weather or natural disasters strike.

The study further identified some environmentally induced factors which may have direct impacts on buildings to include:

- (i) A higher solar intensity resulting from exterior and interstitial surface temperature and for the exposed components, higher levels of UV and resultant damage
- (ii) A shift in the type, form, pattern and intensity of precipitations. This can increase the number of times components may experience wetting and drying and increased frost penetration.
- (iii) Shifts in the peak and frequency in high humidity levels
- (iv) Changes in seasonal range temperature combined with increased frequency and longevity of heat waves or cold snaps
- (v) Increased frequency and intensity of wind and flooding events

These changes in temperature, moisture levels and precipitation can lead to dimensional changes of material which can in turn lead to cracking, fissuring in polymer-based materials such as vinyl cladding, window frames, sealants and gaskets.

Other climate change factors including increase in dust, particulate matter, smoke and acid rain can also have significant implication on buildings. Beside the effects of Ultra-Violet (UV) radiation, Mechanical agents such as wind driven dust or rain can contribute to premature/ accelerated deterioration. Biological agents carried by the atmosphere can deposit fungi or moulds on surfaces while chemical agents transported by atmospheric moisture (e.g rain or water vapour) or direct deposition can lead to corrosion in metals, or deterioration of concrete, stone, fenestration components as well as roofing and cladding components.

In Nigeria and the study area of Ondo State, , inhabitants are already heavily hit by flooding, ill health, displacement, , windstorm, water logging, swamp, deforestation, pollution, and increase in heat causing excessive dryness. All these have both direct and indirect impacts on buildings in the study area.

### **The Concept of Green Building**

Green or going Green has been defined differently depending on the aspect. According to Zugufun, (2008), Green can be used to reference how products are made or what make up a product. Green has also been interchangeable with sustainability in that by reducing the demand on natural resources, Society will be assured a place in the global future. The United States Environmental Protection Agency (USEPA) defined green building as the practice of creating structures and using processes that are environmentally responsible and resource- efficient throughout a building's life cycle from siting to design, construction, operation, maintenance, renovation and deconstruction (Howe, 2011).

The United States Green Building Council (USGBC) also described Green Building as a high performance building that is energy and water efficient, has good air quality, uses environmentally sustainable materials and also uses the building site in a sustainable manner.

## **Adopting Green Building Concept to Mitigate the Effects of Climate Change on Residential Buildings in Ondo State, Nigeria**

The World Building Council (2019), described green building as that which has its design, construction and operations reduce or eliminate negative impacts and can create positive impacts on our climate and natural environment. Green buildings preserve precious natural resources and improve quality of life. . For a building to be classified green, it must have the following features: Efficient use of energy, water and other resources, Use of renewable energy such as solar energy, pollution and waste reduction measures and enabling of re-use and recycling, good indoor environmental air quality, use of materials that are non-toxic, ethical and sustainable, consideration of the quality of life of occupants in design and operations and a design that enables adaptation to an enhancing environment.

The total idea of green building concept is therefore to fulfill human and societal wellbeing. It is one of the models created for global sustainability in the events of uncontrolled and continuous environmental degradation and unavoidable climate change impact in every facet of our society (Daramola, Adebayo and Afolabi, 2014). Abualrejal (2017), emphasized that Green building serves as the basis of sustainable construction development as it is a building that meets the prerequisite building performance standards, while diminishing the disruption to and enhancing the ecosystems in the native, provincial and universal circumstances. Additionally, green building also help to enhance resident's health through the design of a healthy interior environment. Green concept focuses on the life cycle of buildings hence it is expected to have effects on building development process which entails the stages involved from the client's decision to build, through design, construction, completion and maintenance of the structure. The ability to make a building sustainable and resilient means that the buildings must be able to mitigate and adapt to climate change. The green building concepts captures these essence as it is also cost effective and achievable. For a building to become "Green," consideration must be given at each stage of the development process. The client must have the understanding of green building concept to be able to give his briefs, the designers must inculcate the green building concept during design while the constructor must ensure the construction method and the materials used are green and sustainable.

### **Benefits of Adopting Green Building Concept to Mitigate the Effects of Climate Change on Buildings**

The total idea of green building concept is to fulfill human and societal wellbeing. It is one of the models created for global sustainability in the events of uncontrolled and continuous environmental degradation and unavoidable climate change impact in every facet of our society (Daramola, et al 2014).

The USGBC's purpose of creating the Leadership in Energy and Environmental Design (LEED) is to create a healthy work environment, build energy efficient buildings, and pursue sustainability and renewable energy (Alex Shim 2016). An average LEED certified building uses 32% less electricity and save 350metric tons of carbon dioxide emission annually.

Green concept focuses on the life cycle of buildings hence it is expected to have effects on building development process which entails the stages involved from the client's decision to build, through design, construction, completion and maintenance of the structure. According to Brahmanand (2012), green building design is rooted in an understanding of natural system and the behaviour of eco-systems which facilitates and preserves the relationship between nature and buildings. It encompasses the whole process of planning, design, construction, use and maintenance spanning the whole life cycle of the building.

Turcotte, Villareal & Bermingham (2006) and Billie 2012), in their separate studies identified and grouped the potential benefits of green building concepts into environmental, financial, social and cultural benefits.

### **Environmental Benefits of Green Building**

The ability to make a building sustainable and resilient means that the buildings must be able to mitigate and adapt to climate change. Buildings consume a lot of natural resources which has a wide range of environmental impacts. These environmental concerns are driving forces behind the sustainable and green construction movement. The US Environmental. Protection Agency has indicated that buildings use 30% of the materials consumed in the US. This also applies to what is obtainable in Nigeria and the study area in view of the materials used for building construction such as concrete, steel, glass, clay, rock and other energy intensive materials. The process of their extractions and production depletes nonrenewable resources and has environmental effects. Qureshi (2018), examined the LEEDS 'certification for effective reduction in climate change and affirmed that the LEED certified buildings (i.e Green Buildings) play a key role in reducing the negative impacts of the built environment.

The LEEDs process addresses a structure's planning, design, construction, operations end-life as well as considering energy, water, indoor environment quality, materials selection and location. By adopting the green building concept, we can maximize both the economic and environmental performance. Most of the Countries that have embraced and adopted the green building concept have obviously benefitted and agreed it is the way forward in preserving resources and sustaining the environment (Al-Kaabi et al 2009). It is therefore imperative and in order to achieve significant benefits, for the design and construction team to adopt an integrated approach from the earliest stages of a building project.

# **Adopting Green Building Concept to Mitigate the Effects of Climate Change on Residential Buildings in Ondo State, Nigeria**

## **Indoor Environmental Quality (IEQ)**

Indoor Environment Quality (IEQ) is the inside condition of the building. The different aspects of IEQ cover quality of air, daylight soothing acoustic and low usage of lighting and thermal conditions. Green building focuses on each aspect of IEQ that protects human health and improves quality of life.

## **Energy Efficient Construction**

The concept of energy efficient, eco-friendly buildings has been more serving. The approach is becoming more popular in view of recent global warming occasioned by rising energy cost, scarce oil reserves, limited water supply and health concerns among others.

According to the WGBC, the planet seems to have run short of natural resources essential for our survival. Green construction includes the use of renewable energy such as solar, and wind therefore reducing artificial energy or light. The materials are less hazardous and perfectly fits with environmental-friendly standards.

## **Sustainable Materials Resources**

Building construction use significant quantity of natural resources and materials. The building industry consumes 3 billion tons of raw materials annually (Bakens, 2003). In order to achieve sustainable construction and green building, the choice and selection of materials must focus on the goals of minimizing consumption and depletion of material resources, minimizing the life-cycle impact of materials on the environment, and minimize the impacts of materials on indoor environmental quality. To achieve these goals, much strategies can be applied such as the use of salvaged and remanufactured materials, use of recycled content products and materials, use of materials from renewable sources, use of locally manufactured materials, use of durable materials and materials that are reusable, recyclable or biodegradable (Grottfried, 1996).

## **Economics Benefits of Green Building**

Several studies have suggested that green construction can result in significant economic savings by improving employee's productivity, increasing benefits from improvement in health and safety, and providing savings from energy, maintenance and operational costs (Ries 2007).

Dwacket (2018), examined the economic performance of green building in terms of energy Consumption. The investigation showed that green building saved 71.1% of energy compared to industry baseline. It also revealed that for 60 years green building saved 24,751,980 Kwh. In Kats (2003), the benefits of green buildings which includes cost savings from reduced energy, water, waste disposal, lower operations and maintenance, enhanced occupant productivity and health were ex-rayed. Apart from direct cost benefits, green buildings also provide economic benefits to both building owners and the society. Sustainable and green building features can promote better health, comfort, wellbeing and productivity of building occupants, which in turn reduces absenteeism, laziness and increase productivity that can translate into large financial benefits (Brahmanand, 2012). The society therefore tends to gain from lower risks, longer building lifetime, less time and lower costs of projects.

## **Social Benefits of Green Building**

The social benefits of green infrastructures are related to improvement in the quality of life, health and wellbeing. The benefits derived from building green explained by Turcolt et al (2006), include enhanced occupant's comfort and health, heightened aesthetic qualities, minimized strain on local infrastructure which are linked with increased worker's productivity and health benefits It has been established that about 40% of all illness can be traced to the buildings and homes where people live, work, attend school church or sporting events. The sick building syndrome symptoms such as headache, fatigue, dizziness, irritation of skin, eyes nose and difficulty in breathing are drastically reduced in sustainable and green building.

## **Cultural Benefits**

Beside maintaining the local environment in its original form or with little distortion, green technology make use of local materials, renewable energy, water harvesting, waste disposal in manners devoid of emitting GHGs to the environment. Building green minimizes materials impact through appropriate material choices (Nielson et al, 2009). Sammer (2013), agreed that there are benefits accruable from selection of appropriate technologies and choice of materials. Green building tends to sustain the environment, preserve cultural identity, minimize strain on local infrastructure and build fences around the natural environment to combat the impact of climate change.

## **METHODOLOGY**

An extensive review of relevant literature on issues surrounding green building concept and effects of climate change on buildings was first undertaken. The methods of data collection for this research is mixed method approach where quantitative and

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qualitative data were collected via questionnaires to building owners, tenants and professionals in the built environment. The qualitative data were obtained through interviews using structured and open-ended questionnaires. The size of the study population is huge and heterogeneous hence the Cochran's sample size formulae was adopted to calculate the ideal sample size given a desired level of precision, desired confidence level and estimated proportion of the attributes present in the population. From the foregoing, the sample size of the respondents for this study was 384.

The targeted population for this study includes professionals in the built environment, researchers in tertiary institutions and building owners and users within the three senatorial districts of Ondo State. 400 questionnaires were distributed and 300 were returned out of which 150 respondents were professionals in the built environment.

The study population is drawn from six local governments, i.e., two local governments per Senatorial area are adopted as shown in table 3.1.

**Table 1. Selected local governments for study population.**

S/N	Local Government	Senatorial District	Population
1	Akoko North East	Ondo North	175,409
2	Owo	Ondo North	218,886
3	Ondo West	Ondo Central	283,672
4	Akure South	Ondo Central	353,211
5	Okitipupa	Ondo South	233,565
6	Ilaje	Ondo South	209,625
	Total		1,474,368

Source: NBS Census 2006

The six local governments are carefully selected across the three senatorial districts to disaggregate the population to urban, rural and local areas. Okitipupa and Ilaje in the South are located in the riverine areas where ocean surge, incursion and other impacts of climate change are visible, Akure and Ondo West are the most Urban with industrialization in the increase while Owo and Akoko have erosion menace and symptoms of encroachment synonymous with the North.

Stratified Sampling technique was chosen for the research in a bid to have a good representation of each local government that form the population in the data collected and in view of the large and heterogeneous, population of the study area.

Under questionnaire survey, typical variables were identified and listed for respondent to evaluate. Close ended questions were easily asked and quick to answer (Fellow and Liu, 2008).

It requires no writing and their analysis in straight forward Likert-types scale on interval of 1 to 5 was used where 1 represent the least scoring and 5 the highest scoring while Likert type of scale of hypothesis was on interval of 0 to 5 respectively. In-depth interviews were conducted to obtain qualitative data from purposely selected interviewees, Experts and focus groups that had considerate potential skills and attributes of moderating of data rescoring which influenced data collected and also have capacity to proffer solution to open ended questions raised in the course of the interviews on issues relating to mitigating the effects of climate change on buildings in the study area.

The analysis of the collected data was carried out using descriptive and inferential statistical methods as appropriate. Percentiles and ANOVA, that is, Analysis of Variance using software package for social sciences ( BMSPPSS version 23) was used to analyze both Null and Alternative hypotheses at 5% level of significance to determine the means and univariate was employed for the analysis. The correlation table coefficients and the residual statistics was obtained from the output which was used for testing the hypotheses

To evaluate user's acceptance and adaptation of green building practices and establish factors that can contribute to acceptance, benefits of adopting Green Building concept, and factors inhibiting the adoption of green building concept, understanding and perception of users, mean score for each of the significant factors would be calculated and ranked using these formulae:

$$\text{Mean Score} = \frac{X_1W_1+X_2W_2+X_3W_3+\dots+X_nW_n}{N}$$

Where W = Weight of answer choice

X = Response count for answer choice

N= Total number of respondents



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From the computation, most significant constraint factor in a sub-set was one with the highest mean score value. The factor having the average or higher value is considered significant as shown in equation 1 while the insignificant factors are identified using equation 2.

Significant Constraint Factor =  $M_s > 2.5$ ----- 1

Non-significant Constraint Factor =  $M_s < 2.5$ ----- 2

Where  $1 < M_s < 5$  on 5-point Likert rating.

Based on the means score values of the constraints in a given set, the variables were ranked or rated.

### Test of Hypotheses

The Hypothesis of this research would be put to null ( $H_0$ ) and alternative ( $H_1$ ) form respectively. Anova analysis would be employed to test the postulated hypotheses. The level of significance at which any of the Hypotheses could be rejected or accepted was fixed at 0.05 (5% significance level).

### Validity and Reliability of the Instrument

The instrument especially the questionnaires were subjected to content validity test by distributing the questionnaires to key professionals in the field of study to validate the questions. The questionnaires were made sufficiently specific and designed to avoid ambiguity so as to maintain consistency.

## DATA ANALYSIS AND FINDINGS

### Data Collection

In order to have a balanced opinion and make researchable findings on the research topic, Adoption of Green Building Concept for mitigating the effects of climate change on buildings in Ondo State, the researcher conducted oral interviews and administered structure questionnaires to selected group including home owners, and professionals in the built environment such as Architect. Quantity Surveyors Builders Town and Regional Planners, Estate Managers and Land Surveyors that are considered relevant to the study. This is to reconcile the literature review and desk researches with what is actually obtainable in practice.

### Administration of Questionnaires

Four hundred (400) copies of questionnaires were distributed to the three senatorial districts of Ondo State but three hundred (300) copies were responded to and returned. These were found suitable and used for the analysis.

**Table 2. Questionnaire Administration to Respondents and their Responses**

Respondents	Distribution	Responses	% of Responses
Owners Occupier (non-professional)	100	80	80%
Tenants (non-professional)	100	70	70%
Professionals in Built Environment	200	150	75%
Total	400	300	75%

From Table 2, 75% of the Questionnaires sent out were returned. The total percentage of responses were used for the analysis. This indicates that the information reflected in the table covered the relevant shades of opinions and should therefore be regarded as representing a true picture of what is holding generally as far as this research work is concerned.

**Table 3. Respondents' Academic Qualifications**

Respondents Qualification	Distribution	Responses	% of Responses
ND/NCE		85	28%
BSC/HND		90	30%
MSc/MBA etc		85	28%
PhD		40	14%
Total		300	100%

Source: Field Survey (2020)

## Adopting Green Building Concept to Mitigate the Effects of Climate Change on Residential Buildings in Ondo State, Nigeria

Table 3 shows that the highest respondents have HND/BSc, 28% have ND/NCE. The same 28% have MSc/MBA while 14% of respondents have PhD. This shows that the respondents are educated and adequate to give informed opinion on the subject matter.

**Table 4. Respondents' Professions (professionals in the built environment)**

Respondents Profession	Responses	% of Responses
Architecture	20	13
Building	30	20
Quantity Surveying	30	20
Engineering	25	17
Surveying	15	10
Estate Management	30	20
Others	-	-
Total	150	100

Source: Field survey 2020

Table 4 shows the spread of professionals in the built environment that responded, 20% are Builders, Estate Valuers and Quantity Surveyors, 17% are Engineers, 13% Architects and 10% are Surveyors. This spread is adequate to give diverse and sound opinions on the subject matter.

**Table 5. Experience of Professional Respondents in Construction**

Range of Years	Mid-Point (X)	Frequency (f)	FX
0-5	2.5	20	50
6-10	8	25	200
11-15	13	35	455
16-20	18	50	900
Above 30	30	20	600
Total		150	2205

Source: Field Survey 2020.

$$\begin{aligned} \text{Mean age} &= \frac{\sum fx}{\sum f} = \frac{2205}{150} = 14 \text{ years} \\ \text{of professional respondents} & \end{aligned}$$

Table 5 shows that the average years of experience of professional respondents is 14 years which means, they are experienced enough to give informed information and opinion on the subject matter.

**Table 6. Age of Buildings**

Range of Years	Mid-Point (X)	Frequency (f)	FX
0-5	2.5	40	100
6-10	8.0	40	320
11-15	13	40	528
16-20	18	45	810
21-25	23	40	920
26-30	28	50	1400
Above 30	30	45	1350
Total		300	5428

Source: Field Survey 2020

$$\begin{aligned} \text{Average age of Building} &= \frac{\sum fx}{\sum f} = \frac{5428}{300} = 18 \text{ years} \end{aligned}$$

## Adopting Green Building Concept to Mitigate the Effects of Climate Change on Residential Buildings in Ondo State, Nigeria

Table 6 shows the age distribution of the buildings which gives the average age to be 18 years. This shows that the buildings have existed for reasonable number of years and would have experienced different impacts of the climate to form the basis for this research work.

**Table 7. Types of Buildings**

Type of Building	Responses	% of Responses
Residential	220	73.3%
School	-	-
Commercial	50	17%
Any Others	30	10%
Total	300	100%

Table 7 shows that 73.3% of the respondents stay in residential building while 17% are in commercial and the remaining are others such as hotel and guest houses. The large percentage of residential is appropriate as the research work focuses on residential houses and the rating system developed is on residential homes.

**Table 8. Location of Respondents in the State**

Respondents' Location	No. of Responses	% of Responses
Coastal Area	70	24
Central Area	130	43
Northern Area	100	33
Total	300	100%

Source: Researchers fieldwork 2020

Table 8 shows that 24% of the respondents are in the coastal area, 43% in the Central while 33% are in the Northern area. The distribution gives a wide coverage of the types of climate experienced in the three geological zones of the state, hence effects of climate change in diverse dimensions are recorded and are suitable for the research work.

### Contributing Factors to Climate Change in the Study Area

**Table 9. Contributing Factors to Climate change.**

	Contributing factors to climate change	Scores						Mean Score	% MS	Ranking
		4	3	2	1					
1	Bush burning	100	100	150	50	3.4	1 <sup>st</sup>			
2	Solar Radiation	100	100	120	30	3.23	2 <sup>nd</sup>			
3	Ocean Variability	120	130	50	-	3.23	2 <sup>nd</sup>			
4	Pollution from Oil/Bitumen exploration	150	50	50	50	3.0	3 <sup>rd</sup>			
6	Transportation	150	50	30	20	2.8	4 <sup>th</sup>			
7	Urbanization	150	25	50	25	2.67	5 <sup>th</sup>			
8	Orbit Variation	80	70	50	100	2.43	6 <sup>th</sup>			

From table 9, respondents rated the suggested factors contributing to climate change occurrences in the study area using the following rating/scores: S.A = Strongly Agree (5), A= Agree (4), N.S = Not Sure (3), D = Disagree (1). This is to determine the major factors contributing to the causes of climate change and the respondents level of agreement with the identified variables.

From the analysis in table 9 and going by the rules of ranking i.e Ms.>2.5 are significant it can then be deduced that bush burning, solar radiation, urbanization pollution from oil/bitumen exploration, transportation, solar radiation, ocean variability and orbit variation are all significant factors causing climate change in the study area.

While bush burning ranked first of the factors contributing to climate change causes, followed by Solar radiation, Ocean variability, pollution from oil exploration, transportation, urbanization and orbit variation in that order.

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**Table 10. Effects of Climate Change on Buildings**

Effects of Climate Change on Buildings	Highly significant 4	Very significant 3	Significant 2	Not significant 1	Mean Score	Remarks
Bleaching of roof	200	50	40	10	3.5	1 <sup>st</sup>
Dampness on walls	100	80	50	70	3.4	2 <sup>nd</sup>
Poor/deteriorating indoor	180	50	50	20	3.3	3 <sup>rd</sup>
Roof damage/Blown off	150	50	50	50	3.0	4 <sup>th</sup>
Exposed foundation/erosion	150	55	45	10	2.9	5 <sup>th</sup>
Energy/water shortage	50	75	50	125	2.2	6 <sup>th</sup>

The identified effects of climate change on buildings in the study area were ranked to know the level of significance of the effects in addressing objective No. 3 of the research work. Table 6.10 shows clearly that roof bleaching is the most significant effect followed by damaged roof and dampness on walls resulting in stained walls, walls covered with spirogyra and some vegetation. Deteriorating indoor too is significant ranking third. This is also confirmed from interviews conducted via telephone conversations and SMS where respondents emphasized the various causes of climate change in addressing objective number three of this research work. The literature reviewed the works of Udeyi (2010), Ojudgo (2011), Adeyemi K and Opeyemi J (2013) to establish the causes of climate change.

Ojudgo (2011) affirmed climate change is caused by natural (Bio geographical) and anthropogenic (Man-made) factors. These factors were broken down to Bio geographical; i.e Orbit variation, Volcanism, Ocean Variability Solar Radiation, Haze and Anthropogenic: Transportation Bush Burning, Burning of fossil fuel, Industrialization, and Urbanization. These factors were ranked by respondents in table 4.12 and from the opinion of respondent's bush burning ranked first with a mean score of 3.5 followed by pollution from oil exploration. Shortage of energy and water though noticed as occupants experienced dry up of wells and shortage of water during the dry season while wind storm and excessive rain disrupt energy supply during the raining season.

Another significant effect on buildings is the flooding and erosion due to excessive rainfall. The erosion erodes the soil around foundation thereby exposing and weakening it which threatens the stability of the building and sometimes lead to collapse of the building.

## Hypothesis 1

Ho There is no significant effects of climate change on buildings in the study area.

**Decision rule:** Reject the Null hypothesis if  $F_c > F_t$

From the statistical table 10, the effects of climate change on buildings were identified and roof bleaching ranked first among the effects experienced on buildings in the study area, however this was further subjected to test whether these effects are significant. The analysis using SPSS version 23 brought out the ANOVA table in table 6.12

**Table 11. ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13969.843	3	4656.614	8.364	.109 <sup>b</sup>
	Residual	1113.490	2	556.745		
	Total	15083.333	5			

a. Dependent Variable: Highly Significant

b. Predictors: (Constant), Not Significant, Significant, Very Significant

From the ANOVA table.11,  $F_c = 8.364$  while  $F_t$  at .10 degree of significance and at 3, 2 degree of freedom = 9.34.

## Decision

Since  $F_t$  (9.34) is greater than  $F_c$  (8.364), the Null hypothesis which states that there is no significant effects of climate change on buildings in the study area is rejected while the alternative hypothesis which states that there is significant effects of climate change on buildings in the study area is accepted.

It can then be concluded that there is significant effects of climate change on buildings in the study area.

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This supports the opinions expressed by respondents in table .11 roof bleaching, damage/blown off roofs were ranked as first and second effects of climate change on buildings in the study area.

**Table 12. Benefits Of Adopting Green Building Concept**

S/No.	Benefits of Green Building Concept	Highly beneficial 4	Very beneficial 3	Beneficial 2	Not beneficial 1	Mean Score	Ranking
1.	Economic use of Energy/Water resources	150	100	30	20	3.3	2 <sup>nd</sup>
2.	Reduction in Green Gasses Emission	100	100	50	50	2.8	4 <sup>th</sup>
3.	Control of Flooding and reduced danger to foundation	50	200	35	15	1.6	5 <sup>th</sup>
4.	Reduction in Acid rain that carried roof	150	100	50	-	3.3	2 <sup>nd</sup>
5.	Improved indoor air for comfortable living	200	75	25	-	3.6	1 <sup>st</sup>

$$\text{Mean Score} = \frac{\sum FX}{N}$$

The objective No. 4 of the study is to determine the benefits of adopting green building Concept to mitigate the effects of climate change on buildings. The literature review identified the benefits of adopting Green Building Concept, Turcotte, Villarul & Bermigham (2012) and Bilic (2012), identified and grouped the benefits of green building concepts into environmental, financial, social and cultural benefits.

These are further broken into Economic use of Energy and Water Resources, Reduction in green gasses, erosion control, flooding, and reduction in acid rain that corrodes roofs and improved indoor air for comfortable living. How beneficial the adoption of the green building concept in mitigating the effects of climate change on buildings in the study area was evaluated as shown in hypothesis number two.

From table 12, adoption of Green Building Concept is highly beneficial in ensuring improved indoor air condition with a mean score of 3.6 in the rating. This is followed by economic use of energy/water and reduction in effects of acid rain on roof. This is followed by reduction in green gas emission and control of erosion rated as beneficial and not beneficial respectively. Further clarification on how these factors is beneficial were made during oral interviews and opinions to support these ratings included the use of Green certified materials for electrical/plumbing installation and roofing materials which would have resistance to acid rain and the reduction of green gas emitting activities in the building while natural lighting and ventilation are improved by passive architecture etc.

The Objective no4 of this work is to examine the benefits of adopting the green building Concept in mitigating the effects of climate change on buildings in the study area. Based on the statistics in table 12 which was further analyzed using SPSS 23 the anova table 13 is used for testing hypothesis No2.

Ho Green Building concept is not beneficial and adoptable for mitigating the effects of climate change ` buildings in the study area

H<sub>1</sub> Green Building concept is beneficial and adoptable for mitigating the effects of climate change on buildings in the study area.

**Decision Rule:** Reject Null hypothesis if  $F_c > F_t$

From the statistic in table .13 and using SPSS 23 the Anova table6.14 is obtained for this analysis.

**Table 13. ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6998.571	3	2332.857	1633.000	.018 <sup>b</sup>
	Residual	1.429	1	1.429		
	Total	7000.000	4			

a. Dependent Variable: Highly Beneficial

b. Predictors: (Constant), Not Beneficial, Very Beneficial, Moderately Beneficial

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From the ANOVA table 13,  $F_c=1633$  while  $F_t$  at .0.1 degree of significance and at 3,1 degree of freedom =215.7.

### Decision

Since  $F_c$  is greater than  $F_t$ , the Null hypothesis which states that Green Building is not beneficial and adoptable for mitigating the effects of change on buildings in the study area is rejected while the alternative hypothesis which states that Green Building concept is beneficial and adoptable for mitigating the effects of climate change on buildings in the study area is accepted.

It can therefore be concluded that green building concept is beneficial for mitigating the effects of climate change in the study area.

**Table 14. Factors Militating Against the Adoption of Green Building Concept**

S/N	Factors Militating against adopting Green Building Concept	SA 5	A 4	NS 3	D 2	SD 1	Mean score	Ranking
1	Economic/financial factor	150	50	30	50	20	3.5	1 <sup>st</sup>
2	Sustainable site Energy	70	100	50	30	50	3.4	2 <sup>nd</sup>
3	Market forces	100	50	40	60	50	3.3	3 <sup>rd</sup>
4	Behavioural/Organization Constraints	100	50	50	50	50	3.3	4 <sup>th</sup>
5	Lack of Awareness	60	50	110	50	30	3.2	5 <sup>th</sup>
6	Effect of Water	50	100	50	50	20	3.2	6 <sup>th</sup>
7	Cultural Barriers	50	100	20	50	80	3.0	7 <sup>th</sup>

**Source:** Researcher's fieldwork 2020.

Table 14 shows the analysis of the factors militating against the adoption of green building concept in the study area, Economic and Financial factor ranked 1<sup>st</sup> with a mean score of 3.4 while sustainable energy, market forces ranked 2<sup>nd</sup> with a mean score of 3.4. Market forces, Organization constraints with a mean score of 3.3 ranked 3<sup>rd</sup> while Lack of awareness, Effect of water and cultural Barriers ranked 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> respectively.

From this analysis, it can be justified that the major factors affecting the adoption of the concept in the study area are Economic/Financial, Sustainable energy, market forces and Cultural barriers which are in conformity with views of research works reviewed in the literature.

### DISCUSSION OF FINDINGS

Climate change is a global phenomenon and its effects on the eco system and buildings cannot be over emphasized. This research work has identified, and examined the factors contributing to the causes of climate change, in the study area Seven factors which includes Orbit variation, Ocean variability, solar radiation urbanization Bush burning, Pollution from oil exploration and transportation were identified. Bush burning ranked first, while solar radiation ocean variability and, pollution from oil/bitumen exploration ranked 2<sup>nd</sup> and 3<sup>rd</sup> respectively. This analysis confirms the actual situation in the study area where pronounced heat, sea incursion and air pollution are common in the study area. Transportation, urbanization and orbit variation in 4<sup>th</sup> 5<sup>th</sup> and 6<sup>th</sup> positions These factors were rated low as factors contributing to climate change in the study area.

The study also reveals there is significant effects of climate change on buildings in the study area. The effects ranges from bleaching roof, damaged roof, and dampness on walls exposed foundation Energy /water shortage to poor and deteriorating indoors. The analysis of the effects of climate change on buildings show that roof bleaching is the most prevalent ranking first, followed by roof damage and dampness which are also very common due to strong winds and excessive rainfall in the study area. Having extensively reviewed the concept of green building, it is agreed that the concept is an eco- friendly, sustainable concept which can be a veritable tool to mitigate the effects of climate change on buildings in the study area. Despite the benefits derivable from the adoption of green building concept as a tool to mitigate the effects of climate change on buildings the study identified the factors militating against the use of the concept in the study area. The analysis in table 14 shows the ranking of the identified factors militating against the adoption of green building concept in Ondo State. Financial factor ranked first with a mean score of 3.4 while cultural barriers and effect of water ranked 2<sup>nd</sup> with a mean score of 3.4.

From this analysis it can be deduced that the major factor affecting the adoption of green building concept is financial consideration. This tallies with the views expressed by most researchers that green concept require high initial cost.

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## CONCLUSION

Based on the extensive review of relevant literature, coupled with the analysis and discussion of data gathered, It can be concluded that climate change is a reality and it is affecting buildings in Ondo state. This must stop otherwise the effects would be difficult to cope with. The best option left to arrest this ugly situation is to adopt a pragmatic and sustainable tool such as the Green Building Concept considering its benefits and recorded as the friendliest mitigating model available now.

## RECOMMENDATIONS

Based on the research analysis and the conclusion already drawn, the following recommendations are proposed:

- 1 Continuous enlightenment of the public of the danger of climate change and the benefits of embracing Green and sustainable practices.
- 2 Government to create enabling environment and enact legislation or policies on green practices.
- 3 Governments should create a Green Building Assessment Unit in the Urban and Regional Planning Ministry who should be trained as Green Building Assessors/inspectors to monitor the implementation of green practices during pre, and post construction stages.
- 4 Government should put in place incentives in form of rebate and provision of some basic infrastructure for effective compliance with the green practice rules
- 5 Professionals in the built environment should take up training courses in green building assessment and certification thereby creating job opportunities in the building industry.
- 6 Government should encourage the use of local and renewable materials and limit importation to non-available construction materials for construction projects

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## Islamic Religious Education in Indonesia: Understanding the Urgency and Paradigm Shift from a Societal Perspective



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**ABSTRACT:** This study aims to understand the urgency and paradigm shift in Islamic Religious Education in Indonesia from a societal perspective, focusing on the significance of Islamic Religious Education in Indonesia, the contributions of Islamic Education to society, and the public's view on the urgency of Islamic Religious Education (PAI) in formal education. The introduction provides an overview of the importance of Islamic Religious Education in preserving religious identity and fostering social harmony in Indonesia. The research methodology involves qualitative analysis of secondary data analysis of educational policy documents, literature studies, and interviews with relevant stakeholders. The findings reveal that Islamic Religious Education plays a significant role in shaping individual character, reinforcing religious values, and promoting active community participation in development. The community recognizes the urgency of Islamic Religious Education in formal education and expects a paradigm shift that integrates religious values with existing sociocultural dynamics. The study concludes the need for inclusive Islamic Religious Education based on justice and community empowerment as a foundation to address future challenges.

**KEYWORDS:** Islamic Religious Education, Indonesia, societal perspective, urgency, paradigm shift, contribution

### I. INTRODUCTION

Islamic religious education plays a significant role in Indonesian society. In this context, the importance of Islamic education cannot be overlooked [1]. Islamic religious education in Indonesia aims to acquire theoretical understanding and shape character, morals, and positive attitudes in daily life. Therefore, understanding the urgency and paradigm shift of Islamic religious education from the perspective of society becomes crucial to consider [2], [3]. However, a research gap exists in understanding the urgency and paradigm shift of Islamic religious education in Indonesia. Many previous studies have been conducted to analyze this issue in a general sense, but there is still a lack of understanding from the specific perspective of the community. One specific research focus is the location of Sokanegara Subdistrict, East Purwokerto, Banyumas.

In the theoretical framework, Islamic religious education has received attention from various theories in education and sociology [4]–[6]. Experts have proposed different approaches to the paradigm of Islamic religious education [7]. For example, traditional methods emphasize memorizing and understanding religious texts and contextual processes linking religion to everyday life. These theories provide a foundation for understanding Islamic religious education's urgency and paradigm shift in Indonesian society [8].

Several previous studies have also been conducted on Islamic religious education in Indonesia. However, there is a lack of research specifically focusing on the research location of Sokanegara Subdistrict, East Purwokerto, Banyumas. Considering this limitation, this study aims to fill this gap by analyzing the urgency and paradigm shift of Islamic religious education from the perspective of the local community.

The research questions for this study are as follows What are the perspectives of the community in the Sokanegara Subdistrict, East Purwokerto, and Banyumas regarding the urgency of Islamic religious education? By answering these questions, this research is expected to provide deeper insights into the urgency and paradigm shift of Islamic religious education in the context of the local community in Sokanegara Subdistrict, East Purwokerto, Banyumas. Additionally, the findings of this study may contribute valuable knowledge to the development of Islamic educational policies that are more effective and relevant to the needs of the local community.

This research will employ a qualitative approach involving participants from the community in Sokanegara Subdistrict. Data will be collected through in-depth interviews and participatory observation to understand the community's perspectives on Islamic

## **Islamic Religious Education in Indonesia: Understanding the Urgency and Paradigm Shift from a Societal Perspective**

religious education's urgency and paradigm shift. The results of this study are expected to provide a more comprehensive understanding of the urgency and paradigm shift of Islamic religious education from the viewpoint of the community in Indonesia, specifically in the Sokanegara Subdistrict. These findings can serve as a basis for formulating more effective and relevant Islamic educational policies that cater to the local community's needs.

Thus, this research holds theoretical relevance for developing theories in Islamic educational practices and practical significance in enhancing the quality of Islamic religious education in Indonesia. It can also serve as a foundation for further research in the same domain or related fields. Through this research, it is hoped that a deeper understanding of the urgency and paradigm shift of Islamic religious education from the community's perspective in Sokanegara Subdistrict, East Purwokerto, Banyumas, can be attained. The findings can contribute to developing more relevant and effective strategies and policies in Islamic education in Indonesia.

### **II. METHOD**

This study utilizes a qualitative research approach to investigate Islamic religious education's urgency and paradigm shift in Sokanegara Village, Tanjlig Sub-district, East Purwokerto, Banyumas Regency. In-depth interviews will be conducted with the Village Head, RT Chairman, and selected members of the Purwokerto community residing at Jl. Tanjlig RT 02 RW 09. The interviews will focus on obtaining insights into the societal perspective regarding the significance of Islamic religious education. Data analysis will involve organizing and coding the qualitative data to identify themes and patterns related to the role of religion in Indonesian society, the increasing demand for Islamic religious education, and the contributions of Islamic education to the community. Triangulation of findings from various sources will enhance research validity, while ethical considerations will be upheld throughout the research process. This methodology aims to provide a comprehensive understanding of the research topic and its implications for the community in Sokanegara Village.

Additionally, the research methodology incorporates participant selection from three distinct groups: the Village Head of Sokanegara, the RT Chairman, and members of the Purwokerto community. These participants were chosen to provide diverse perspectives on Islamic religious education's urgency and paradigm shift. In-depth interviews will be conducted to gather rich qualitative data, focusing on their views, experiences, and perceptions of Islamic religious education. The collected data will then be analyzed through coding and thematic analysis to identify key findings and themes from the interviews. This qualitative research design allows for a comprehensive exploration of the significance of Islamic religious education in Indonesian society, addressing the role of religion, the increasing demand for Islamic education, and the contributions it offers to the community. Data triangulation from multiple sources enhances the credibility and validity of the research findings. Ethical considerations, including informed consent and confidentiality, will be strictly adhered to throughout the study.

### **III. RESULTS AND DISCUSSION OF FINDINGS**

#### **The Significance of Islamic Religious Education in Indonesia**

The importance of Islamic religious education for individuals, especially children, cannot be understated. It serves as a means of guidance and instruction provided by educators to ensure that learners have a comprehensive understanding of the teachings and principles of Islam. The ultimate goal is for students to internalize and practice Islamic values, making them an integral part of their worldview and leading them toward salvation in this world and the hereafter. Islamic religious education is not limited to non-formal education settings such as Quranic Education Centers (TPA) and families but can also be found in formal education institutions like schools. Schools employ systematic guidance, instruction, and training programs in traditional educational settings to help students optimally develop their potential.

In today's rapidly advancing era, particularly in urban areas, many children lack parental supervision, which can lead them astray and expose them to negative influences. Therefore, children require guidance and instruction in Islamic religious education from parents and teachers. While general education subjects are considered important, Islamic religious education should be the foundation for children, providing them with proper direction and fostering good moral character. To gather data for this study, the researcher interviewed various figures, including religious leaders, community leaders, and parents in Sokanegara Village. These individuals served as informants for the research, contributing valuable insights into the perception of Islamic education in schools from the perspective of the Kelurahan Sokanegara, East Purwokerto, Banyumas community. The data collected will lead to a comprehensive analysis and conclusions regarding the research topic.

During this stage, the author first met with Diby Suwignyo (Village Head of Sokanegara), who stated, "In my opinion, it is crucial, even mandatory, to provide Islamic religious education in schools because it shapes the character of every student, which

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they may not necessarily acquire from their family environment. Additionally, every individual should have a basic education about their religion."

From this interview, it can be inferred that Islamic religious education in schools is important for children. It provides a fundamental education and helps in fostering good moral character. Based on Mr. Dibyo's statement and the observation made by the author in the Sokanegara Village community, it is evident that every parent desires their children to have good moral values, politeness in behavior and speech, and respect towards others and elders. Islamic religious education in schools also helps children establish a strong foundation of faith, making religious values a priority or basis for their interactions, opinions, decision-making, and daily behavior.

The purpose of Islamic religious education should align with the values of Islamic religious education, which is to enable individuals to fulfill their role as vicegerents as intended by their creation [9]. Islamic religious education guides individuals to develop faithful, righteous characters and noble morals. Having teachers in schools provides guidance, direction, and positive role models for children. To show children possess good morals, it is not enough to simply offer explanations or theories; it is necessary to cultivate a habit of performing good deeds. Children are guided to internalize and practice behavior that aligns with noble moral values, allowing them to gain firsthand experiences. These experiences become ingrained in their souls and shape their attitudes and actions [10].

Based on field data and observations, it was found that parents already understand the importance of Islamic religious education in schools. They are concerned that their children may stray from their faith and lack guidance in navigating this world. Therefore, it is not only the responsibility of parents to provide attention and advice, but the community also recognizes the significant role of teachers in schools in shaping children's good character. Islamic religious education in schools helps children enhance their understanding of spiritual matters. The author interviewed Mr. Suryanto (Community Figure), who stated, "Education in schools is crucial because numerous factors can lead our children astray from Islam, ranging from peer influence to the impact of the internet in their daily lives."

The primary responsibility for educating children lies with parents. However, due to limitations in abilities, time, and other factors, parents delegate their commitment to more competent individuals to serve as educators for their children, which is achieved by sending them to school. By doing so, parents entrust their role as educators to educational institutions. Although schools do not assume full responsibility for parents, they assist parents in educating their children due to their expertise and resources. Teachers or educators, in this context, are an essential component of education, particularly in addressing various challenges related to improving the quality of education.

Based on the analysis of the interviews and observations above regarding the societal views on the urgency of Islamic religious education in schools, it can be concluded that the community of Sokanegara Village generally considers Islamic religious instruction as highly important. This perspective stems from the community's progressive thinking, as they recognize that having Islamic religious education in schools helps children develop good moral character, understand boundaries in social interactions, and grasp the permissible and forbidden aspects of life. Notably, the importance placed on Islamic religious education in schools is not limited to formal education alone, as the community of Sokanegara Village acknowledges the significance of incorporating Islamic religious education alongside general subjects. This recognition reflects their understanding that children need a strong foundation in Islamic religious education, provided not only through non-formal education but also in schools.

### **Contributions of Islamic Education to Society**

The discussion analysis of Islamic education's contributions to society reveals several key points. Islamic education shapes individuals' beliefs, values, and behavior, significantly impacting the community.

Firstly, Islamic education instills moral and ethical values in individuals. It emphasizes the importance of compassion, honesty, justice, and integrity, fostering a sense of responsibility towards others and promoting harmonious relationships. This moral framework serves as a guide for individuals to make ethical decisions and engage in positive actions that contribute to the betterment of society.

Secondly, Islamic education promotes social cohesion and unity. It emphasizes the concept of brotherhood and sisterhood among Muslims, emphasizing the importance of community and cooperation. By nurturing a sense of belonging and common purpose, Islamic education fosters social bonds and encourages individuals to work together for the collective welfare of society. Islamic education can contribute to the development of a strong and cohesive community.

Additionally, Islamic education emphasizes the pursuit of knowledge and intellectual growth. It encourages critical thinking, inquiry, and a deep understanding of Islamic teachings [11], [12]. This philosophical development equips individuals with the skills and knowledge to engage in constructive dialogue, contribute to academic and intellectual discourse, and address contemporary

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societal challenges. Islamic education also promotes a balanced approach to expertise, combining religious teachings with various disciplines, which enables individuals to have a holistic understanding of the world and make informed decisions.

Moreover, Islamic education is vital in promoting social justice and equality. It highlights the principles of fairness, compassion, and the rights of all individuals. Islamic teachings encourage individuals to stand against injustice, advocate for the marginalized, and work towards creating a just and equitable society. By nurturing these values, Islamic education promotes social justice and eliminates discrimination and oppression. Overall, the contributions of Islamic education to the community are evident in the development of individuals with strong moral character, a sense of social responsibility, intellectual growth, and a commitment to social justice. These qualities positively impact society by fostering harmonious relationships, promoting social cohesion, and creating a more just and equitable community.

### **The Public's View on the Urgency of Islamic Religious Education (PAI) in Formal Education**

Every community views education differently, especially Islamic religious education in schools [13]. The majority of urban communities have a progressive mindset when it comes to education. There are various opinions regarding the meaning of Islamic religious education in schools, influenced by the diverse backgrounds of the community members. To understand the experiences and perspectives of the community regarding the urgency of Islamic religious education in schools, interviews and questions were conducted with various stakeholders. The opinions of the community in the Sokanegara Subdistrict regarding the view on Islamic religious education in schools depend on several factors, including educational experiences, family environment, and the surrounding community. These insights were gathered through interviews with individuals with educational backgrounds, formal leaders, and the general community.

Education is the effort to nurture and develop learners, encompassing their physical, psychological, social, and spiritual aspects. It is essential for achieving balance and perfection in individual and societal development. Through educational experiences, individuals can be guided to fully develop their potential as human beings and as members of society.

In an interview with Alda Yulia Swandani, a Quran teacher, she stated, "From my perspective, different opinions can be influenced by one's environment, such as the community and each person's educational background." From this statement, it can be inferred that Annisa's and Alda's opinions align with the observation data conducted by the author, which indicates that the educational backgrounds in Sokanegara Village are diverse. Despite being in an urban environment where the community's views on education are progressive, there are still individuals who have only completed primary education and were unable to pursue higher education due to economic constraints or financial limitations. However, many community members prioritize education, with many completing tertiary education.

The author also observed the community environment in Sokanegara Village, and it aligns with the opinions of Annisa and Alda that the community environment significantly influences an individual's perception of the importance of Islamic education in schools. The community in Sokanegara Village is known for its positive attributes, where mutual respect, friendliness, and care for others are prevalent. When community members pass each other, they greet each other with smiles and exchange greetings. Moreover, when a community member falls seriously ill, others visit and provide material assistance, even if it may not be substantial. These aspects contribute to parents' efforts in educating their children to diligently study Islamic knowledge diligently, aiming to develop good moral character and apply it in their daily lives.

It can be concluded that the family environment, educational experiences, and community setting influence an individual's perspective on the urgency of Islamic Education in schools. Many families in Desa Sokanegara consistently teach and instill religious values in their children, aiming to provide them with a strong foundation for a purposeful and directed life. Furthermore, through positive educational experiences, individuals can broaden and develop their knowledge and understanding, not only in secular subjects but also in Islamic Education, which can positively impact the Desa Sokanegara community. The community environment in Desa Sokanegara is favorable, as it encourages individuals to think more openly and completely in response to the urgency of Islamic Education in schools.

From the above analysis, it can be observed that the people's perspectives in Desa Sokanegara regarding the urgency of Islamic Education in schools are influenced by several factors, namely, the background of educational experiences, family environment, and community setting. This understanding is derived from interviews with individuals with educational experiences, formal leaders, and the general public. Education is undoubtedly crucial for individuals to have an open and progressive mindset. However, some individuals in Desa Sokanegara still do not pursue higher education. An increasing number of people prioritize education, even up to the university level. With educational backgrounds primarily influenced by the experiences of parents and the education pursued by children, the people of Desa Sokanegara have a broad perspective and continuously develop their thoughts on the significance of Islamic Education in schools.

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Furthermore, in the family environment of Desa Sokanegara, it is common to find parents who consistently teach and instill religious values in their children, aiming to provide them with a strong foundation for a directed life. Despite the busy work schedules of urban parents, resulting in a lack of attention and teachings on Islamic Education, the presence of Islamic Education in schools becomes a valuable support system, helping parents and families in the development of their children's strong religious foundation and guiding them towards a purposeful life.

Moreover, the community setting also influences the people's perspectives in Desa Sokanegara regarding the urgency of Islamic Education in schools. The Sokanegara community is characterized by a favorable environment where good relationships and effective communication among community members are practiced. They also demonstrate a high level of tolerance towards both Muslim and non-Muslim residents, allowing for the exchange of thoughts and opinions regarding life and religion. As a result, the community holds diverse views on religion, particularly regarding the importance of Islamic Education in schools.

### IV. CONCLUSIONS

Islamic religious education holds significant importance in Indonesia, particularly in shaping individuals' moral character and values, including children. The study highlighted the urgent need for Islamic religious education in the country, especially in formal education settings. The research examined the societal perspective on Islamic education and the paradigm shift required to address contemporary challenges.

The findings revealed that Islamic religious education in schools plays a crucial role in guiding children and instilling moral values, particularly in urban areas where parental supervision may be limited. The community recognized the importance of Islamic education in schools to develop good character and provide children with a strong foundation in their faith. The research also emphasized the contributions of Islamic education to society, including fostering moral values, promoting social cohesion, encouraging intellectual growth, and advocating for social justice.

Overall, the study emphasized the significance of incorporating Islamic religious education in formal educational institutions and highlighted the need for a comprehensive approach that combines spiritual teachings with critical thinking skills. It called for a paradigm shift in Islamic education, moving away from rote memorization and focusing on experiential learning and applying Islamic principles in daily life. By recognizing the urgency and embracing a societal perspective, stakeholders can work together to improve Islamic religious education in Indonesia and nurture individuals who contribute positively to their communities and society.

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## Development and Performance Test of Vertical Bed Dryer for Drying of Corn Kernel



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**ABSTRACT:** This research aims to develop the design of vertical bed dryer which could dry corn kernel. The dryer characteristics has been investigated. The dryer design consists of three chambers which each in order to facilitate of inlet hot air dryer stream, corn kernel chamber, and outlet wet air. Each chamber was separated by perforated plate steel. Air flew by a blower and heated by 2 x 350 heaters. The research parameter was: (a) drying air temperature, varied 50-60 °C, (b) air velocity varied of 2-4 m/s, blower power (W), and moisture content, mc (%). The results shows that moisture content decreasing of 5 kg corn kernel from 20% to 10% took 24-26 minutes.

**KEYWORDS:** dryer, drying, vertical bed, corn kernel, moisture content

### I. INTRODUCTION

Drying is a preservation process to reduce water activity by reducing water content, avoiding potential damage and contamination during long storage periods. The drying process must be able to improve hygienic conditions and product loss (Kaymak-Ertekin, 2002). Several drying methods have been developed such as microwave drying, hot-air drying, osmotic dehydration, spray drying, and vacuum impregnation. Another advantage of the food drying process is volume and weight reduction, which leads to storage and transportation costs (Okos et al., 1992).

Hygiene and cost-effective pathways in food preservation are important given the uncertainty of food supply. The introduction of dryers can improve the quality of dried products when compared to traditional drying methods such as sun drying. Therefore, a simulation model is needed for the design and operation of the dryer. Several researchers have developed simulation models for forced convection and natural convection drying systems proposed by Ratti and Mujumdar (1997). There have been many studies on the drying behavior of several fruits such as mushrooms, nuts, and pumpkin (Yaldiz and Ertekin, 20019) and chilies (Kaymak-Ertekin, 2002). However, some products from medicinal plants are sensitive to temperature, such as ginger, temulawak, kencur, turmeric, temureng and galangal.

One of the important agricultural commodities in Indonesia is corn. Safe storage for corn is at a moisture content (MC) of 14% -16% on a dry basis. In addition to food, corn is also used as animal feed. The problem with the quality of corn is the presence of aflatoxin, because aflatoxin is a toxic substance for humans and livestock. Normally, the MC of corn at harvest is in the range of 33-40% on a dry basis. At this MC level and humid weather conditions, *Aspergillus flavus* will infect corn kernels and then produce aflatoxin (Wongurai et al, 1992). Consequently, maize must be dried to 22-23% dry basis within 1-2 days (Prachayawarakorn et al, 1995).

In Indonesia, drying corn in the sun is no longer suitable due to the abundance of corn and it must be dried immediately for safe storage. Therefore, a mechanical dryer is needed as an alternative drying for corn kernels. There are several types of mechanical dryers such as fluidized bed dryers, rotary dryers, moving-bed dryers, and so on. The efficiency of these mechanical dryers differs due to differences in heat transfer and material characteristics. Fluidized bed dryer is widely applied in industry because it has several advantages compared to other types (Nonhebel and Moss, 1971), as follows:

1. The heat transfer rate is high, so the drying time is short and the size of the dryer is relatively small with a large capacity.
2. Bed condition isothermal, can produce relatively uniform product quality.

This advantage is achieved with a high air flow rate. With this fact, the thermal efficiency of the fluidized bed dryer is low (Giner and Calvelo, 1987). This is a consideration for dryer users in drying costs. Besides that, the use of the room or space footprint is also a concern. In general, bed dryers require a large footprint.

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In order to improve thermal efficiency, optimization of bed height or thickness with respect to temperature and drying air rate needs to be investigated. Improvements to the vertical dryer design are also a path of exploration to increase drying capacity in a spatial footprint orientation. Therefore, a vertical bed dryer needs to be developed.

### II. LITERATURE REVIEW

Drying or dehydration is a process of controlling heat from food products to evaporate a certain amount of water content. Drying is very important for a product for ease of transportation and to increase shelf life without losing quality. Drying includes a simultaneous process of heat transfer and mass transfer. The main parameters that control the drying rate are drying air temperature, air flow rate, air relative humidity (Sharad, 2013). These parameters are arranged in an equation or empirical relation. However, empirical relational literature on some agro products is not available and must be developed experimentally. In the drying process, hot air is generated and circulated over the material to be dried. The difference in water content between the core and the surface of the material creates a pressure gradient which becomes the driving force to remove water from the material.

Drying processes can be classified into three categories based on their operating pressure, namely: drying processes at atmospheric pressure, under vacuum pressure, and freeze drying. Freeze drying is a process of transferring water content by means of sublimation of the frozen material (Earle, 2004). Water transfer in vacuum drying is faster than at atmospheric pressure. The main limitation to vacuum and freeze drying is the need for a vacuum evacuation system resulting in high investment and operating costs. Other drawbacks of freeze drying are humidity control problems and the need for frozen storage space.

Drying technique at atmospheric pressure using hot air is the most economical technique. Among the drying techniques or methods with hot air is fluidized bed drying--FBD. FBD has advantages in the ease of controlling heat and mass transfer, uniform reduction of water content in a shorter time, and high drying rate (Kassem, 2011). FBD dryer increases efficiency because the material is covered with hot air which acts as drying air. An overview of the FBD dryer can be seen in Figure 1.

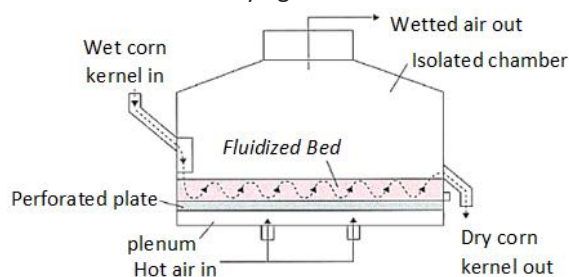


Figure 1. Fluidized bed dryer

These dryers can provide a uniform bed temperature throughout the drying period. However, air flow and the formation of hot spots can lead to variations in the humidity of the drying air and can cause product damage or quality non-uniformity. Products which are hygroscopic require special addition to be carried out in the FBD dryer.

The drying curve of a product represents the characteristics of the product against conditions of temperature, air velocity and pressure (Patil, 2012). A typical drying curve has three distinct periods, as shown in Figure 2.

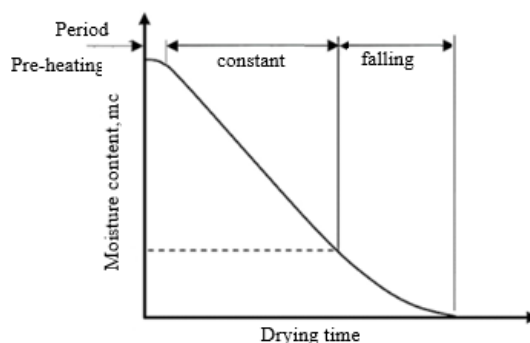


Figure 2. Drying curve

The initial period is when sensible heat is transferred to the wet material and then pre-heated. The second period is called the constant drying rate period. In this period, the free water content (free moisture) on the surface begins to evaporate and

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continues until all the water content has evaporated at the critical water content. The third period is called the falling rate period. The water content undergoes mass transfer by diffusion from the inside to the outside or surface and causes a driving force. Reduction of the moisture content of the wet material per unit time (drying rate) is a method for measuring dryer performance (Chen, 1989; Smirnov, 1989).

Sarker (2015) analyzed the energy efficiency and exergy of industrial-scale rice FBD dryers. The high operating temperature and high-water content of the material increase the specific energy consumption. Poor insulation also contributes to energy loss, resulting in only 31-37% exergy utilization and a large amount of energy wasted. Irigoyen (2016) tested the energy consumption of FBD dryers for soybean products, which confirmed that energy efficiency increased by 63%. Meanwhile, Ozahi and Demir (2015) reported that a lower ratio of normalized mass ( $mp/ma \cdot t$ ), in a pilot-scale FBD dryer, would reduce the drying efficiency of corn. Thus, normally energy efficiency on a pilot scale will be lower. Therefore, another dryer scheme needs to be made to compare the energy efficiency.

### III. METHODOLOGY

Equipment in this research includes: vertical bed dryer prototype, thermometer, thermohygrometer, manometer, anemometer, and mc-meter. While the research material is in the form of corn kernels with an initial MC of around 23%.

#### A. Vertical Bed Dryer Prototype Design and Fabrication

The design of the vertical bed dryer prototype that will be made consists of the main components: vertical bed, fan, heater, and piping. The schematic of the tool can be seen in Figure 3. The vertical bed is in the form of a cylinder which consists of 3 (three) compartments in the form of annulus. Annulus-1 to facilitate the flow of drying air into the vertical bed, annulus-2 to place the corn kernels, and annulus-3 to facilitate the drying air to leave the vertical bed. Between the annulus is sealed with a wall made of perforated plate.

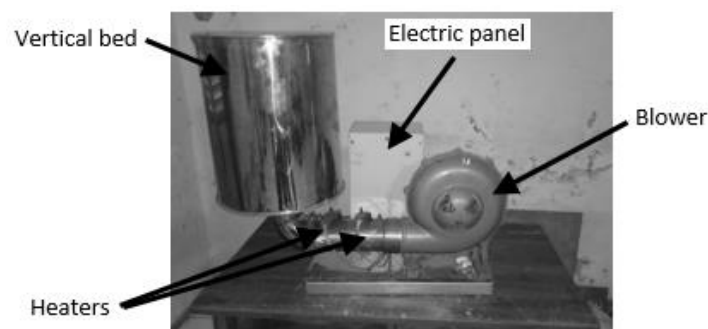


Figure 3. Drying curve

The dryer is equipped with instruments including:

- i. Thermometer, to measure dry bulb temperature and wet bulb temperature.
- ii. Manometer, to measure the pressure difference or pressure drop.
- iii. Thermohygrometer, to measure the temperature and relative humidity of the air.
- iv. Anemometer, to measure airspeed.
- v. MC-meter, to measure the water content of corn kernels
- vi. Infra-red thermometer, to measure the temperature of the drying wall.

The manometer, thermometer and thermohygrometer instruments are installed at the inlet and outlet of the vertical bed, while the anemometer is installed at the outlet bed.

#### B. Research Parameter

Title must be in 24 pt Regular font. Author name must be in 11 pt Regular font. Author affiliation must be in 10 pt Italic. Email address must be in 9 pt Courier Regular font.

Parameters in the research included air temperature, air velocity, air humidity, and corn seed bed thickness. These parameters are divided into dependent variables, independent variables, and the following fixed variables:

##### Independent variable:

- a. Outlet air velocity ( $v_{ud,out}$ ), which is varied at 2 m/s, 3 m/s, and 4 m/s.
- b. The inlet air temperature ( $T_{ud,in}$ ), which is varied at 120 °C, 135 °C and 150 °C.

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### Dependent variable:

- Relative humidity (RH) of outlet air ( $RH_{out}$ )
- Outlet air temperature ( $T_{air,out}$ )
- Water content or final MC of corn kernels (final MC)
- Fan Power ( $P_{fan}$ )
- Heater power ( $P_{heater}$ )

### Fixed variable:

- The relative humidity (RH) of the inlet air ( $RH_{in}$ ).
- Radial bed thickness ( $H_{bed}$ ) is set at 50 mm.

### C. Research Procedure

After the prototype has been manufactured, testing is carried out with the following steps:

- Inserting corn kernels into the annulus-2
- Turn on the fan and heater
- Set the fan speed, according to the specified independent variable
- Set the inlet air temperature, according to the set independent variables
- Adjust the damper to set the air fraction
- Ensure that the anemometer reading on the outlet bed side is within the specified variable.
- Make sure the thermometer reading does not change significantly

Data collection steps are carried out in 2 (two) stages including pre-research and main research. Data collection for pre-research is carried out as follows:

- Run the vertical bed drying system until the indicated outlet temperature is stable
- Record the time required to achieve these conditions and the test results are recorded in the observation table
- The time recording results are described for the time interval for changing the temperature setting.

Furthermore, the main research data collection is carried out starting from the steady state so that the data taken is valid. The test data collection procedure is as follows:

- Start
- Set the temperature and airspeed as planned and wait for the system to settle down
- Record the results of observations of measuring instruments such as air temperature and humidity, air speed, fan and heater power, RH, and mc corn kernels
- Recording ends when mc corn has reached 14%

The data recording table can be seen in Table 1.

**Table 1. Experimental data recording sheet**

Set of independent variables set:

- Outlet air velocity ( $v_{air,out}$ ) : ..... m/s
- Inlet air temperature ( $T_{air,in}$ ) : ..... °C
- Recirculated air fraction (FR) : ....

Time, t (minute)	Air drying				Fan Power (kW)	Heater Power (kW)	mc (%)
	Inlet condition		Outlet condition				
	$T_{air,in}$ (°C)	$RH_{air,in}$ (%)	$T_{air,out}$ (°C)	$RH_{air,out}$ (%)			
0							
1							
2							
etc.							

### D. Analysis

Experimental data are plotted in a graph of mc corn kernels versus time, for each set of independent variables defined. Then, the graphs are analyzed and compared, to find out the most efficient parameters. The efficient indicator is the specific energy consumption, which is the ratio between the energy required per kilogram of dry corn.

## Development and Performance Test of Vertical Bed Dryer for Drying of Corn Kernel

### IV. RESULT AND DISCUSSION

Corn kernel is placed as a bed in the annulus drying chamber. Then the blower and heater are turned on. The drying temperature is set at 50 oC via the temperature controller setting. Every 2 (two) minutes the corn water content data is measured using a mc-meter until the water content reaches 10%. The results of drying shelled corn are presented in Figure 4.

Figure 4 shows that the trend of reducing the water content of shelled corn decreased sharply from the beginning of drying to the 8th minute. Then the trend is more gentle until the final water content is 9-10%. This trend is suspected because the water content outside the fiber diffuses more easily to reach the surface. then becomes saturated steam on the surface.

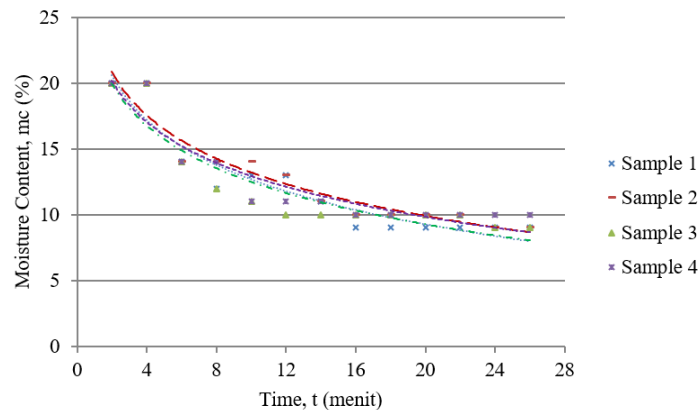


Figure 4. Corn drying curve

The process is continued by diffusion of water vapor into the hot air flow and advection also occurs so that the film layer of water vapor on the surface of the corn kernels is not saturated. The degree of saturation of the water vapor film layer on the surface becomes the driving force for diffusion outside the corn fiber.

The corn drying process is approached by a thin-layer drying mathematical model from Henderson-Pabis (in Lola, 2018). With this approach, the results of the mathematical model for each sample are presented in Table 2.

Table 2. R<sup>2</sup> value of Hendersen-Pabis model for each sample

Sample	Temperature (°C)	Henderson – Pabis Equation		
		A	k	R <sup>2</sup>
Corn Kernel	50	4,924	0,8583	0,9022
		4,751	0,8625,	0,9276
		4,653	0,8293	0,8701
		4,489	0,8511	0,8795

The drying graphs of samples 1 to 2 show fitness with the Hendersen-Pabis model but with an average R<sup>2</sup> value close to 0.9. This low R<sup>2</sup> value is suspected because the thickness of the layer in this drying is 50 mm.

### V. CONCLUSIONS

The conclusion from the results of research on drying corn with a vertical bed type dryer is that the characteristics of the developed vertical bed type corn dryer are similar to the characteristics of a horizontal bed type dryer, which is indicated by conformity to the Hendersen-Pabis equation. The suggestion from this research is the need for further research by completing data on various values of temperature variables and heating air velocity.

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## A Study to Identify the Commodity Characteristics towards A Potential Derivative Contract on Tea



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**ABSTRACT:** In this study, we examine the determinants of a successful derivative futures contract and explore whether an exhaustive checklist of criteria such as the one proposed by the Securities and Exchange Board of India (SEBI) guarantees the success of a commodity contract. This study has important implications for contract design and new product launches. More market-orientated risk management mechanisms such as hedging via derivatives could allow farmers and producers to manage their risk and efficiently discover true prices. The government's vision to develop a progressive and sustainable commodities market in India is facing a fundamental issue: What makes a futures contract successful? This study attempts to analyse this question. Academics and policymakers have long deliberated on the conditions that make a contract successful. This study revisits those conditions in the context of Indian agricultural futures contracts and assesses the dispositions made by the SEBI's long list of criteria as well as insights from prior studies about the determinants of a successful contract. Tea satisfies almost all the criteria with either first or second rank among the three compared products. Therefore, we can conclude that Tea has the necessary and potential characteristics for introduction in the Commodity Derivative Market of India and progress forward as a successful commodity.

**KEYWORDS:** Derivative Futures Contract, Successful Contract, SEBI

### INTRODUCTION

Commodity futures trading are now a significant commercial activity for any economy due to the increasing number of listed commodity futures contracts around the world and an equally enormous increase in their trading volumes. Due to their low correlation with conventional asset classes like stocks and bonds, commodity futures contracts are an effective instrument for risk management and price discovery, numerous researches have confirmed this finding (Gorton & Rouwenhorst, 2006). The need for farmers' and traders provided the justification for trading agricultural commodities as forward/futures contracts, which dates back to the development of derivative trading. (Weber, 2009). For instance, the Chicago Board of Trade (CBOT), the largest agriculture derivative market in the world, was created by farmers who wanted to control the price risks associated with their growing grain stocks as mentioned by researcher till (2014).

According to the Abhijit Sens's Report of the "Expert Committee to Study the Impact of Futures Trading on Agricultural Commodity Prices" published in 2011, all commodities are not suitable for futures trading. For a commodity to be suitable for Futures Trading it must possess the following characteristics –

- (i) The Commodity should have a large demand and supply chain conditions i.e., volume and marketable surplus should large. In others words, it also means that there needs to have a large and well-defined underlying cash market that lends itself to standardization.
- (ii) Prices should be volatile to necessitate hedging through futures trading.
- (iii) The commodity should be free from substantial control from govt. regulations imposing restriction on the prices, supply and distributionof the commodity.
- (iv) The commodity should be homogeneous in nature or
- (v) Alternately it must be possible to specify a standard grade and to measure deviations from the grade. This condition is necessary for the futures exchanges to deal with standardized contracts.
- (vi) The commodity should be durable and storable. In the absence of this condition arbitrage would not be possible and there would be no relationship between spot and futures market.
- (vii) The Commodity should flow naturally to the market.

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- (viii) There should be some degree of uncertainty either regarding the supply or the consumption or regarding both supply and consumption.

### THE SEBI REGULATIONS ON ELIGIBILITY CRITERIA AND INTRODUCTION OF DERIVATIVE CONTRACTS IN AGRI-COMMODITIES

The Securities and Exchange Board of India (SEBI), in its circular (SEBI/HO/CDMRD/DMP/CIR/P/2017/6) dated 20 January 2017, lists 23 criteria for eligibility, retention, and re-introduction of commodity contracts. The circular categorised these criteria into five parameters: commodity fundamentals, ease of doing business, trade/business, risk management, and benchmark potential. As the nature / properties of one commodity may be different from another, hence all commodities may not be suitable for derivatives trading in a commodity exchange. As such it must be carefully ascertained about the usefulness of launching a futures / derivative contract. Keeping in view about this objective, The Commodity Derivatives Advisory Committee (CDAC) had been constituted in 2017, for advising the SEBI on matters concerning the effective regulation and development of the commodity derivatives market. Based on their findings about the successful introduction of a commodity derivative, the Committee recommended the following points of importance –

- a) The commodities which are to be recommended by the SEBI for notification by the Government or on which the exchange proposes to launch a contract should pass through some test based upon some objective parameters and upon fulfilment of those should be allowed for trading.
- b) It is also very important that the commodities which are allowed for trading should be liquid enough to for smooth trading in the market.

While it may not be practically possible to maintain a definite objective criterion which may be consistently applied across all commodities to be included in the derivatives basket, a broad framework to achieve that objective can certainly be made. Therefore, based on the recommendations of the CDAC and in consultation with various stakeholders of the commodity markets, the following criteria has been laid down for the commodity to be eligible for trading, retention and re-introduction in the commodity markets:

**Table 1. The Sebi Regulations on Eligibility Criteria and Introduction of Derivative Contracts In Agri-Commodities**

MAIN PARAMETER	SUB PARAMETER
<b>A) COMMODITY FUNDAMENTALS</b>	Size of the Commodity Volume of the Cash Market Homogeneity / Standardization Durability / Storability
<b>B) TRADE FACTORS</b>	Global Imports and Exports Value Chain Participants Geographical Coverage
<b>C) EASE OF DOING BUSINESS</b>	Price Control / Minimum Support Price (MSP) for the commodity Applicability of Other Laws
<b>D) RISK MANAGEMENT</b>	Correlation with the International Markets Seasonality Price Volatility

### STATEMENT OF THE OBJECTIVE

This study attempts to probe into the determinants of a successful agriculture derivative contract by using SEBI's list of criteria, with the following objectives:

- (a) To identify the important commodity characteristics in the designing of a successful futures contract for agricultural commodity
- (b) To identify the characteristics of a successful and active agricultural commodity and that of an unsuccessful agricultural commodity and to examine the presence of these major characteristics in the commodity tea which has not yet entered for derivative contract.

### LITERATURE REVIEW

The Indian agriculture futures market has been around for more than a century. Only ten years after the first futures trade was completed in the USA, the first cotton futures trade was documented in 1875 at the Bombay Cotton Exchange. Before the Second World War, markets had a high turnover and were liquid (Bhattacharya, 2007). Before the Second World War, traders sold goods such rice, wheat, sugar, oilseed complex (groundnut, groundnut oil, and castor seed), cotton, raw jute, and jute-related items



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(Bhattacharya, 2007). Due to a lack of basic supplies during the Second World War, suspensions and interventions began. Following independence, futures trading bans persisted, and by 1977, only two commodities—pepper and turmeric—were still eligible for trading (Bhattacharya, 2007).

Since India's independence, a number of government committees have been established, including the Shroff Committee in 1950, the Dantwala Committee in 1956, the Khusro Committee in 1980, the Kabra Committee in 1994, the Habibullah Committee in 2003, and the Abhijit Sen Committee in 2008. These studies examined the function of futures trading in Indian markets, assessed its effect on prices, investigated whether price discovery and price risk management goals had been achieved by the futures market, suggested commodities for which trading should be permitted, examined the regulatory environment, proposed amendments to the current Act, examined the operation of the regulatory bodies, and suggested measures to strengthen the Forward Markets Commission.

All of these studies offered various suggestions for expanding the industry. Some of the recommendations included strengthening the regulatory body, modernising warehouses, improving supply side management, removing weaknesses in the spot market, ensuring convergence of the spot and futures markets, connecting farmers to the futures market, ensuring information availability and accessibility, and promoting transparency in the dissemination of information. Among all of these Committee findings, the Khusro Committee (1980) and Kabra Committee (1994) Committee reports cover the standards for approving commodity futures trading. It is well known that not all commodities are suitable for futures trading. (Silber, 1981, Tashjian, 1995).

The first study to explore the factors leading to the success of futures contracts was Baer and Saxon (1949), according to which a commodity will be successful in futures trading if it fulfils six conditions: (1) the commodity must be homogeneous; (2) the commodity should be susceptible to standardisation; (3) its supply and demand must be high; (4) its supply and demand must be uncertain; (5) its supply must flow naturally to markets, and lastly, (6) the commodity must not be perishable. Black (1986) emphasised four elements that determined the success of a contract: (1) hedging effectiveness as measured by the relative residual risk of own hedging versus cross-hedging; (2) liquidity as measured by the bid-ask spread or average daily traded volume; (3) cash price volatility, and (4) size of the cash market. Sandor (1973) reported that the one criterion which makes a futures contract successful is sufficient cash price variability of the commodity. In the context of agricultural derivatives, Brorsen and Fofana (2001), Pannell, Hailu, Weersink and Burt (2008), and Simmons (2002) found that the activeness of the cash market is a crucial determinant for high-volume trades.

Three main streams make up the expanding amount of knowledge on the factors that influence the success of futures contracts. The first stream is the commodity characteristic approach, which comprises characteristics of commodities that are appropriate for futures trading, such as homogeneity, storability, export potential, and government intervention (Tashjian, 1995; Thompson, 1995). The second stream focuses on the technical features of contracts, i.e., contract specifications including contract size, settlement logic, quality, and standardisation (Black, 1986; Duffie & Jackson, 1989; Lien & Tse, 2006; Tashjian, 1995). This stream is known as the contract design method.

The final stream is the macro approach, which includes macroeconomic influences, exchange-related factors, and characteristics of organisations that are associated with the decision to use futures such as a firm's risk exposure, financial distress cost, and growth opportunities (Carter, 1998; Geczy, Minton & Schrand, 1997; Howton & Perfect, 1998; Koski & Pontiff, 1999; Mian, 1996; Nance, Smith & Smithson, 1993; Tufano, 1996).

According to conventional wisdom, commodities themselves need to have specific qualities in order to succeed (Baer & Saxon, 1949; Black, 1986). Over time, it has become apparent that having only the traits related to a given commodity is insufficient to ensure success and that not having these traits does not necessarily mean failure. This prompted a lookup of more elements pertaining to the spot market and futures market. According to Grey (1966) and Working (1953), the success of contracts is largely dependent on hedger demand, which draws more speculators and makes the contract liquid. As a result, the goal of the research became understanding the market factors that draw hedgers.

## **METHODOLOGY**

The framework for the objective has been conceptualised using the aforementioned literature. In order to assess the present objective, the desirable characteristics needed for introduction of futures trading will be examined for the commodity Tea. The characteristics of two more commodities, Cotton and Jute will also be analysed to examine differences between a successful and an unsuccessful future commodity. The data about the production, consumption, export, import of Cotton and Jute has been taken from the official website of Multi Commodity Exchange, National Commodity and Derivative Exchange, National Jute Board, Jute Commission of India and the Cotton Board of India and also from AGMARKNET. The following paragraphs pertain to discussion regarding the nature and extent of characteristics possessed by tea. Comparison of characteristics possessed by Cotton (successful

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derivative futures contract) and Jute (an unsuccessful derivative futures contract) have also been discussed to understand how these characteristics affect the derivative market.

In accordance with the Securities Contract Regulation Act, trading in derivatives is permitted for certain commodities, including tea. However, there is no market for commodity derivatives on tea in India. As was previously discussed, the commodity must have specific inherent qualities in order to be acceptable for participation in the derivatives market. An in-depth understanding of the key issues relevant to the objectives of the study is given from a thorough examination of the body of existing literature and the regulatory framework.

### RESULTS AND FINDINGS

#### Comparative Study of The Commodity Characteristics W.R.T Tea, Cotton and Jute

The following paragraphs pertain discussion regarding the nature and extent of characteristics possessed by tea. Comparison of characteristics possessed by cotton (successful future contract) and jute (an unsuccessful future contract) have also been discussed to understand how these characteristics affect the derivative market.

Main Parameter A, Sub Parameter (i) & (ii) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Size / Volume	TEA

- The vigorous production and consumption of the tea beverage is the main driving force behind the ever growing the tea market in India. After China, India is the world's second-largest producer of tea. The country is also a major consumer of the beverage, making up about a fifth of global consumption. The tea market in India is expected to continue to grow at a CAGR of 4.2%. India's tea industry is projected to produce 1.40 million tonnes by 2026.
- Due to the high domestic consumption, the country's exports had relatively moderate annual growth. In India, domestic consumption accounts for around 80% of total output. In 2019-20, India's tea exports reached their greatest level in almost four and a half decades.
- Over three-fourths of the industry in India is located in the northern region, which is the pre-dominant region of tea production in the country. West Bengal and Assam are the two states that produce the most tea in the nation. The beverages of the Assam and Darjeeling varieties are the most well-known worldwide, according to the region of origin.

Main Parameter A, Sub Parameter (i) & (ii) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Size / Volume	COTTON

- Cotton production and trade is widely spread across the world, with more than 80 nations cultivating the crop. However, its production, consumption and trade are dominated by a few nations.
- The world's four largest cotton-producing countries are China, India, USA and Pakistan. They accounted for nearly 79% of the world's production. The other major producers include Brazil and Uzbekistan.
- The top three consumers of cotton are China, India and Pakistan, which together account for two thirds of the world's consumption, which is estimated around 23.3 MMT. Turkey, Brazil and the USA are the other major consumers.
- India's annual production of cotton has been steadily increasing in the recent years supported by a rise in demand, better genetically modified seeds and improved practices.
- India is the world's largest cotton producer. In India, more than 11.7 million hectares of cotton are grown, compared to 31.2 million hectares worldwide. In India, the cotton sector supports the livelihoods of around 60 million people. Since 2012, the rate of growth in cotton production has gone down ; in 2012 production was 28500 ( thousands of 480 bales) and in 2022 it was 24500( thousands of 480 bales).
- India's total supply and consumption since 2012 to 2022 is increasing and commodity surplus exists. The average rate of commodity surplus from 2012 to 2021 had been 5.33%.
- After agriculture, the cotton textile industry employs the second-largest number of people in the country. It also supports the livelihoods of an estimated 6.5 million cotton growers and has a sizable export market.
- The Demand, Supply and Surplus of Cotton in the last ten years is summarised in the table below

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YEAR	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
<b>TOTAL SUPPLY</b>	40306	43470	42185	40958	41240	41600	37400	40750	48800	40216
<b>TOTAL DEMAND</b>	20750	22750	24500	24250	36460	38800	35900	30000	41616	35500
<b>SURPLUS</b>	19556	20720	17685	16708	4780	2800	1500	10750	7184	4716

Main Parameter A, Sub Parameter (i) & (ii) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Size / Volume	JUTE

- The Jute Industry of India is one of the oldest and most well-known industries. In India, the eastern region states like West Bengal, Assam, Bihar, Orissa, and Andhra Pradesh are the principal jute-producing states. However, due to the greater number of mills, West Bengal is where the Indian jute sector is most dependent. Almost 50% of the raw jute production of India comes from West Bengal alone.
- According to a survey released by the Ministry of Textiles in April 2018, India is the world's leading producer of jute products, making up almost 70% of the total production.
- On average, 800,000 hectares of land are typically used for the cultivation of raw jute and mesta.
- Due to the significant local market demand, almost 90% of the total production of jute is often consumed domestically. The production of jute goods from 2022 to 2023 (through July 2022) was 384.1 lakh tonnes, while from 2021 to 2022, it was 1,080 lakh tonnes.

### HOMOGENEITY

Homogeneity is defined as the property or state of being same or of the same kind throughout. It is essential for the commodity to have this quality in order to be included in the derivatives market. There must be consistency in order to standardise the lots of commodities. Simply said, a commodity is suitable for trading or introduction in the derivatives market if there is a scope of standardisation or homogeneity.

Main Parameter A, Sub Parameter (iii) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Homogeneity / Standardization	TEA

The plantation and processing system of Tea at various stages greatly affect the quality of tea around the world. Systems for production and processing have an impact on quality. The elements and inputs that contribute to consistent quality are not always known, but the fundamental rules of the climate, the soil, and other agricultural aspects in the growing regions are accountable for affecting the quality of the tea. The tea growers are in charge of the initial phase. The maintenance of the garden's clones, which includes the planting of original seeds for the improved biological characteristics of tea bushes and leaves, determines the quality. Following this are procedures like plucking, pruning, and others that later affect the quality of tea. The secondary aspect that affects the quality of the tea is how the tea leaves are processed in the factories. The tea growers supply the tea leaves to the tea producers. Upon transshipment, the produce is weighed in its whole at the door gate, and a sample (between 45% and 60%) of the same is sorted to determine the quality of the lot's fine leaves. The fine leaves are distinguished from the others by having two leaves and one bud. The lot is valued in accordance with the proportion of the same in the sample that is considered to apply to the full lot.

When marketing tea, the factory-packaged tea granules are delivered to the warehouses, and a sample of each is also delivered to the tea brokers in accordance with the various grades. Brokers are pivotal players in the marketing of produce, particularly for sales at auction. They serve as the mediators for tea buyers and sellers. It is the brokers' job to find the ideal buyer and price for the lot. After thoroughly tasting the produced cup, they create a report on the quality of the tea granules to advance the procedure. The major components that are included in that report are **Leaf Appearance, Infusion and Liquor**

Main Parameter A, Sub Parameter (iii) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Homogeneity / Standardization	COTTON

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- Cotton is classified according to the staple, grade, and character of each bale—staple refers to the fibre length; grade ranges from coarse to premium
- Five separate groupings of fiber staple lengths are used to classify cotton. India has the benefit of being able to cultivate all the varieties of cotton, including short staple (20 mm and below), medium staple (20.5 to 24.5 mm), long staple (27.5 to 32.0 mm), and extra-long staple cottons (32.5 mm and above).

Main Parameter A, Sub Parameter (iii) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Homogeneity / Standardization	JUTE

- There are two main varieties in jute, white jute (*Corchorus Capsularies*) and dark jute or tossa (*Corchorus Olitorius*) which are grown in India. Extracted fibres from plants are commercially assorted and graded for trading. Raw jute is classified according to quality of jute and its application. The fine quality white raw jute is graded as W1, W2, W3, -- to W8. The Tossa raw jute is graded from TD1, TD2, -- to TD8. Mesta raw jute is grades as Mesta Top, Mesta Mid, and Mesta Bottom etc. White jute is available in 8 grades. Tossa jute is also available in 8 grades.

Main Parameter A, Sub Parameter (iv) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Durability / Storability	TEA

Tea has a unique shelf life. Tea in sealed packages typically has a shelf life of 12 to 36 months. However, the loose-leaf tea is shorter due to its ease of absorption of external odours and moisture. Black tea has a typical shelf life of 18 months when purchased in bulk and 24 months when purchased in bags. Black tea can be kept in tins or aluminium foil bags for roughly 3 years, and in paper bags for 2 years. Green tea has a shorter shelf life than black tea because it has not fully fermented.

Main Parameter A, Sub Parameter (iv) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Durability / Storability	COTTON

The storage time for Cotton in India is generally not more than a year. This stored Cotton can be susceptible to deterioration in Quality, Grade and Colours. Various Factors contribute to the extent of deterioration. Factors like condition and period of storage, the grade of cotton, atmospheric conditions like rainfall, humidity prevalent during the period, ventilation, prevalence of pests in the godowns, etc

Main Parameter A, Sub Parameter (iv) of Table 1	Sub Parameter	Commodity Under Study
Commodity Fundamentals	Durability / Storability	JUTE

The jute plant yields the jute fabric. The fibres have a rough, textured surface and are incredibly strong.

Main Parameter B, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Global	TEA

- The global market for tea was worth at around 207.1 billion USD in 2020 and is anticipated to grow to 266.7 billion USD by 2025, with a CAGR of 6.6 percent between 2020 and 2025. The rapid increase in world tea production was caused by China, with an output of 2.44 million tonnes, China accounted for 42.6% of global tea production in 2016. More than 35 countries throughout the world cultivate tea. However, only the top seven nations, including India, made about 90% of global tea output. With \$16,362 million in revenue in 2019 and a projected increase to \$26,110 million by 2027 at a CAGR of 9.8% over the forecast period, the green tea category would account for the largest share of the market in terms of revenue. By 2025, it is anticipated that the global tea market will have to grow to more than 318 billion dollars from its estimated worth of over 200 billion dollars in 2020. India, the second-largest producer, had a rise in production of 1.27 million tonnes as a result of favourable weather. (Source - <https://www.alliedmarketresearch.com/tea-market>)

Main Parameter B, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Global	COTTON

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Cotton supports the global textile mills market and the global apparel manufacturing market that produces garments for wide use, which were valued at USD748 billion and 786 billion, respectively, in 2019-20. Furthermore, cotton supports a USD 3 trillion global fashion industry, which includes clothes with unique designs from reputed brands, with global clothing exports valued at USD 1.3 trillion in 2019-20. Cotton represents the main source of livelihoods and revenue for up to 1 billion people, out of which 250 million work in cotton processing and 100 million are farmers who cultivate cotton. Approximately 90% of these farmers grow cotton in less than 2 hectares (ha) of land and are located in developing countries, mainly in Central and West Asia, Southeast Asia, and Africa, including in 30 countries that are considered Low Human Development Countries (LHDCs) under the Human Development Index (HDI). Cotton employs close to 7% of the entire labour force in developing countries. Cotton is an export crop, but its processing takes place largely in the main producing countries, such as China and India, to obtain textiles and clothes. Over the past several years, there has been a global shift in trading cotton yarn and human-made fibres, rather than raw cotton, to increase the value addition of domestic textile industries.<sup>12,49</sup> In 2017, over 30% of raw cotton produced globally—the equivalent of 8.8 million tonnes—was exported and was worth USD13.5 billion.<sup>9,50</sup> The largest exporting countries in 2017 for cotton (raw cotton, cotton yarn, thread and woven fabrics: HS code 52) were China (USD 15.1 billion), the United States (USD 7.6 billion), and India (USD 4.7 billion), while the largest importing countries in 2017 were China (USD 8.6 billion), Bangladesh (USD 5.3 billion), and Vietnam (USD 4.2 billion).

Main Parameter B, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Global	JUTE

In 2021-22, the global jute market generated \$2.7B in revenue, an increase of 4.6% from the previous year. With the exception of logistical expenses, retail marketing expenses, and retailer margins, which will be reflected in the ultimate consumer price, this number represents the combined revenues of producers and importers. Over the period from 2007 to 2019, the market value climbed at an average yearly rate of +1.4%; the trend pattern remained constant, with only small changes being noticed during the review period. The market value climbed by 18% year over year in 2011, which was the year with the fastest growth. The worldwide jute market peaked in that year at \$2.9 billion. From 2012 to 2022, the growth of the global jute market remained at a somewhat lower figure.

India (2.1 million tonnes), Bangladesh (1.4 million tonnes), and Pakistan (91 thousand tonnes) consumed the most jute in 2021-22, accounting for 90% of global consumption. Bangladesh witnessed the highest rate of growth in terms of jute consumption among the major consuming nations from 2007 to 2019, whereas the other global leaders saw varying trends in the consumption data. With a combined 79% share of the global market, India (\$1.2B), Bangladesh (\$899M), and Pakistan (\$70M) had the greatest levels of market value in 2021-22. India (2.1 million tonnes) and Bangladesh (1.6 million tonnes) produced the most jute in 2018-19, accounting for 93% of the world's production. Among the key producing nations, Bangladesh experienced the most noticeable rate of development in terms of jute production from 2007 to 2018.

Main Parameter B, Sub Parameter (ii) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Imports & Exports	TEA

- India is one of the top 5 exporters of tea in the world, accounting for 10% of all exports. India's tea exports were worth US\$ 750.63 million in FY 2021–22. Approximately 96% of all tea exports from India are black tea, making it the most popular kind. Regular tea, green tea, herbal tea, masala tea, and lemon tea are further export variants. Tea and Regular Tea (96%) the other varieties of Tea which are exported out from India are – Green Tea, Masala Tea, Herbal Tea and Lemon Tea. Green Tea makes up around 3.5% of the total tea exported from India. India exports tea to more than 25 countries throughout the world.
- India, during the year 2021-22, exported around 201 million Kgs of Tea. The Total exports during the quarter January – April, 2022 was around 65 million kgs and was valued at USD 215 million, which was significantly a 9% increase in the same period in 2021.

Main Parameter B, Sub Parameter (ii) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Imports & Exports	COTTON

- While USA is the largest exporter of cotton, accounting for over one-third of the global trade in raw cotton, China is its largest importer.
- Cotton is essentially grown for its fibre, which is used the world-over in textile manufacturing.

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- Cotton fibre is one of the most important textile fibres, accounting for around 35% of the total textile fibre used in the world.
- India ranked third in the world in terms of raw cotton exports in 2020, contributing roughly 10.2% of all exports. The exports had a value of US\$6.3 billion in 2020–2021 and US\$9.9 billion from April 2021 to February 2022.
- It represented 2.16 percent of all exports from India in 2020–21 and 2.61 percent from April 2021–February 2022, respectively. According to projections made by the Committee on Cotton Production and Consumption (COCP), India would export 4 million bales of cotton overall in 2021–22.
- By 2025–2026, the Indian government and export development council have established long-term goals for the textile industry, including a rise in productivity from the current level of roughly 450 kg of lint per hectare to at least 800-900 kg.
- India exported cotton to more than 159 nations worldwide in 2021–2022. Exports to Bangladesh, China, and Vietnam together accounted for 60% of all exports from India.

Main Parameter B, Sub Parameter (ii) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Imports & Exports	JUTE

- Over the years, jute and jute products from India have seen tremendous increase in exports. The overall amount of jute exports increased at a CAGR of 9% between 2015–16 and 2020–21. Among the other important jute products exported, yarn exports recorded an increase of 23.1% over the prior year and were valued at Rs. 416.70 crores (US\$ 54 million).

Main Parameter B, Sub Parameter (iii) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Value Chain Participants	TEA

- The distribution of a huge amount of tea in the shortest amount of time and in an organised way is made possible via auction. Each year, public auctions in India account for the sale of more than 80% of bulk packaged tea. Auction takes place amongst five vital stake holders. They are as follows:
  - Auction Organizers – Who Organizes the Auction Process
  - Seller/ Manufacturers- who produce tea,
  - Brokers/ Auctioneer - who value, inspect and auction teas,
  - Buyers - who buy teas.
  - Warehouse keepers – who store Teas

Main Parameter B, Sub Parameter (iii) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Value Chain Participants	JUTE

The major Value Chain Participants of the Jute Industry are as –

- Input suppliers
- Farmers.
- Traders
- Processors/traditional jute goods manufacturers& exporters

Main Parameter B, Sub Parameter (iii) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Value Chain Participants	COTTON

Farmers, cooperatives, government agencies, banks, ginning unit, yarn manufacturers, textiles unit, garments unit are the major stakeholders of the cotton industry.

Main Parameter B, Sub Parameter (iv) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Geographical Coverage	TEA

- Over three-fourths of the industry in India is located in the northern region, which is the pre-dominant region of tea production in the country. West Bengal and Assam are the two states that produce the most tea in the nation. The beverages of the Assam and Darjeeling varieties are the most well-known worldwide, according to the region of origin. About 20% of

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the tea industry is contributed by the Southern Indian region, with the Nilgiris serving as the primary production hub. Despite having a substantially smaller output than North India, the region's industry is supported by the production of high-end, superior-quality cultivars. India produced 1,344.4 million kg of tea overall in FY 2021–22.

- The tea map of India is broadly classified into two broad geographical areas – Northern and Southern. The northern part of India is the biggest producer of Tea accounting to about 80% of the country's annual tea production in 2021-22. The majority of the tea production of North India predominantly comes from Assam and West Bengal. Assam and West Bengal make up the majority of the output in the northern region of India, which produced 83% of the nation's annual tea in 2022. Tamil Nadu, Kerala, and Karnataka are the top three tea-producing states in India, accounting for the remaining 17% of the country's total tea production.

Main Parameter B, Sub Parameter (iv) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Geographical Coverage	JUTE

- The cultivation of Jute in India is mainly confined to the eastern region states - West Bengal, Bihar, Assam, Tripura, Meghalaya, Orissa and Uttar Pradesh. Nearly 50 percent of total raw jute production in India alone figures in West Bengal. Jute thrives best in damp heat, and the climatic conditions prevalent in **West Bengal in India** are well suited for its cultivation.

Main Parameter B, Sub Parameter (iv) of Table 1	Sub Parameter	Commodity Under Study
Trade Factors	Geographical Coverage	COTTON

- Gujarat produces the most cotton in India's Central Zone (which includes the states of Maharashtra, Madhya Pradesh, and others), accounting for 8.516 million bales of the nation's total production.
- About 70% of Gujarat's cotton is produced in Saurashtra, with farmers in Amreli—the state's largest cotton district—playing a significant part. The largest cotton-producing regions of Maharashtra are the Vidarbha districts of Yavatamal, Buldhana, Akola, Amravati, Nagpur, Washim, and Wardha.
- With Telangana producing the most cotton in the Southern Zone and the third-largest amount nationwide (6.587 million bales), the Southern Zone, which includes states like Andhra Pradesh, Karnataka, and Tamil Nadu, is the second-largest cotton producer in the world (bales of 170 kg each).

## EASE OF DOING BUSINESS

The researcher addressed concerns about market controls and practises that might cause the government to take notice/attention and impose limitations. These restrictions on the tea market are looked at in terms of (i) price ceilings, (ii) purchasing at the minimum support price (iii) trading restrictions, and (iv) surplus. The practise of frequently raising price caps and using MSP for procurement would suggest that the market is closely regulated by the government and that any changes or market turbulence will result in meddling on their part. A low surplus and excessive price volatility can both lead to price instability, which can lead to government intervention that influences the future of the derivatives market.

Main Parameter C, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Ease of Doing Business	Price Control & Other Laws	TEA

The Government has been implementing the Price Stabilisation Scheme (PSF) and Plantation Crop Insurance Scheme (PCIS) for Tea since 2003 which came to an end on 30.09.2013. Presently no subsidy scheme is available for stabilisation of prices in tea industry for helping small and medium plantation holders. Tea Board provides support for marketing of produce of small and medium plantation holders through auction centres at Guwahati, Kolkata, Siliguri, Jalpaiguri, Cochin, Coimbatore and Coonoor. Tea Board also provides assistance towards meeting additional transport & handling charges incurred for teas exported through ICD Amingaon, marketing of Packaged Teas of Indian Origin (Brand Support) and participation in international fairs and exhibitions. Under the "Tea Development and Promotion Scheme" of the Tea Board during the XII Plan, the unit cost of replantation including the crop loss for the gestation period is included in the subsidy provided to tea growers. The XII Plan scheme includes provisions of subsidy for replantation, replacement planting, rejuvenation pruning, extension planting, irrigation and mechanisation covering an area of approximately 74,400 ha., including the small holdings. An outlay of Rs.482.90 Cr. is earmarked for the purpose. The scheme aims at increasing production, field productivity and quality of Tea.

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Main Parameter C, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Ease of Doing Business	Price Control & Other Laws	COTTON

The prices of Cotton are subject to government regulations from time to time. Cotton imports are exempt from customs tax and the Agricultural Infrastructure Development Cess, according to the Central Board of Indirect Taxes and Customs (CBIC).

### MAJOR POLICY CHANGES GOVERNING COTTON TRADE

In order to bring down the price of cotton for the benefit of the general public, the Indian government has decided to waive all customs duties on imports of cotton. The entire textile supply chain, including yarn, fabric, apparel, and made-ups, as well as the textile business and customers, would benefit from this exception. The elimination of the 5% Basic Customs Tax (BCD) and 5% Agricultural Infrastructure and Development Cess (AIDC) on raw cotton has been demanded by the industry. Cotton imports are exempt from customs tax and the Agricultural Infrastructure Development Cess, according to the Central Board of Indirect Taxes and Customs (CBIC). This notice came into effect on April 14, 2022, and it will stay in effect until, but not including, September 30, 2022. The removal of the import tax on raw cotton should help the price of cotton in India.

Source: <https://pib.gov.in/PressRelease>.

Main Parameter C, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Ease of Doing Business	Price Control & Other Laws	JUTE

Minimum Support Price for raw jute and mesta is fixed every year to protect the interest of farmers. While fixing prices of different grades, the issue of discouraging production of lower grade jute and encouraging production of higher grades jute are taken into consideration so as to motivate farmers to produce higher grade jute. The Jute Corporation of India (JCI) is the Price Support Agency of the Govt. of India for jute. The minimum support price is fixed by the Govt. on the basis of recommendations of the Commission for Agricultural Costs and Prices (CACP). As per CACP reports, while formulating the agricultural price policy CACP takes into account various factors such as cost of production, overall demand/supply situation, domestic and international prices and effect of minimum support price on general price level.

Main Parameter C, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Risk Management	Seasonality	TEA

Tea must be produced in a climate with moderate temperatures and rainfall. Tea leaves do not sprout in the winter season, thus cold temperature is not suitable for them. Due to the lack of fresh leaves, there is no tea production from the middle of December until the beginning of March. During this period, manufacturers turn to refurbishment and equipment repairs, in order to operate for the entire forthcoming year.

The annual supply season of tea is observed to vary over six time periods when the quality element is taken into consideration. As a result, a stronger seasonality in terms of the quality variation in tea may make it necessary to balance out price variations brought on by supply and off-season. The argument for tea futures trading in the Indian market is supported by this seasonality trait.

Main Parameter C, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Risk Management	Seasonality	COTTON

There are three zones in India, where Cotton is being grown with different sowing and harvesting periods. The harvesting season for Cotton is generally October to September. The table below shows the harvesting and crop cycle of Cotton among all the three Zones.

Main Parameter C, Sub Parameter (i) of Table 1	Sub Parameter	Commodity Under Study
Risk Management	Seasonality	JUTE

Jute is a rainy season crop, sown between month of March to May, according to rainfall and type of land. It is a 100-120 days crop and is harvested from July to September depending upon timings of sowings.



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### DISCUSSIONS

#### Comparative Statement of Criteria Examined Under Sebi Guidelines

PARAMETER	COTTON	JUTE	TEA	REMARKS
<b>FUNDAMENTALS</b>				
<b>SIZE &amp; VOLUME</b>	High (LARGEST)	Medium	High (SECOND LARGEST)	Tea ranks first among the three in terms of Volume
<b>HOMOGENEITY</b>	High	High	Low	<b>MANAGEABLE</b>
<b>DURABILITY</b>	Medium	High	High	Tea ranks first among the three in terms of Volume
<b>TRADE</b>				
<b>GLOBAL</b>	Large	Low Presence	Large	Tea ranks first among the three in terms of Global Presence
<b>EX – IM</b>	High (Largest)	High (2 <sup>nd</sup> Largest)	High (3 <sup>rd</sup> Largest)	Tea ranks second among the three in terms of Export Volume
<b>VALUE CHAIN</b>	Eight major Stakeholders	Four major Stakeholder	Five major Stakeholder	Tea ranks second among the three in terms of Value Chain
<b>GEOGRAPHICAL COVERAGE</b>	All India Coverage	Eastern Region	All India Coverage except Central Region	Tea ranks second among the three in terms of Geographical Coverage
<b>EASE OF DOING BUSINESS</b>				
<b>PRICE CONTROLS</b>	Subject to Govt. Regulations	MSP, Subject to Govt. Intervention	Free from Govt. Intervention	Tea ranks first among the three in terms of Price Controls
<b>OTHER LAWS</b>	Limited	EMPA, MDPS CSAPM	Limited	Tea ranks first among the three in terms of Limited Laws
<b>RISK MANAGEMENT</b>				
<b>SEASONALITY</b>	Medium	High	Medium	Tea ranks second among the three in terms of Price Controls

The demand for tea has shown a consistent increase in both volume and value on the Indian as well as the global market. It has been noted that both in India and globally, the rise of tea production (measured in volume) is greater than commodity products like Jute and Cotton. It is noted that the CAGR of tea has increased more rapidly across the various time periods of 2001–2016, 2007–2016, and 2012–2016. Thus, it appears that the global markets for commodities like tea and cotton have continued to increase. Both the production volume and supply value of the commodities like tea and cotton, have shown constant rise. Given the magnitude of the cotton cash market and the existence of derivatives, there should be a sizable and sufficient cash market for tea as well.

Thus, from the above Table we can see that Tea satisfies almost all the criteria with either first or second rank among the three compared products. Therefore, we can conclude that Tea has the necessary and potential characteristics for introduction in the Commodity Derivative Market of India and progress forward as a successful commodity.

#### SCOPE FOR FUTURE RESEARCH

The current study is limited and sets the background for possible areas of research to be explored in future which are laid down hereunder.

- Similar studies on the potentiality of other commodities for entry in the derivatives market may be undertaken.
- Studies may be carried for other countries to investigate the reason behind the absence of derivative market in tea.
- A study on the grading system, new regulations, seasonality concerning the same with respect to the tea market may be undertaken to establish models, thereby helping the key market players to facilitate cross-hedging even.
- Similar studies may be undertaken on the behavioural aspect of various participants involved in the tea value chain system.

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### ANNEXURES

#### Tea Production by The Top Tea Producing Countries

COUNTRY	2016	2017	2018	2019	2020	Share of Total Production
CHINA	2404.95	2496.41	2610.39	2799.38	2740.00	43.48%
INDIA	1267.36	1321.76	1338.63	1390.08	1257.53	24%
KENYA	473.01	439.86	493.00	458.85	569.54	7.07%
SRI LANKA	292.57	307.72	304.01	300.13	278.49	5.75%
VIETNAM	180.00	175.00	185.00	190.00	186.00	3.33%
INDONESIA	137.02	134.00	131.00	128.80	126.00	2.42%
OTHERS	838.83	843.64	904.18	882.84	855.25	14.99%
TOTAL	5593.74	5718.39	5966.21	6150.08	6012.81	100%

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(Figures in M.Kgs)

YEAR	PRODUCTION	IMPORTS	EXPORTS	Available For Domestic Consumption	Estimated Consumption
2016	1267.36	20.97	222.45	1065.88	965
2017	1321.76	21.12	251.91	1090.97	1059
2018	1338.63	24.92	256.06	1107.49	1084
2019	1390.08	15.85	252.15	1153.78	1135
2020	1257.53	23.40	209.72	1071.21	1135

Fig in (M Kgs)

YEAR	2016 - 17	2017 - 18	2018 - 19	2019 - 20	2020 - 21	2021 - 22
TOTAL SUPPLY	1044.46	1089.07	1119.76	1135.01	1106.99	1169.58
TOTAL DEMAND	973	1066	1090	1116	1145	1168
SURPLUS	71.46	23.07	29.76	19.01	-38.01	1.58

### Country Wise Share of Total Exports From 2016 - 2020

COUNTRY	2016	2017	2018	2019	2020	Share of Total Exports
KENYA	480.33 (26.54%)	415.72	474.86	496.76	518.92	24%
CHINA	328.69 (18.24%)	355.26	364.71	366.55	348.82	18%
SRI LANKA	280.87 (15.58%)	278.20	271.78	289.59	262.73	15%
INDIA	222.45	251.91	256.06	252.15	207.58	13%
VIETNAM	142.00	140.00	130.00	136.00	130.00	8%
INDONESIA	51.46	54.19	49.03	43.11	45.27	3%
OTHERS	300.70	301.73	316.69	319.51	311.45	17%
TOTAL	1806.50	1797.01	1863.13	1903.67	1824.77	100%

### Production And Export Share of Major Producing and Exporting Countries During 2019-20

COUNTRY	PRODUCTION		EXPORT	
	Million Kgs	Global Share	Million Kgs	Global Share
CHINA	2799	45%	367	20%
INDIA	1390	23%	252	13%
KENYA	459	7%	497	26%
SRI LANKA	300	5%	290	15%
OTHERS	1202	20%	499	26%
WORLD TOTAL	6150	100	1904	100

MAJOR COTTON PRODUCING STATES OF INDIA (in Lakh Bales of 170 Kg)				
	2018-19	2019-20	2020-21 (‘000 MT)	2021-22
GUJARAT	88	85	1649	1428
MAHARASHTRA	70	77	1360	1359
TELENGANA	35	51	816	644
KARNATAKA	16	19	400	358
MADHYA PRADESH	23	16	306	323
HARYANA	23	24	383	273
RAJASTHAN	28	26	553	445
ALL INDIA	312	339	6120	5501



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## Development of an E-Book-Based Flexibility Training Model for Karate



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**ABSTRACT:** Sports activities are considered very necessary to maintain body and physical condition amid the convenience offered by technology and science. Currently, one of the most popular sports in Indonesia is karate. However, the lack of sources of information and knowledge about karate training hinders the training process and possible preparation. Therefore, this study developed a very easy e-book-based flexibility training model, which can be applied practically to increase the training power of karate sports. The design of the research model for the development of a flexibility training e-book for karate sports will be carried out using the Borg and Gall development research model. In full, the steps of the Borg and Gall modification development model consist of the following ten steps: 1) preliminary research, 2) planning, 3) initial product development, 4) limited field test, 5) revision of limited field test results, 6) wider field test, 7) broader revision of field test results, 8) operational field test, 9) revision of operational field test results, and 10) dissemination and implementation of the final product. As a result, the effectiveness of using e-books in flexibility training at the Lemkari dojo showed relatively improved post-test results. The results of the pre-test and post-test flexibility through flexiometer tests in large-scale karateka trials in the "very good" category of 32.66%, the "good" category of 67.5%, the "Medium" category of 0%, the less category of 0% and the "ugly" category of 0%. Therefore, the flexibility training e-book for karate at Dojo Lemkari is declared very suitable to be used as a source of material and knowledge about flexibility training for karate sports.

**KEYWORDS:** flexibility karate, E-book, Sport

### I. INTRODUCTION

The rapid development of the times tends to increase the desires and needs of every human being in order to remain productive. One of the fast-paced developments is the transformation of technology and science. Their development occurs simultaneously which can be a tool to facilitate daily activities. On the other hand, sports activities are considered very necessary to maintain body and physical condition amid the convenience offered by technology and science. Sport is a physical activity that contains games and contains struggles with oneself or struggles with others as well as confrontation with natural elements. In addition to maintaining health and physical fitness, sports can be used as an entertaining, fun activity and also an effort to achieve achievements. Currently, one of the most popular sports in Indonesia is martial arts. This is shown by the many types of martial arts spread throughout Indonesia, including karate. Karate martial arts is very loved by the people of Indonesia because it is the best sport that can be done anywhere, anytime, by anyone, no matter the special place, special equipment or the person desired as a partner. Karate martial arts is also growing in Indonesia with many competitions ranging from elementary, junior high, high school and high school as well as regional and national levels.

To achieve achievements in the field of karate, there are four shutter that need to be considered, namely physical, technical, strategic, and mental. A karate fighter needs complete physical condition in order to be able to get higher achievements in addition to mastery of technique, strategy and mental. Components of physical condition include strength, endurance, muscle explosive power or power, speed, coordination, flexibility, agility, balance, accuracy, and reaction. Putra, (2014: 1) stated that some of these physical conditions include body mass, readiness of muscle joints, and body adjustments to be ready to move actively. Suryana and Fitri (2017: 3), said that physical activity is a movement carried out by the muscles of the body and its supporting system. To achieve the readiness of the body in carrying out these movements, good and correct heating is needed according to the procedure. This aims to reduce the risk of injury.

## Development of an E-Book-Based Flexibility Training Model for Karate

In martial sports, the physical aspect is one of the factors that determine the success of athletes. One of the main biomotor component aspects of karate is flexibility. According to Abdul Alim (2012: 1) Flexibility training is very important to support athletes' performance because flexibility is very influential on other biomotor components. Lack of flexibility is one of the main factors leading to unsatisfactory performance and inefficient technique, as well as the cause of many muscle strains and tears in sports that lead to sports injuries. Furthermore, inadequate flexibility is also the cause of not increasing speed and endurance limiters. With flexibility training, which is increasing the area of movement, it allows a person's speed and agility to improve, even the impact to the point of saving energy use. So athletes can work harder and longer. Unfortunately, there are still many trainers who do not understand the importance of flexibility exercises so that these exercises are rarely done and are not considered important. The cause of the lack of flexibility in karate training, novice athletes find the movements made difficult because they are not familiar with the movements and lack of flex exercises when warming up.

In some club's karate training is not even taught due to limited time, place, facilities and infrastructure as well as limited knowledge of teachers or trainers related to karate knowledge and also flexibility training models. Judging from the existing problems, so students and teachers and trainers need a flexibility training model that can later be used as a source of independent learning, training flexibility for students so as to make it easier to perform movements in karate so as to increase performance and can reduce the risk of injury when doing learning activities or exercises. With the availability of a flexibility training model that suits the needs of students, it is expected that learning and training will take place effectively and efficiently.

The lack of understanding and ability of coaches to be able to train the flexibility of their athletes properly and correctly so that the flexibility training model trained is only limited and monotonous and is one indication of the lack of quality of karate athletes. Because there are still a lack of sources of information and knowledge that explain about it. Actually, there have been many books that explain various ways to train flexibility in general, but there are still few books that explain how to train flexibility for karate martial arts. There are several sources of information and knowledge around practicing flexibility in general, but it can be difficult for the public to access.

Based on the above thinking, our researchers offer a promising solution, one of which is to increase the source of knowledge and information about flexibility training models for karate in the form of teaching products or exercises packaged in the form of E-books. The e-book-based approach method is considered necessary because it facilitates access for all users with the e-book content offered is relatively easy to understand and practice. This e-book can later be enjoyed and learned by all circles. This e-book comes with examples of flexibility training models for karate. Furthermore, the unu method uses easy-to-understand language that is interesting and easy to learn. Therefore, it is important to conduct research and development to create these products and be able to overcome existing problems.

## II. MATERIAL AND METHODS

The type of research used is Research and Development (Research and Developmet), this research is oriented to the product being developed. In this development research, the product developed is an E-book-based Flexibility Training Model for Karate. This study is more focused on producing a learning resource for coaches and athletes in the form of an E-book entitled E-book-based Flexibility Training Model Guide for Karate Sports. The design of the research model for the development of a flexibility training e-book for karate sports will be carried out using the Borg and Gall development research model. In full, the steps of the Borg and Gall modification development model consist of the following ten steps: 1) preliminary research, 2) planning, 3) initial product development, 4) limited field test, 5) revision of limited field test results, 6) wider field test, 7) broader revision of field test results, 8) operational field test, 9) revision of operational field test results, and 10) dissemination and implementation of the final product.

Research Subjects, This development research, classifying test subjects into several parts such as (i) small group test subjects were carried out on 15 people consisting of 1 (one) coach and 14 (nine) athletes who participated in routine training at the Lemkari Karate Club private dojo and (ii) large field trial subjects were carried out on 25 people consisting of 3 (two) coaches and 22 (eighteen) athletes who participated in routine training at the Lemkari Dojo Kepahiang regency, Then 30 people from Dojo Lemkari Rejang Lebong. Data Collection Techniques In the data collection process carried out in this study, researchers used two techniques, namely preliminary study instruments and model development instruments and field trials. Data Analysis Techniques, Analysis of the data from the expert team's validation questionnaire using the following steps: (1) summing the scores obtained from each category, (2) determining the score categories as specified, and (3) entering the scores into the following formula:

$$P = \frac{F}{N} \times 100 \%$$

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Information:

P = Percentage score

F = Number of scores obtained

N = Maximum number of scores

### III. RESULTS AND DISCUSSION

Small-scale trials were carried out at the Dojo lemhari kepahiang, for four weeks or sixteen meetings according to the training schedule at the Dojo. Based on the figure above, the results of small-scale trials obtained excellent results regarding the use of flexibility exercise E-books. This is evidenced by the percentage data of 89.33% being on the criteria of strongly agreeing, 10.67% being on the criteria of agreeing, while the criteria of enough, disagree and very disagree by 0%. In addition, an analysis of the effectiveness of the use of E-books on flexibility is also carried out. The results of the karateka flexibility exercise based on the increase in the average pre test and post test based on the assessment criteria obtained data as shown below.

**Table 1. Pre test data results of small-scale flexiometer trials**

Category	Range (cm)	Frequency	Percentage (%)
Very good	>24	0	0
Good	18-23	8	53,33333333
Keep	12-17	7	46,66666667
Less	6-11	0	0
Very less	1-5	0	0

Based on the above, it can be seen in the "very good" category by 0%, the "good" category by 0%, the "Medium" category by 92%, the less category by 8% and the "less once" category by 0%. Meanwhile, for the acquisition of post test data, namely:

**Table 2. Post-test data results of small-scale flexiometer trials**

Category	Range (cm)	Frequency	Percentage (%)
Very good	>24	7	46,66666667
Good	18-23	7	46,66666667
Keep	12-17	1	6,66666667
Less	6-11	0	0
Very less	1-5	0	0

Berdasarkan Tabel diatas, dapat dilihat pada kategori "baik sekali" sebesar 46%, kategori "baik" sebesar 47%, kategori "sedang" 7%, kategori kurang sebesar 0% dan kategori "kurang sekali" 0%. Dengan pemberian latihan fleksibilitas sesuai dengan komponen latihan yang dibutuhkan diperoleh data hasil post-test relatif lebih besar daripada data pre-test. The results of small-scale trials obtained excellent results regarding the use of flexibility exercise E-books. This is evidenced by the percentage data of 89.33% being on the criteria of strongly agreeing, 10.67% being on the criteria of agreeing, while the criteria of enough, disagree and very disagree by 0%. Then with the results of the pretest and post test on a small scale showed increased results from 16.9% to 22.13%, so that the effectiveness of the e-book can be continued to the next stage, namely large-scale or operational tests.

After small-scale trials or wider field trials at the lemhari dojo, then large-scale trials at two dojos, namely the lemhari kepahiang dojo and the rejang lebhari dojo. As for the data obtained from the following large-scale trials. that the results of large-scale trials also provide excellent implementation results and even increase from small-scale trial trials, with data acquisition 90.89% are in the category of strongly agree, 9.10% are in the category of agree, while the category of sufficient, disagree and very disagree by 0%. In addition, the effectiveness of the use of E-books on the flexibility of karateka who practice at the dojo is also reviewed in detail. The results of the karateka flexibility exercise based on the average increase in pre test and post test based on the assessment criteria were obtained.

**Table 3. Increased average pre test and post test scores of karateka flexibility.**

Sample	Pre tests	Post test	Average score increase
Club SK	16,93	22,13	6,8
Club 1 SB	18,2	23,86	5,66

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<b>Club 2 SB</b>	13,48	22,48	9
<b>Total</b>	16,20	22,82	7,15
<b>Information</b>	Good	Good	Increased

Meanwhile, the level of flexibility of karate is also evidence of the effectiveness of using E-book flexibility exercises in this study with the acquisition of pre-test and post-test data shown in Table 4.

**Table 4. Pre-test data results of large-scale flexiometer trials**

Category	Range (cm)	Frequency	Percentage (%)
<b>Very good</b>	>24	0	0
<b>Good</b>	18-23	23	41,81818182
<b>Keep</b>	12-17	26	47,27272727
<b>Less</b>	6-11	6	10,90909091
<b>Very less</b>	1-5	0	0

With results seen in the "very good" category by 0%, the "good" category by 4%, the "medium" category by 47%, the less category by 11% and the "bad" category by 0%. Meanwhile, the acquisition of post-test data is summarized in Table 5.

**Table 5. Post-test data results of large-scale flexiometer trials**

Category	Range (cm)	Frequency	Percentage (%)
<b>Very good</b>	>24	19	34,55
<b>Good</b>	18-23	36	65,45
<b>Keep</b>	12-17	0	0,00
<b>Less</b>	6-11	0	0,00
<b>Very less</b>	1-5	0	0,00

The following results are seen in the "very good" category by 35%, the "good" category by 65%, the "medium" category by 0%, the less category by 0% and the "less once" category by 0%. The results of the karateka flexibility exercise based on the increase in the average pre test and post test Club 1 and 2 based on the assessment criteria obtained data as shown in Table 6.

**Table 6. Increased average pre test and post test scores of karateka flexibility.**

CLUB	Pretest (%)	Posttest (%)	Average score increase (%)
<b>1</b>	18,2	23,86	5,66
<b>2</b>	13,48	22,48	9
<b>Information</b>	15,84	23,17	<b>Increase</b>
	<b>good</b>	<b>good</b>	

The increase in the results of large-scale trials shows that E-book flexibility exercises for karate sports have a good effect on increasing the flexibility of karateka. The "medium" category has not increased from 47% to 0%, the "good" category from 42% to 65%, while for the "very good" category from 0% to 35%.

## IV. CONCLUSION

Based on the results and discussion described above, the effectiveness of using e-books in flexibility training at the Lemkari dojo showed relatively improved post-test results. The results of the pre-test and post-test flexibility through flexiometer tests in large-scale karateka trials in the "very good" category of 32.66%, the "good" category of 67.5%, the "Medium" category of 0%, the less category of 0% and the "ugly" category of 0%. Therefore, the flexibility training e-book for karate at Dojo Lemkari is declared very suitable to be used as a source of material and knowledge regarding flexibility training.

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## Social-Emotional Learning and Social Dimensions of Pre-Service Teachers



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**ABSTRACT:** In today's inclusive and diverse society, students' first exposure to diverse backgrounds, opinions, and skills occurs in the classroom. Social-emotional learning (SEL) aims to help individuals understand their ideas and feelings, become more self-aware, and build empathy for others to assist all students to be successful. It is the teacher's responsibility to raise concerns and affection for students and to attend to their needs and feelings. Pre-service teacher preparation is training and development that teachers get before they start their teaching career as role models for their students and to help them become part of a collaborative and supportive learning community. This research discusses the level of social-emotional learning and the social dimension of pre-service teachers and analyzes its relationships. In this study, descriptive correlational research was used. A research-made survey questionnaire was used as the research instrument. The following are significant findings of the study: Pre-service teachers' levels of social-emotional learning in terms of self-awareness, self-management, social awareness, relationship skills, and responsible decision-making are highly competent. Pre-service teachers' levels of social dimensions in terms of belongingness at school, social learning experiences, and relationships with teachers, peers, and parents are highly competent. The research reflects that it is possible to integrate SEL in a classroom setting considering classrooms as the central location of learning where the students spend the majority of their time.

**KEYWORDS:** Pre-service Teachers, Social-Emotional Learning, Social Dimensions.

### I. INTRODUCTION

In today's inclusive and diverse society, students' first exposure to diverse backgrounds, opinions, and skills occurs in the classroom. Schools, particularly teachers, play an important role in these eventual responsibilities. To mold their students into a cohesive and supportive learning community, teachers must display personal attributes that will allow them to be good models and socializers. The teacher shows concern and affection for students, attends to their needs and feelings, and socializes them to integrate these characteristics into their interactions with one another. When developing classroom exhibits and producing content throughout lessons, the teacher must connect with and expands on the student's previous knowledge and experiences, including their home cultures (Aliazas & Chua, 2021). By bringing the learning community outside of the classroom, the teacher builds and keeps working relationships with parents and encourages them to be involved in their children's education.

According to Herrenkohl et al. (2014), social-emotional learning (SEL) is becoming more widely recognized as an important component of every student's education. Students must master social and emotional skills to cultivate a sense of well-being, resilience, and mental health. Students learn to detect, interpret, and control their own emotions as well as develop empathy for the emotions of others, allowing them to make responsible decisions, solve issues, overcome hurdles, and build positive connections. Furthermore, social and emotional learning (SEL) helps students stay focused on their work while also feeling more involved and connected to their education. Social and emotional development is just as important as other parts of the curriculum because it teaches skills that can be used in all parts of life. While social-emotional learning (SEL) is becoming increasingly popular, it is not new. SEL has a long history that dates back decades (Deluna, 2017; Osborne, 2017). Generally, SEL pertains to a method that helps students improve their ability to deal with themselves, with other people, and with ideas (Weissberg et al., 2015).

Teaching, according to Hallman and Rodriguez (2015), is a complicated and continuing process in which preservice teachers have several opportunities to study and analyze during field experiences in formal and informal educational contexts, such as community-based settings. According to Guillen and Zeichner (2018), teachers can help preservice teachers bridge the gap

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between theory and practice while working in contexts outside of traditional educational settings. Pre-service teachers must take part in hands-on learning that puts them in situations different from those they were in as students.

Pre-service teachers have the opportunity to "conceptualize their learning and the learning of their pupils in fresh ways" when they work in community-based settings (Hallman & Rodriguez, 2015). It has led to much discussion about how pre-service teacher education programs can best prepare teachers to succeed in the classroom. It includes educators, policymakers, and the public. Pre-service teacher preparation is the education and training teacher candidates get before they work as teachers. This education usually takes place in a college or university setting, where state-level requirements set out a program of coursework and experiences for becoming a teacher.

Given the context of these assertions, this research focused on determining whether pre-service teachers have knowledge and competencies regarding social-emotional learning (SEL) and social dimensions of well-being. The study also aimed to provide pre-service teachers with information and awareness concerning the said variables. In that case, the researchers analyzed the relationship between social-emotional learning competencies (SEL) and social dimensions of the well-being of pre-service teachers.

### II. THEORETICAL AND CONCEPTUAL REVIEW

The study focuses on the level of social-emotional learning and the social dimension of the well-being of pre-service teachers. This study was based on the sociocultural learning theory developed by Lev Vygotsky

According to Vygotsky's (1978) theory, during interactions with a peer or a trusted adult, students learn most effectively through empathy and the capacity to articulate their thoughts and feelings. His sociocultural learning theory asserted that deep learning, in which students fully comprehend and apply concepts, would be impossible if this fundamental structure were not present in the learning environment. As a result of this foundation, children's language and thoughts are linked to their peers, and this relationship serves as the foundation for social interaction and learning (SEL). Sociocultural learning is founded on the notion that social experiences are necessary components of learning and viewing the world. Also, according to Vygotsky's sociocultural learning theory, students' interactions and social behaviors are essential to acquiring literacy ideas. It affects students' motivation to communicate, participate in the learning process, and actively engage or disengage in tasks that require them to demonstrate their abilities (Allahyar & Nazari, 2012).

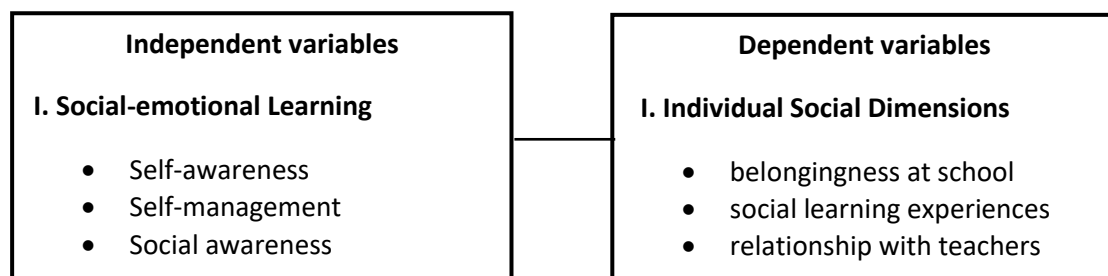


Figure 1. Research paradigm

Figure 1 depicts the research paradigm created by the study's researcher utilizing dependent and independent variables. The independent variable of the study is the components of social-emotional learning, which include (1) self-awareness, (2) self-management, (3) social awareness, (4) relationship skills, and (5) responsible decision-making. The dependent variable of the study is individual social dimensions, which include (1) belongingness at school, (2) social learning experiences, (3) relationship with teachers, (4) relationship with peers, and (5) relationship with parents.

This study aims to determine the relationship between the social-emotional learning (SEL) and social dimensions of Pre-Service Teachers. Specifically, it sought to answer the following questions:

1. What is the perceived level of Social-Emotional Learning (SEL) of pre-service teachers in terms of self-awareness, self-management, social awareness, relationship skills and responsible decision-making?
2. What is the perceived level of Social Dimensions of pre-service teachers in terms of Belongingness at school, social learning experiences, relationship with teachers, relationship with peers, and relationship with parents?
3. Is there a significant relationship between the Social-Emotional Learning (SEL) and Social Dimensions of Pre-Service Teachers?

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### III. METHODOLOGY

The study used a Descriptive-Correlational research design to discover the relationship between the social-emotional learning competencies and social dimensions of the well-being of pre-service teachers.

Respondents of the Study. The researchers used simple random sampling as a sampling method for this study to choose a sample from a larger population. The researcher randomly selects a subset of participants from a population. Every part of the population has an equal chance of being chosen. The sample population of the study was sixty (60) Pre-Service Teachers.

The research instrument that was utilized in this study is a researcher-made questionnaire. The first part is the profile of the respondents. It includes the name (optional), sex, year, and course. The second part determined the perceived level of social-emotional learning (SEL) among pre-service teachers. The researchers used a Likert scale with a four-point scale and verbal interpretations ranging from "strongly disagree" (incompetent) to "strongly agree" (highly competent). The questions were based on a review of related literature. The third part determined the perceived level of social dimensions among pre-service teachers. The researchers used a Likert scale with a four-point scale and verbal interpretations ranging from "strongly disagree" (incompetent) to "strongly agree" (highly competent). The questions were based on a review of related literature. The instrument was revised based on the suggestions of external validators. It was then subjected to pilot testing for evaluation. In the second and third parts, Cronbach's alpha was used to determine the internal consistency and reliability of the instrument. The research adviser approved the revised research instrument after reviewing the researchers' revision, and the researchers began conducting research.

The following techniques were taken into account when conducting the research. Permission from the Dean of the College of Teacher Education in LSPU-SPCC has been sought before administering the research questionnaires. Since the pandemic is still in effect, the researcher used Google Forms to conduct the survey questionnaire. The respondents were randomly selected and received a google form link to the research survey. The purpose of the study was explained and indicated on questionnaires to the respondents for the assurance of their answers' validity. The survey was conducted and taken in the participation of a specific number of respondents that are needed. After conducting the survey, the researchers were able to draw out findings and a summary of the ratings per question using the specific scale in analyzing the results.

The following statistical tools were used to treat the gathered data, which served as bases for analyzing and interpreting data.

- Descriptive statistics were utilized to describe, summarize, and characterize the perceived level of social-emotional learning (SEL) and social dimensions among pre-service teachers.
- The means and standard deviations were used to determine the responses of the respondents in the second and third parts of the questionnaire.
- Pearson's Correlation Coefficient was utilized as the statistical treatment to investigate the relationship between pre-service teachers and social-emotional learning and social dimensions of well-being.

### IV. RESULTS AND DISCUSSION

**Table 1. Social-Emotional Learning (Sel) Of Respondents In Terms Of Self-Awareness**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I am fully aware of what I am thinking and doing.	3.73	0.45	Strongly Agree
I am aware of the reasons behind my actions.	3.75	0.44	Strongly Agree
I am aware of my moods and emotions.	3.70	0.46	Strongly Agree
I can do self-observation	3.67	0.51	Strongly Agree
I accept my strengths and weaknesses as part of who I am	3.82	0.39	Strongly Agree
I can internalize my behaviors, intentions, and patterns.	3.67	0.51	Strongly Agree
I know the way my mind works when I work through a problem.	3.67	0.51	Strongly Agree
Overall	3.71	0.32	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 1 displays the respondents' perceived level of social-emotional learning in terms of self-awareness. The level of social-emotional learning in terms of self-awareness is perceived by the pre-service teachers as highly competent. It implies that the respondents show an exceptional understanding of one's feelings, beliefs, and values and how they influence conduct in various situations. As a result, developing self-awareness is essential for pre-service teachers because it can assist and support them in their future teaching. The concept of self-awareness is important for teachers' professional lives because how they experience,

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make sense of, interpret, and place themselves in their profession helps them understand and recognize themselves, molding and growing their professional lives. Self-awareness is an important component of social and emotional learning in the classroom. Self-awareness allows people to see not only their difficulties but also their strengths. Students must be self-aware to succeed. Teaching self-awareness enables students to have a fundamental belief in their potential to attain a goal, and this trait enables them to succeed (Panergayo et al., 2023). Moreover, the finding of the result is supported by the study Shaffer (2018), which shows that adult and student self-awareness is essential for healthy and integrated identity development. In addition, according to Saito and Sullivan (2011), recognizing one's strengths, preferences, and values are critical components of positive youth development and assisting students and adults in effectively participating in community activities.

**Table 2. Social-Emotional Learning (SEL) of Respondents in terms of Self-management**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I can stay calm even when things are stressful.	3.17	0.59	Agree
I set goals for myself and keep track of my progress.	3.45	0.62	Strongly Agree
I usually think before I act.	3.38	0.61	Strongly Agree
I always have enough time to meet all of the deadlines.	3.30	0.70	Strongly Agree
When I'm upset with someone, I'll wait until I've calmed down before approaching them about the issue	3.47	0.60	Strongly Agree
As soon as I see a problem or challenge, I start looking for possible solutions.	3.58	0.50	Strongly Agree
I can accomplish the goals I set for myself.	3.63	0.49	Strongly Agree
Overall	3.43	0.40	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 2 presents the distribution of pre-service teachers as to their perceived level of social-emotional learning in terms of self-management. It can be noted that the level of social and emotional learning in terms of self-management among pre-service teachers was determined to be highly competent. It demonstrates that the respondents are exceptional at understanding and regulating their thoughts, feelings, and actions to accomplish one's goals. Self-management skills are essential for people who want to become teachers, and learning how to manage themselves can help them a lot as they prepare to teach. Likewise, self-management is an important component of effective teaching and learning. It is the ability to control one's stress and impulsive behavior while encouraging oneself to achieve a specific objective. Pre-service teachers are trained to have self-reliance and independence; they are trained to have management strategies to keep students organized, orderly, focused, attentive, on task, and academically productive during a class (Panergayo & Aliazas, 2021). The pre-service teacher's ability to use self-management strategies effectively is a skill that becomes very important for success as children grow into adulthood and build professionalism. Self-management is used to teach students how to do things on their own and how to keep track of and reinforce their behavior. Teachers must complete numerous activities daily. While one of these roles is undoubtedly classroom management, students should be encouraged to take the initiative in managing classroom learning. Teaching students to self-manage enables them to cultivate a growth mindset, learn how to manage stress and impulsivity, and is what intrinsically drives them to achieve certain goals. Furthermore, Darling-Hammond et al. (2020) concluded that when people of all ages practice self-monitoring, adapting, and expressing their emotional responses and behaviors in authentic, respectful, and productive ways, they can develop stronger relationships, enhance their mental health, and engage in less risky behavior.

**Table 3. Social-Emotional Learning (SEL) of Respondents in terms of Social Awareness**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I can tell how people are feeling by looking at their facial expressions.	3.37	0.61	Strongly Agree
I am sensitive to other people's emotions, needs, and sufferings.	3.53	0.65	Strongly Agree
If someone is sad, angry, or happy, I think I can figure out what they are thinking.	3.17	0.72	Agree
I understand why people react in specific ways.	3.42	0.59	Strongly Agree
If a friend is upset, I always know what's wrong with them.	3.25	0.63	Agree

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I understand and appreciate the feelings of others.	3.60	0.49	Strongly Agree
I am concerned about what happens to others and can empathize with them.	3.58	0.50	Strongly Agree
Overall	3.42	0.43	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 3 reveals the perceived level of social-emotional learning of the respondents regarding social awareness, which is seen as highly competent. It asserts that the respondents show exceptional understanding in recognizing and empathizing with the viewpoints of others, regardless of their origin, culture, or environment. Dealing with different kinds of people every day requires teachers to acquire new knowledge and skills in an attempt to ensure they are prepared to teach all children effectively. Pre-service teachers are practiced and prepared for linguistic and cultural diversity in classrooms and are enabled to facilitate learning across the curriculum, regardless of learners' diverse backgrounds. Pre-service teachers can also learn a lot from being aware of different social aspects as they prepare for their careers as teachers. Teachers are expected to have extensive knowledge of social awareness before adopting these skills in the classroom. One of the goals of teachers is to increase students' social awareness. Social awareness is an important ability to acquire since it addresses many of the social concerns that students face in school, and it is a teachable idea that, when employed in the classroom, students can begin to make a good difference in their environment. Thus, according to LaRocca (2017), social awareness is the ability to put oneself in the shoes of someone from a different cultural or racial background and act in an ethical and empathic manner in one's home, school, and community. Moreover, Spinrad and Eisenberg (2009) stated that intellectual engagement and success can be linked to children's and adults' social awareness. People with compassion develop strong interpersonal skills, like being able to see things from other people's points of view, and they can get along better with their peers (Aliazas et al., 2022).

**Table 4. Social-Emotional Learning (SEL) of Respondents in terms of Relationship Skills**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I always listen to other people's ideas and suggestions	3.73	0.45	Strongly Agree
I know how to show respect for someone else's beliefs.	3.75	0.44	Strongly Agree
I will always apologize if I unintentionally harm a person.	3.68	0.50	Strongly Agree
I always start talking to people and making friends with them.	3.47	0.68	Strongly Agree
It is easy for me to communicate my thoughts to another person.	3.33	0.82	Strongly Agree
I value a good relationship with others	3.83	0.38	Strongly Agree
I am good at keeping relationships that are healthy and favorable.	3.67	0.48	Strongly Agree
Overall	3.64	0.37	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 4 displays the results for the perceived level of SEL among the respondents regarding relationship skills. The perceived level of social-emotional learning regarding relationship skills of pre-service teachers is highly competent. It demonstrates that the respondents show exceptional understanding when establishing and maintaining positive relationships with individuals and groups. Moreover, relationship skills are essential for personal and professional success. To accomplish their job effectively, teachers must build and maintain strong relationships, be excellent communicators, and know how to speak to a diverse range of people. They must be able to communicate with both parents and students. To be an effective teachers, educators must understand how to connect and communicate with others. Everyone benefits from good relationship skills and effective communication. It aids in the improvement of relationships, the expansion of understanding, and the modeling of constructive interactions. This skill is essential for both professional and academic success. Pre-service teachers can learn a lot from developing their relationship skills and must also work on their interpersonal skills as they prepare for their teaching careers. This finding is supported by Osher et al. (2020) and Roehlkepartain (2017), who stated that relationship skills are essential for positive development, school engagement, and success in both students and adults. Positive, nurturing relationships with adults are necessary for the healthy and holistic development of all children and adolescents. Warm, caring relationships in which educators hold students to high standards and appropriately challenge them to grow contribute to a stronger connection to

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school and improved academic performance. Moreover, according to Roorda (2011), the quality of teacher-student relationships influences students' participation, behavior, and long-term academic success.

**Table 5. Social-Emotional Learning (SEL) of Respondents in terms of Decision Making**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I examine the scenario's negative and positive side before making a decision.	3.57	0.53	Strongly Agree
I know I am responsible for the consequences of my actions when I make decisions.	3.65	0.48	Strongly Agree
I ensure that there are more positive outcomes when I make a choice.	3.58	0.53	Strongly Agree
I think about the preferred criteria before I make a recommendation.	3.42	0.56	Strongly Agree
I think about its strengths and weaknesses before I decide to use the strategy.	3.58	0.50	Strongly Agree
I remain calm when I have to make decisions very quickly.	3.40	0.59	Strongly Agree
I make my own decisions regardless of what others think.	3.48	0.60	Strongly Agree
Overall	3.53	0.40	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 5 provides the results for the perceived level of SEL concerning the respondent's responsible decision-making. The level of social and emotional learning regarding making responsible decisions of pre-service teachers is seen as highly competent. It demonstrates that the respondents are thoroughly developed and make wise decisions about their own and others' conduct in various situations. As part of their preparation, pre-service teachers could benefit from making responsible decisions to improve their decision-making abilities. Additionally, a teacher plays a vital role in teaching students the decision-making process. Teachers must recognize the importance of assisting their students in developing effective decision-making skills. Implementing responsible decision-making is significant because it develops students' ability to make positive choices about how they think and behave. Students will be on the right path if they can solve their own difficulties and make appropriate judgments. Winterich et al. (2013) agree with this result; they say that both students and adults need to be able to make responsible decisions.

**Table 6. Social Dimensions of Respondents in terms of Belongingness at school**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I feel like I'm a part of the school community.	3.57	0.56	Strongly Agree
I have a lot of friends at school.	3.35	0.66	Strongly Agree
I enjoy participating in school organizations' projects and programs.	3.37	0.61	Strongly Agree
I am always up to date on the latest announcements from the schools.	3.27	0.63	Strongly Agree
I am aware of all the rules and regulations at my school.	3.53	0.57	Strongly Agree
I encourage others to get involved in school activities.	3.33	0.63	Strongly Agree
I can be myself at school.	3.55	0.62	Strongly Agree
Overall	3.42	0.47	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 6 reveals the results for the perceived level of social dimensions of the respondents in terms of belonging at school. The level of social dimensions in terms of belongingness at school among pre-service teachers is seen as highly competent. It asserts that the respondents have an exceptional understanding of belonging to a group, clearly feel accepted and liked by others, and

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feel linked to others in the school community. Additionally, schools must improve all students' sense of belonging by emphasizing the value of the teacher-student connection and actively incorporating all students in classroom and school community activities and information. A sense of belonging at school gives students and teachers a sense of security, identity, and community, which promotes academic, psychological, and social progress. Thus, pre-service teachers must develop their engagement and participation in the school community, as they will work there in the future. Furthermore, Finn and Zimmer (2012) demonstrate that increasing a student's sense of belonging in school can boost engagement and achievement. People who feel like they belong at school are more likely to put in more effort and be more motivated.

**Table 7. Social Dimensions of Respondents in terms of Belongingness at school**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I gain a lot of knowledge when I work in a group.	3.60	0.53	Strongly Agree
I like to think about things from different perspectives.	3.70	0.46	Strongly Agree
It gives me great pleasure to see my classmates achieve excellence.	3.73	0.48	Strongly Agree
I am a good listener.	3.62	0.52	Strongly Agree
I find joy in collaborating with my colleagues.	3.67	0.51	Strongly Agree
I enjoy venturing into new experiences and relationships to see what I can learn.	3.75	0.44	Strongly Agree
I am always interested in hearing diverse opinions from different people.	3.77	0.43	Strongly Agree
Overall	3.69	0.38	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 7 shows the results of the perceived level of social dimensions in terms of social learning experiences. The level of social dimensions in terms of social learning experiences of pre-service teachers is seen as highly competent. It reveals that respondents have exceptional comprehension and the ability to communicate with and participate with others to make sense of new ideas. Pre-service teachers can gain a lot from developing and enhancing their social learning experiences, which can benefit their future profession. Hence, according to Finn and Zimmer (2012), the ability to work well with others, listen to others, and acknowledge and celebrate peers' accomplishments is not inborn; instead, it must be learned and practiced.

**Table 8. Social Dimensions of Respondents in terms of Relationship with Teachers**

Indicators	Mean	Std. Deviation	Verbal Interpretation
My teachers consider me an important member of the classroom community.	3.62	0.49	Strongly Agree
I notice how my teachers guide every student in a positive direction for their personal growth.	3.73	0.45	Strongly Agree
I like how my teachers make learning fun.	3.73	0.45	Strongly Agree
I am confident enough in the classroom to take risks without feeling embarrassed.	3.48	0.57	Strongly Agree
When I need assistance, my teachers make an effort to help me.	3.63	0.49	Strongly Agree
I feel connected with my teachers.	3.62	0.52	Strongly Agree
When I have a question about the lesson, I know that my teachers can help me out.	3.65	0.48	Strongly Agree
Overall	3.64	0.37	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 8 illustrates the perceived level of social dimensions in relationships with teachers. The level of social dimensions in pre-service teachers' relationships with teachers is seen as highly competent. It shows that the respondents thoroughly developed

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good relationships with teachers and had classroom environments more conducive to learning. Moreover, building and maintaining relationships with people is optimal for goal achievement. Trust, respect, self-awareness, inclusiveness, and open communication are all required for a healthy professional relationship. Building relationships with teachers can benefit pre-service teachers and help them in their future teaching careers. Besides, Pedler (2018) found that teachers play an essential role in fostering students' sense of belonging by giving them opportunities to express themselves.

**Table 9. Social Dimensions of Respondents in terms of Relationship with Peers**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I always make an effort to comfort my friends when they are sad.	3.67	0.51	Strongly Agree
When my friend and I argue, I try not to criticize them.	3.62	0.52	Strongly Agree
I am always willing to lend a hand to my peers.	3.77	0.43	Strongly Agree
I am mostly interested in working with my peers.	3.62	0.49	Strongly Agree
I don't mind when my friend makes mistakes.	3.18	0.75	Strongly Agree
When I am with my colleagues, I always feel included.	3.48	0.57	Strongly Agree
I have close bonds with my classmates.	3.58	0.53	Strongly Agree
Overall	3.56	0.38	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 9 shows the perceived level of social dimensions regarding relationships with peers. The level of social dimensions in pre-service teachers' relationships with peers is seen as highly competent. It shows that the respondents have exceptional understanding when it comes to building good relationships with others based on mutual trust, cooperation, and a common goal. Peer-to-peer recognition and understanding are the best ways for coworkers to get along and create a good community environment; pre-service teachers must build good relationships with their peers (Javier & Aliazas, 2022). Additionally, Carrie (2012) says that a relationship with a peer is based on trust, cooperation, and a shared interest, and that it can help a person improve their social skills while also making them more motivated and better at what they do.

**Table 10. Social Dimensions of Respondents in terms of Relationship with Parents**

Indicators	Mean	Std. Deviation	Verbal Interpretation
I always feel accepted by my parents.	3.63	0.55	Strongly Agree
My parents motivate me to have trust in myself.	3.65	0.55	Strongly Agree
When I am having difficulties, my parents are there to help me.	3.67	0.51	Strongly Agree
My parents are interested in what I do at school.	3.63	0.49	Strongly Agree
I always make time to spend quality time with my parents.	3.62	0.61	Strongly Agree
I can share my problems or issues in life with my parents.	3.33	0.84	Strongly Agree
I always make sure that I don't disappoint my parents.	3.65	0.55	Strongly Agree
Overall	3.60	0.46	Strongly Agree

**Legend:** 3.26-4.0 Strongly Agree (Highly competent); 2.51-3.25 Agree (Competent); 1.76 2.50 Disagree (Slightly competent); 1.0-1.75 Strongly Disagree (Incompetent)

Table 10 presents the perceived level of social dimensions regarding relationships with parents. Similar to other variables, the level of social dimensions in terms of relationships with parents of pre-service teachers is noted as highly competent. It indicates that the respondents clearly and thoroughly developed strong, loving, positive relationships with their parents. Respondents must have a positive relationship with and communicate with their parents regarding their future careers as educators; parent-teacher relationships are continually significant. Likewise, Currie et al. (2012) explain that those who report frequently communicating with their parents in a caring and practical manner are less likely to experience life difficulties and are more likely to be satisfied with their lives.



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**Table 11. Test between the Social-Emotional Learning (SEL) and Social Dimensions**

Social-emotional Learning	Individual Social Dimensions				
	belongingness at school	social learning experiences	relationship with teachers	relationship with peers	relationship with parents
Self-awareness	.345**	.374**	.361**	.469**	.463**
Self-management	.377**	.379**	.462**	.489**	.544**
Social awareness	.572**	.643**	.515**	.531**	.333**
Relationship skills	.467**	.491**	.458**	.463**	.348**
Responsible decision making	.535**	.504**	.590**	.519**	.406**

\*\* . Correlation is significant at the 0.01 level (2-tailed). \* . Correlation is significant at the 0.05 level (2-tailed).

Table 11 illustrates the correlation between the social-emotional learning and social dimensions of pre-service teachers. The computed r-coefficient in all research variables indicates that all correlations are significant at the level of 0.01 (2-tailed), and the correlation strength is moderate to strong positive association. It can be seen that the results show a significant relationship between social-emotional learning and social dimensions. It implies that when individuals are highly competent in social-emotional learning, they may also be highly competent in social dimensions of well-being, or vice versa. Pre-service teachers' ability to learn and understand how to control their emotions, set and achieve positive goals, feel and show empathy for others, keep good relationships, and make responsible decisions is related to and significant to the quality of their social life or social wellbeing.

Furthermore, the study by Kilgus et al. (2017) proved that social-emotional learning (SEL) helps students improve their social dimensions, specifically their relationships with their peers, families, and teachers, who act as mediators, collaborators, and supporters of academic success. Geneva (2017) demonstrated Social dimensions of well-being focus on connecting with community and people, which includes being aware of one's own social and cultural background as a bridge to understanding the diversity and depth present in other backgrounds. According to Elbertson et al., (2010) and Humphries et al., (2018), positive attitudes and higher perceived knowledge about SEL are required for in-service and pre-service teachers to implement effective SEL in schools.

Therefore, teachers' social and emotional skills are significant in creating a healthy learning environment. Teachers are the driving force behind social and emotional learning (SEL) practices and programs in schools and classrooms, and their students are highly influenced by their social-emotional competence and well-being. Social-emotional learning is important for learners because it teaches them important life skills such as understanding themselves, developing a positive self-image, taking responsibility for their actions, and forming relationships with those around them. Schools can play an important role in allowing students to build better social and emotional awareness and practice interpersonal skills as they study and mature. Schools must adhere to this component of the learning activities for the benefit of all students, including those with exceptionalities because social and emotional aspects play such an essential role in student mental health, behavior, and academic success. Engaging the entire learner fosters good growth, which leads to academic success and exceptional social dimensions.

### V. CONCLUSIONS

Based on the findings presented, several conclusions can be drawn. Firstly, pre-service teachers' ability to learn and understand how to control their emotions, set and achieve positive goals, feel and show empathy for others, maintain good relationships, and make responsible decisions is closely related and significantly impacts their social well-being or social life. This implies that the social-emotional learning (SEL) competencies of pre-service teachers play a crucial role in shaping their overall social functioning and quality of life.

Furthermore, it is evident that social-emotional learning and the social dimensions are essential for pre-service teachers to prevent burnout, enhance their well-being, and establish a structured learning environment that fosters positive interactions among all students. By developing their social-emotional skills, pre-service teachers can effectively manage their emotions, maintain healthy relationships, and create a conducive atmosphere for learning and growth.

Additionally, the levels of social-emotional learning competencies exhibited by pre-service teachers, including self-awareness, self-management, social awareness, relationship skills, and responsible decision-making, are deemed highly competent. This indicates that pre-service teachers possess a solid foundation in these areas, enabling them to effectively navigate social situations and engage with students and colleagues in a positive and responsible manner.

Similarly, the levels of social dimensions concerning belongingness at school, social learning experiences, and relationships with teachers, peers, and parents among pre-service teachers are highly competent. This suggests that pre-service teachers

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have a strong sense of belonging, benefit from meaningful social interactions, and have positive relationships with various stakeholders within the educational context.

Most importantly, there is a significant and positive relationship between social-emotional learning (SEL) and the social dimensions of pre-service teachers. This finding rejects the null hypothesis and supports the notion that social-emotional learning is interconnected with the social dimensions of pre-service teachers. Consequently, efforts to enhance social-emotional learning among pre-service teachers are likely to have a positive impact on their social well-being, social interactions, and overall effectiveness as educators.

In summary, the findings indicate that pre-service teachers' social-emotional learning competencies are closely linked to their social dimensions and have a significant influence on their social well-being. These conclusions emphasize the importance of promoting social-emotional learning among pre-service teachers to improve their overall social functioning, prevent burnout, and create an inclusive and supportive learning environment.

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## Consolidation and Credit Access Risk in Rural Nigeria: Impact Assessment after a Decade of Implementation.



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**ABSTRACT:** This study examines the effect of consolidation of Deposit Money Banks (DMBs) on credit access risk in rural areas of Nigeria after a decade of the consolidation exercise. Secondary data on total value of credits to rural areas was obtained from the CBN bulletin for the period 1994 to 2014. This period includes 10 years of pre consolidation and 10 years of post-consolidation. Mann Whitney U test was used in analysing the data to test for significant difference in the total credit to rural areas before and after consolidation in Nigeria. The result revealed that there was a significant increase in access to DMBs' credit by rural customers of DMBs in the post consolidation era when compared to the pre-consolidation era. The result may be explained by the role of technology in banking. It is recommended amongst others that government should provide infrastructures like good access roads to the rural areas, electricity and support investments in Information and Communication Technology (ICT) in the rural areas as this will encourage the penetration of financial services into the hinterlands.

**KEYWORDS:** Credit risk, Bank consolidation, financial intermediation, Nigeria, Mann-Whitney U test

### 1. INTRODUCTION

The role of banks in the growth and development of nation's economy is vital as they are the major conduit through which economic goals and objective are attained (Koch and MacDonald, 2003; Schargrotsky and Sturzenegger, 2000; Park, 2012; McKinnon and Shaw, 1973; Rose, 2003). This usually informs reforms in the sector to guard against systemic crisis (Hellmann et al. 2000). In 2005, Nigeria initiated the banking sector reforms and the policy objective was a more robust banking system, through the creation of larger banking institutions that could be more effectively supervised. The influence of this policy on access to credit and lending pattern is essential and thus provides the motivation for this study.

There are several studies that seek to proffer solutions to the problem of difficulty in access to bank loans as a result of information asymmetry, such as adverse selection and moral hazard. Empirical studies emphasize the type of credit facilities available, the cost of borrowing (spread), borrowers and their characteristics and most importantly, credit risk (Mora, 2013, Norden and Webber, 2010, Jimenez et al, 2009). A rich body of research has explored the importance of banking infrastructure at the local market level and how it affects economic outcomes in both developing and developed countries (Black and Strahan, 2002; Gilje, Loutskina and Strahan, 2016; Burgess and Pande, 2005; Cetorelli and Strahan, 2006; Kerr and Nanda, 2009; Jayaratne and Strahan, 1996).

Extant literature shows how the characteristics of borrowers affect the performance of a credit facility (Da Silva and Pirtouscheg, 2015; Norden and Weber, 2010). Nevertheless, some empirical studies examine the correlation between banking relationship and lending (Petersen and Rajan, 1994; Berger and Udell, 1995). A study on the effect of consolidation and bank branches closure in the United States showed that consolidation encourages the closure of many bank branches which invariably leads to changes in banks physical networks (Nguyen, 2014). Bank consolidation is concerned with the process of making banks solid, strong, sound and operationally fit to compete favourably within the industry regionally and globally (Di Patti and Gobbi, 2007). It is an agenda to reposition banks to make them more reliable, competent and competitive (Ezeoha, 2007). Nevertheless,

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consolidation enhances the availability of cheaper credit which promotes economic growth and development through the mobilisation of capital for investment (Somoye, 2008).

At the wake of the 1986 structural adjustment programme (SAP) in Nigeria, Community Banks were established in rural areas as licensed by the CBN to ensure financial inclusion of the poor rural dwellers, facilitate poverty alleviation and discourage rural-urban drift through the provision of credit and other banking services (Ayadi, Hyman and Williams, 2008) and about a decade after, the community banking sector in Nigeria collapsed due to low take-off capital, unskilled and inept management which led to high credit risk (Acha, 2012). This saw to the return of the Nigerian banking landscape to the traditional commercial banking (DMBs) at the beginning of the year, 2000 and the introduction of microfinance banking by the CBN (Acha, 2012; Inyang, Flannery & Garvey, 2019). The apriori expectation of the researchers is that consolidation leads to closure of bank branches, which widens bank-borrowers distance and results in financial exclusion of rural customer from access to credits. This implies that there is a significant difference in credit access to rural borrowers after consolidation.

Thus, the aim of this study is to examine the influence of the 2005 consolidation exercise on access to credit in Nigeria. Particularly, we shall focus on access to credit by the rural clients of Deposit Money Banks (DMBs) as the trend of the influence will be better captured by the data from this segment of DMBs clients due to mass closure of rural branches of DMBs after the consolidation exercise which invariably affects bank-customer proximity. In this regards this study specifically examines the difference in the volume of credit access pre versus post the 2005 consolidation exercise. The findings of our study shall inform policy in developing economies viz-a-viz aiding economic growth by promoting financial inclusion. Our choice of Nigeria is quite instructive for two reasons. Firstly, it is an emerging economy where relationship lending thrives (Geršl and Jakubík, 2011; Elsas, 2005). Secondly, the consolidation exercise saw to a great reduction in the number of banks in operation in Nigeria (from 89 to 25 in 2005) and this study is a situation analysis of the pre and post consolidation behaviours. The study will also add up to the body of knowledge in the area of research.

The rest of the study is organised as follows: section 2 provides the review of relevance literature, section 3 is the research methodology, while section 4 presents the result of the data analysis and discussion of the main findings. Section 5 concludes and also states the recommendations.

## **2. REVIEW OF RELATED LITERATURE**

### **2.1 Banking Sector in Nigeria**

Banks facilitate growth and development of any economy by carrying out the financial intermediation role through the provision of credit to customers which in turn stimulates economic activities and Capital adequacy is critical to the actualisation of this responsibility as it is a major determinant of bank stability (Lee and Hsieh, 2013; Okafor, Ikechukwu and Adebimpe, 2010). In 2004, the Central Bank of Nigeria (CBN) evaluated the state of 89 licensed banks in the country using the CAMEL rating and in addition to their finding that 10 banks were sound, 51 satisfactory, 16 marginal and 12 unsound, it was also discovered that Nigerian banks had an average capital position of \$10 million (CBN Bullion, 2005). The CAMEL rating system is based upon an evaluation of five critical elements of a financial institution's operations: Capital adequacy, Asset quality, Management soundness, Earnings, and Liquidity (Dash and Das, 2009). The thresh-hole of some of the critical elements considered in bank soundness assessment by CBN are; a liquidity ratio not less than 30%, capital adequacy ratio not less than 15% in accordance with Basel accord, impressive asset quality and experienced management team (CBN Bullion, 2005)

The publication of the state of Nigerian banks report initiated the 2005 banking reforms exercise which sought to develop larger and more robust banking institutions through consolidation (CBN Bulletin, 2005; Kenn-Ndubuisi and Akani, 2015). The Central Bank of Nigeria, in keeping with its supervisory and regulatory role, introduced what it called the 13-point reform agenda for the Nigerian banking and financial system (Iganiga, 2010) and this programme was announced by the Governor of the apex bank on 6 July 2004. As part of the reform, Deposit Money Banks (DMBs) were to raise their minimum paid up capital from 2 billion Naira to \$25 billion Naira and banks consolidated to meet the new minimum paid up capital (Imeokparia, 2015; Inyang, & Acha, 2019). The reforms were intended to facilitate more effective risk-based supervision of the banking industry by the regulators in order to curtail massive distress of banks in the country as it saw to the shrinking of the total number of banks in Nigeria to 25 in 2005 from 89 in 2004 (Microsystems Report, 2016). Presently, there are 21 DMBs in operation in Nigeria (Cenbank.org, 2016).

In the period since 2008, Banking operations in Nigeria have been affected by the global financial crisis (Inkkaar and Yang, 2012; Fadare, 2011; Felix et al, 2015; Ashamu and Abiola, 2012). The Nigerian economy has been severely affected by falling oil prices, pressure on FX rate and political turbulence in recent time (Worldbank.org, 2016) making investment highly risky and this have exerted pressure on the balance sheet of banks. The situation has equally given rise to macroeconomic challenges in the country trending a persistence rise in inflation rate. Against this backdrop, the CBN has undertaken a number of measures to maintain access to credit and support banking stability (cenbank.org, 2015; cenbank.org, 2016).

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In order to access credit from any commercial bank in Nigeria, the borrower must run a functioning deposit account with the bank, have tangible or intangible collateral as security and fulfil other strict requirements which are sometimes bank specific (Ukoha, 2013; Owenvbiugie and Igbinedion, 2015). Nevertheless, the main sources to credit risk in Nigeria can be identified as limited professional, technical and technological institutional capacity; volatile interest rate; litigation issues; political interference; weak quality of infrastructure; inadequate supervision by CBN and the current slowdown in economic activity (Fund and Bank, 2013; Kolapo, Ayeni and Oke, 2012; Jain, 1999).

Research by EFINA, 2014, shows that 63.9% of Nigerian adults live in the rural areas of the country which is indicative that the country has a large rural population. The report also shows that 25% of the rural adult population of the country have access to bank services, 27.2% have access to financial services from non-bank sources while 47.8% are financially excluded. The non-bank sources include savings clubs, savings pools (locally known as esusu or ajo), money lenders; as well as remittances (through informal channels such as via a transport service or recharge card). These drawbacks notwithstanding, there is a high prospect of growth in the economy of Nigeria if access to credit for investment purposes is made less herculean (Aku, 1986) as the country has been achieving 7% growth each year since 2009 (Fund, 2013; World Bank, 2016;). There are empirical evidences that the growth and development of the Nigeria economy can be accelerated if the rural inhabitants have access to credit to grow the value chain of their agricultural businesses as agriculture is a veritable diversification for the country's economy from crude oil (see; Uzonwanne, 2015; S. Akpan, 2015; Eko et al., 2013). The DMBs in the country have integrated modern banking technology in their service delivery to reduce the stress associated with access to banking services in the country (Oluwatolani, Joshua and Phillip, 2011), but of concern is the achievement of a reasonable level of financial inclusion, which is a panacea for access to credit, and this is what we investigate in this work.

### **2.2. Consolidation and Geographical Distribution of Bank Branches.**

The first strand examines if consolidation affects the location and distribution of bank branches. Consolidation of banks around the globe in recent years is intensifying the public policy debates on the influences of concentration and competition in the banking industry (Berger et al, 2004; Nguyen, 2014; Wheelock, 2011). Bank consolidation implemented through mergers and acquisitions have impacted different clients in varying ways. While some - those without problems of bad credit histories - have benefited from the largeness of the consolidated unit, in terms of increase in product lines and the synergy and spread of evolving technology-based services, a significant number of other individuals are detrimentally affected by this trend as they lack access to the services of the newly consolidated firms since the exercise accelerates closure of some branches (Nguyen, 2014). Wheelock (2011) examining the impact of unassisted merger on banking concentration in America during the period 2007-2010 showed that in general, local banking markets did not become significantly more concentrated during the period considered but that concentration increased remarkably at the level of U.S census region - the metropolitan statistical areas - and the study supported Dick (2006) result on a study of the same region.

Data on the total number of banks and their branches in Nigeria extracted from the CBN statistical bulletin, 2014 presented graphically in Figure 1 above shows that the total number of banks in operation in Nigeria was as high as 90 in 2002 and 2003 and as low as 21 in 2014. The year with the highest number of bank branches in operation in Nigeria was 2010 with 5809 and the lowest in 1998 and 1999 with 2180. It also indicates that the conclusion of the consolidation exercise in 2005, introduced a stop in the classification of bank branches into rural and urban from 2006 as banks had scaled down their branches in the rural areas which equally resulted in over 7.3% decrease in the total number of bank branches in Nigeria in 2006 using 2004 as the base year. Figure 1 also shows a 23% and 41% increase in the total number of bank branches in the country in 2007 and 2014 respectively from 2006 and this reflects an increase in number of urban branches. These increases are made possible by the opening of more branches in the urban areas by DMBs. This is indicative that consolidation affects the geographical distribution of banks in Nigeria as rural branches were non-existence after consolidation but the number of bank branches in the urban area rather increased. This supports the findings of Wheelock (2011) who discovered that consolidation brought about the redistribution of bank branches in America.

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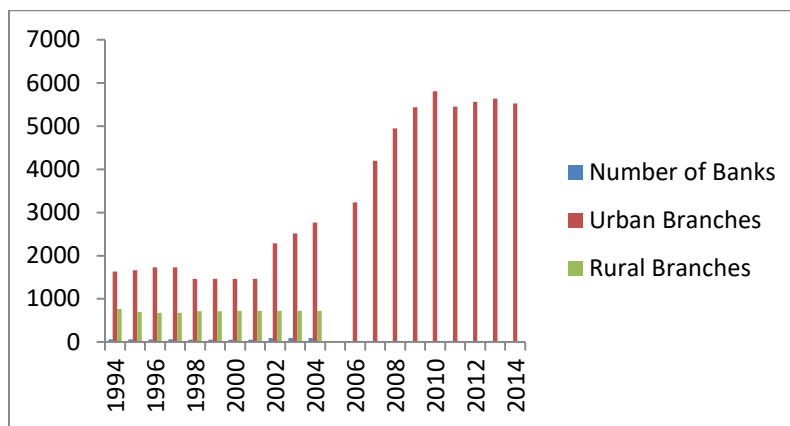


Figure 1. Graphical Representation of Number of Deposit Money Banks (DMBs) and branches in Nigeria from 1994-2014.

SOURCE: 2014 CBN Bulletin.

More so, Research shows that closure of rural branches and the opening of more branches in the city centres by banks is a move towards leveraging on competitive advantage (Berger et al., 2004) and it is opined that this increases the level of financial, social, and economic exclusion of those affected (Nguyen, 2014; Wheelock, 2011). Many consumers continue to rely exclusively on local banks for financial services and evidence suggests that the pricing of banking services, like loan and advances, continues to reflect, at least in part, the structure of local banking markets (Wheelock, 2011). This naturally leads the discussion into the second strand, bank-borrower distance, as the client in the rural area is faced with the challenge of distance to the nearest local branch.

### 2.3. Bank-Borrower Distance and Access to Credit

Analyses on distance, such as those by Jimenez et al, 2009; Degryse and Ongena, 2003; Berger and DeYoung, 2001; Agarwal and Hauswald, 2007 are in two perspectives namely; the physical distance and the organisational distance. The physical distance, considered from the point of view of the borrower, is the proximity between a bank branch and a customer's location (Degryse and Ongena, 2003; Agarwal and Hauswald, 2007). The organisational distance, from the lender's point of view, is the distance between the bank headquarter and the operating branches serving customers in the local market. Considering the fact that decision on loan is a function of information accessibility about the borrower, extant literature show that distance has direct effect on credit approvals (Agarwal and Hauswald, 2007).

Furthermore, the lender-based theories (Inderst and Mueller, 2007) assumes that there are two different banks which are, the local – the one close to the borrower, and the other, the distant – the one far from the borrower. The relevance of this according to the theory is that the local bank has information advantage over the distance bank and Guiso et al. (2004) supports this by showing that there is evidence of information disadvantage in the case of distant lending in a study of Italian banking industry. Boot and Thakor (2000), who consider competition between transaction lenders and relationship lenders, Hauswald and Marquez (2003, 2006), who examine how information technology affects competition between differentially informed lenders, and Almazan (2002) who study the competition in the banking industry based upon the interplay of the level of capitalization of banks and their ability to monitor different types of projects (i.e., their expertise), all conclude that lenders who are located closer to a borrower have better information about the borrower.

Jimenez et al (2009) using credit register database of the Banco de Espana to model the use of collateral as a function of the firm-bank organisational distance, accounting variables, relational lending variables, characteristics of the loan and province bank and time control variables find that organisational distance is a relevant variable in explaining the use of collateral for business loan in two ways. First, the likelihood of the use of collateral decreases with organisational distance and the effects of distance variable on such likelihood are independent of the experience of the bank in the province. Second, the effect of organisational distance on the likelihood of collateral decreases when the accounting variables are included as explanatory variables of the use of collateral. The implication of this empirical evidence is that organisational diseconomies which affects bank as a complex business entity (Berger et al, 2005) plays a major role in banks' lending decision and since organisational distance is a key supply-side factor affecting terms of loan independently of banks having branches in the local market or not, accounting variables can be substituted for organisational distance in collateral decision. This finding is in line with that of Agarwal and Huasewald (2007) that interest rate on loan cannot be empirically explained any longer by bank physical location after soft proprietary information on the credit quality of the borrower is controlled.

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Another significant channel which distant can affect loan transaction is through transportation cost and there are models on uniform loan pricing that focuses on this (see; Chiappori et al., 1995; Freixas and Rochet, 1997). Transportation cost reduces the market for banking services to a relatively small radius around a particular bank branch (Jimenez et al, 2009). This cost can be incurred by the potential borrower as well as the bank. On the part of the borrower, in addition to the cost of travelling to the local branch, such costs is also captured in the time and effort spent by a loan applicant to interact with the bank personnel involved in the loan processing and the time spent in looking for a suitable credit facility (Agarwal and Huasewald, 2007). Banks, on their part, can incur transportation cost in the process of assessing the potential borrower and in loan monitoring and all these have an effect on credit terms and access (Sussman and Zeira, 1995).

The information advantage on the address of a potential borrower that a bank enjoys enable them to engage in spatial price discrimination (Lederer and Hurter, 1986) and this setting shows that interest rate is a decreasing function of bank distance (Hauswald and Marquez, 2006). Owing to this, empirical works have shown that any borrower deemed credit worthy always obtains credit from the closest bank branch and that distance reduces access to credit (Agarwal and Huasewald, 2007; Petersen and Rajan, 1994, 2002; Berger et al., 2005).

### **3. MATERIALS AND METHODS**

#### **3.1. Data**

Secondary data was extracted from the CBN annual bulletin of 2014. Specifically, time series data on annual total credit of DMBs to rural customers in Nigeria from 1994 to 2014 was collated. The period covered was carefully chosen to capture the pre and the post-consolidation eras ten years at par with the year of consolidation captured as part of post consolidation period. Also, the choice of the period, 1994-2014 was informed by the availability of data. The components of the credit are consumer and commercial loans. The data does not include donor agency funding placed with the banks for supervised disbursement for various rural based economic programmes aimed at poverty reduction through productive engagements. Reasons for this are that the terms for accessing such funds are set by the fund owners and they are not part of the credit facilities offered by the channelled DMBs.

#### **3.2. Method of Data Analysis**

Two methods were used to investigate credit access and lending pattern of DMBs to the rural clients considering the pre and post-consolidation eras. First, the percentage variation in credit access in each of the years was estimated. The advantage of this approach is it makes visualization of the result and determines the lending pattern easy. Second a test of difference between the pre and post consolidation periods, using Mann-Whitney U test, a non- parametric statistical test to determine credit access variation and any significant difference between the two periods to enable was equally conducted. Our choice of Mann-Whitney U test is informed by the fact that it is a test of stochastic equality which generates a test of difference outcomes similar to t-test and it is most appropriate when the database does not fulfil the strong assumption of normal distribution (Inyang, Basse & Umunnakwe, 2022). All the observation from both groups of our disaggregated data (pre-consolidation and post-consolidation) are independent of each other and the level of measurement of the data is higher than the ordinal response which equally makes our choice of Mann Whitney U test more appropriate (Nachar, 2008). Also, Mann-Whitney U test is ideal when the sample size per group is small ( $5 < 20$  observations) and the measurement is interval based (yearly) (Inyang, Basse & Umunnakwe, 2022) and these truly describe our data set. One major concern over the use of the Mann-Whitney U test is that the type I error is amplified in a situation of heteroscedasticity but since we are carrying out a test of difference in the mean rank as the data is not normally distributed, this error has been reduced. Kanapickienė and Grundienė (2015), Milenovic (2011), and Deran et al.(2014) are some studies that have used Mann-Whitney U test.

### **4. PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS**

#### **4.1. Credit Access Pattern in the Pre- and Post- Consolidation Periods.**

The data on credit to rural borrowers in the period under consideration is presented in table 1. This data distribution represents three phases associated with bank consolidation in Nigeria; pre-consolidation, consolidation and the post-consolidation years. Within 1994-2014 periods of credit review in Nigeria, 2005 is the year that separates pre and post consolidation DMBs' credit administration. This is the year of consolidation.



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Table 1. Variation in Credit Lending Pattern of Annual Total Credit of DMBs in Nigeria to the Rural Clients

Phases	Year	Amount (N'million) N	Credit access differentials $M = n_{1+i} - n_i$ where; $1 \leq i \leq 20$	Percentage variation in credit lending pattern $P = (M_i/n_i) \times 100$ where; $1 \leq i \leq 20$
Pre-Consolidation	1994	1,602.2	-	-
	1995	8,695.3	7093.1	+81.57
	1996	4,411.2	-4284.1	-49.27
	1997	11,158.6	6747.4	+60.47
	1998	11,852.7	694.1	+5.86
	1999	7,498.1	-4354	-36.73
	2000	11,150.3	3652.2	+32.75
	2001	12,341.0	1190.7	+9.65
	2002	8,942.2	-3398.8	-27.54
	2003	11,251.9	2309.7	+20.53
	2004	34,118.5	22866.6	+67.02
Consolidation	2005	16,105.5	-18013.0	-52.80
Post Consolidation	2006	24,274.6	8169.1	+33.65
	2007	27,263.5	2988.9	+10.96
	2008	46,521.5	19258.0	+41.40
	2009	15,590.5	-30931.0	-66.49
	2010	16,556.0	965.5	+5.19
	2011	19,980.3	3424.3	+17.14
	2012	90,782.0	70,801.7	+77.99
	2013	1495687.5	1495678.5	+99.99
	2014	3475791.14	198013.64	+56.97

Source: Researcher's computation

The data shows yearly total credit of DMBs in Nigeria particularly to the rural clients. There is a deepening in the fluctuation of amounts of credit accessed as depicted by the yearly access differentials and percentage variation in credit lending pattern.

Table 1 reveals that credit lending pattern is quite unstable during the pre-consolidation period resulting in three major declines preceding bank consolidation policy implementation. The reductions and their corresponding years are; 49.27% in 1996, 36.73% in 1998 and 27% in 2001. The year with the highest reduction in credit disbursement is the consolidation year, 2005, with 53.8% and this result is quite rational as banks needed funds to meet up the new minimum paid up capital.

The post-consolidation phase of credit administration shows consistency in growth although not proportional. The exception was in 2009 with a 66.49% reduction in credit accessed with 9 successive increments in the amount of loan disbursed to rural clients by DMBs in Nigeria. The 66.49% reduction in 2009 can be attributed to the effect of the global financial crisis, which kicked in the previous year (2008), in the Nigerian financial sector as DMBs ran short of funds as a result of the global financial turmoil to grant loans and were equally careful in loan approvals due to uncertainty that the financial crisis brought.

The pattern of the result in Table 1 suggest that credit lending pattern is seriously affected by covariate risk and economic threat due to socio-political tension in the Nigerian economy. The behavioural pattern appears quite rational as credit administrations are quite alert to instability in the polity of the Nigerian state and global events that could have an effect on the capital base and portends risk for future investments. Furthermore, the essence of the 2005 banking sector reforms to protect the banking industry against financial crisis seems to pay off as credit lending shocks incidences were highly reduced in the post-consolidation era compared to the pre-consolidation era. Though the effect of the consolidation policy thrust is observed to be low during the first 6 years after consolidation, the credit access practice has increasingly become stable and bloated in the last three years, that is 77.99% increase in 2012, 99.99% in 2013 and 56.97% in 2014).

### 4.2. Results of the Test of Difference

The test of significant difference was done using Mann Whitney U test with SPSS version 23. The aim is to statistically ascertain the difference and its significance, if any. The test result is as presented in Table 2 and Table 3.

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Table 2 provides information regarding the output of the actual Mann-Whitney U test. It shows mean rank and sum of ranks for the two groups tested (pre-consolidation and post-consolidation). The rank table is very useful because it indicates the amount of credit given by the DMBs in the pre-consolidation era and the post consolidation era. This indicates that the post consolidation era has the highest mean rank. This implies that the total volume of credit disbursed during the post consolidation period till 2014 grossly outweighed the amount of credit access that pre-dates 2005. Actually, the upsurge in credit disbursement could be primarily attributed to the influence of the consolidation policy of 2005.

Table 3 shows the actual significance value of the test. Specifically, the test statistics table provides the U statistics, as well as the asymptotic significance (2-tailed) p-value. From the table, it can be concluded that rural credit access in the post consolidation era was statistically significant and higher than the rural credit access in the pre-consolidation era ( $u= 6.000$ ,  $p = .001$ ). Since the p value of the Mann-Whitney U statistics test is below the 5% level of significance, the Null hypothesis which states thus; there is no significant difference in the total credit to rural areas before and after consolidation in Nigeria, is rejected and the Alternative hypothesis namely; there is a significant difference in the total credit to the rural areas before and after consolidation in Nigeria, is accepted.

Furthermore, the test of significant difference between the mean of credits access of the pre and post eras is statistically significant even at 95% confidence level (i.e. 5% level of significant) based on Mann-Whitney U test analysis (see table 3). Thus the Null hypothesis is rejected which is in line with the apriori expectation of the researcher. This implies that the post-consolidation era witnessed a significant increase in total credit to the rural areas by DMBs in Nigeria. This difference is achieved notwithstanding the closure of rural branches.

**Table 2. Mean Ranks and Sum of Ranks**

ERA	N	Mean Rank	Sum of Ranks
RURALCREDIT Pre	10	6.55	72.00
Post	10	15.90	159.00
TOTAL	20		

**Table 3. Mann-Whitney U Test Statistics<sup>a</sup>**

	RURAL CREDIT
Mann-Whitney U	6.000
Wilcoxon W	72.000
Z	-3.450
Asymp. Sig. (2-tailed)	.001
Exact Sig. [2*(1-tailed Sig.)]	.000 <sup>b</sup>

a. Grouping Variable: ERA

b. Not corrected for ties.

### 4.3. Discussion of Findings

The key finding of the study is that consolidation leads to increase in access to DMBs' credit by rural Nigerian. This is indicative that consolidation affects access to credit in Nigeria. This result is obtained despite the fact that consolidation has increased the bank-borrower's distance due to the redistribution of bank branches in the country vis-a-vis, the closure of rural branches and the opening of branches in the urban area by DMBs. The implication of this is the non-existence of DMBs' branches in the rural area and the clustering of their branches in the urban centres. This result does not agree with earlier studies (Agarwal and Huasewald, 2007; Petersen and Rajan, 1994, 2002; Berger et al., 2005) that distance decreases access to credit.

The finding in this study is likely influenced by the use of technology in banking in the country and this agrees with the work of Salawu and Salawu, 2007 who concluded in their study that the integration of technology into the banking services provision in Nigeria has increased banks reach in the country and facilitate better bank-customer relation. This position is supported by EFINA 2008 access to financial services survey which however revealed that Nigeria clearly demonstrates the potential for using mobile phones as a distribution channel for providing financial services to the unbanked. The EFINA, 2014, study showed that 62.8% of the country's financially excluded population own mobile phones.

DMBs have taken advantage of the acceptability and spread of the mobile phone services and synergize this with banking technologies in a bid to extend their geographical coverage and this seems to pay off well as it has resulted to significant increase in credit access by the rural DMBs' customers in the post-consolidation era. Agwu and Carter (2014) in their study on mobile phone

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banking in Nigeria concluded that mobile phone banking has significantly reduced banks customer's dependence on physical bank branch infrastructure. However, the DMBs use this communication and information gathering channel (mobile phone services) to gather information about a potential borrower. Specifically, bank employees who decide loans uses mobile phone services to cross check the authenticity of information supplied by a prospective borrower. Since loans decisions are carried out at the head office of the banks, this helps in bridging the organisational distance gap and equally reduces the transportation cost for both the borrower and the lender (the bank). This makes the mobile phone service a key component of the lending technologies employed by banks in Nigeria to facilitate a better service delivery and ensure a wider coverage.

The study (EFInA, 2008, 2014) however, reveals that there is a significant decline in the number of adult population that are excluded from access to banking services and credit in the study period. In 2008, 79% of the Nigerian adult population had no access to banking services and credit, whereas in 2014 only 63.7% had no access to banking services, which shows a 15.3% bank capturing of the Nigeria non-banking population within the period. This suggests that, distances created by branches closure notwithstanding, DMBs had a way of connecting with their clients. This explains the increase in the amount of credit accessed by rural clients in the midst of branch closure. It is pertinent to note that the number of rural clients that had access to credit facilities of DMBs have increased significantly. This further buttress the position of this study that consolidation has impacted positively on credit access by rural dwellers.

Banks in Nigeria consolidated through merger and acquisition and the benefits that come with the exercise can also be responsible for the result obtained in this study. Such benefits include, but not limited to; technological synergy, wider use of the consolidated firm's strength and better economies of scale (Ugwuanyi, 2015). These benefits promote marketing of firms' products and are equally important in the risk management strategy of any firm. It is obvious that banks in Nigeria took advantage of the benefits of consolidation to improve their service delivery and the result of this study is a reflection of it.

A number of policy initiatives to support local industrialization and Agricultural reforms which are aimed at enhancing economic growth and development by the government can also be advanced as reasons for the increase in access to credit by the rural dwellers within the period. During the period beginning from 2007, government policies on agricultural sector development to ensure price stability, provision of free storage facilities for farmers, tax exemption on agricultural business and duty free importation of agricultural machinery have encouraged credit-channelling to the agricultural business (Eze, 2010). Agriculture is the business of the rural dwellers in Nigeria and obviously the farmers residing in the rural areas have taken advantage of the government policy which significantly contributes to the upsurge in the DMBs credit to the rural clients.

### **5. RECOMMENDATIONS**

It is thus recommended that the regulatory authority, the apex bank in Nigeria, Central Bank of Nigeria, should seek sustainable and result-oriented innovative avenues to engage the banks collaboratively and come up with possible ways to actualise the financial inclusion policy to increase bank-customer proximity in the rural areas. It is also recommended that Government should provide infrastructures like good access roads to the rural areas, electricity and support investments in Information and Communication Technology (ICT) in the rural areas as this will encourage the spread of banks branches to the hinterlands. Another recommendation is that banks should design specific products that fit the rural credit market and collaborate with Community Based Organisations (CBOs) to enlighten the target market. The implementation of these recommendations will increase the volume of credit access in the rural areas even more, ensures better trade-off for the banks, which will subsequently lead to economic growth.

### **6. CONCLUSION AND SUMMARY**

The aim of the study was to ascertain the effect of consolidation on rural access to credit in Nigeria. Consolidation leads to the closure of bank branches in the rural areas and encourages the clustering of bank branches in the urban areas as new branches are opened by banks to advance competitive advantage and sectoral economies of scale. As a consequence, this increases the bank-customer physical distance for rural customers and making case for financial exclusion of residents in the rural areas.

Secondary data for the period 1994 to 2014 obtained from the CBN annual bulletin on the annual total credit of DMBs to the rural customers was used for the study. Total number of bank branches was also obtained from the same source of data collection and the descriptive statistics shows that consolidation affects the geographical distribution of banks in Nigeria as the rural branches were scaled down immediately after the consolidation exercise in 2005. However, the number of urban branches increased almost on a yearly basis after consolidation, leading to overall increase in the number of bank branches in operation in the country. This is indicative of the fact that the Nigerian banking landscape after consolidation, which comes with change of ownership, change in management board and change of business strategy, witnessed the redistribution of bank branches in the country in keeping with the decision of the new proprietors.

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The test difference conducted with Mann-Whitney U-test shows that rural borrowers, accessed more credit in the post-consolidation period when compared to the pre-consolidation period. This implies that consolidation did not affect access to credit by rural borrowers negatively and it is indicative of the use of lending technologies by banks which reduces the effect that distance would have created on their service delivery. The result can also be influenced by the determination of the rural borrowers to access credit which they demonstrate in travelling to the nearest bank branch for transactions, the distance notwithstanding.

Based on this finding, it can be concluded that in today's banking environment, distance is less a barrier as modern banking technology has increase banks' reach and supports better customer-bank relationship. Nevertheless, evidence from the study suggest that if bank branches are opened in the rural areas and synergise with the available technology, it will aid even better access to credit by rural dwellers as banking services will be brought closer to them.

Future studies can focus on the effect of specified distance to a regulated bank branch on access to credit by rural residents in the pre and post consolidation periods using a more current data.

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## A Framework for Multi-Task Learning in Dynamic Adaptive Streaming Over HTTP



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**ABSTRACT:** This paper presents a framework with a taxonomy for multi-task learning in the context of Dynamic Adaptive Streaming over HTTP (DASH). DASH is a widely used technology for video streaming, and multi-task learning has emerged as a promising approach to enhance the performance and user experience of DASH systems by jointly optimizing multiple related tasks. The framework provides a structured approach to design, train, and evaluate multi-task learning models in DASH, while the taxonomy categorizes the key components and approaches within the framework. The taxonomy includes task types, multitask learning approaches, input features, and training strategies. Task types encompass video quality adaptation, buffer management, bandwidth estimation, content pre-fetching, and resource allocation, representing the specific tasks involved in DASH. Multi-task learning approaches encompass methodologies such as shared representation learning, task-specific layers, multi-head architectures, knowledge distillation, and reinforcement learning, offering flexibility in model design and optimization. Input features cover video characteristics, network conditions, device capabilities, and user preferences, providing the necessary information for informed decision-making across tasks. Training strategies include joint training, alternate training, hierarchical training, task weighting, and task balancing, determining how the multi-task learning model is trained and optimized. By following the presented framework and taxonomy, researchers and practitioners can systematically approach the design, training, and evaluation of multi-task learning models in DASH. The framework enables the development of efficient and adaptive video streaming systems by leveraging the interdependencies among tasks. The taxonomy helps organize the components and approaches within the framework, aiding in a better understanding of the various aspects of multi-task learning in the DASH context. Overall, this framework and taxonomy provide a valuable resource for advancing the field of multitask learning in the dynamic and complex domain of video streaming over HTTP.

**KEYWORDS:** multi-task, learning, DASH, framework, video, quality, optimization, streaming

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### I. INTRODUCTION

Dynamic Adaptive Streaming over HTTP (DASH) [13], [14], [11]) has become a widely adopted technology for video streaming, allowing adaptive video quality delivery based on network conditions and device capabilities. In this context, multi-task learning has emerged as a powerful approach to enhance the performance and user experience of DASH systems by jointly optimizing multiple related tasks. To effectively apply multi-task learning in DASH, a framework with a taxonomy can provide a structured and comprehensive approach.

The framework presented here aims to guide researchers and practitioners in the implementation of multi-task learning in DASH systems, with a focus on video quality adaptation, buffer management, bandwidth estimation, content pre-fetching, and resource allocation. The taxonomy within the framework helps categorize and organize the various components and approaches involved in multi-task learning for DASH.

The taxonomy includes task types, multi-task learning approaches, input features, and training strategies. The task types categorize the specific tasks involved in DASH, such as video quality adaptation, buffer management, bandwidth estimation, content pre-fetching, and resource allocation. These tasks form the foundation for designing multi-task learning systems in the DASH context.

This paper consists of five sections. The key elements of Dynamic adaptive streaming over HTTP and how it relates to multitask learning is outlined in section two. The multi-task learning in DASH (MTLD) taxonomy with explanations is given in section three.



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In section four the framework for multi-task learning in DASH (MTLD) is given. How the taxonomy is used in the MTLD framework is explained. Finally, the conclusion is given in section four.

### II. DYNAMIC ADAPTIVE STREAMING OVER HTTP (DASH)

Dynamic Adaptive Streaming over HTTP (DASH) is a popular streaming protocol that enables the adaptive delivery of multimedia content over the internet. DASH allows for seamless streaming by dynamically adjusting the quality of the media based on the viewer's network conditions and device capabilities [12]]. There are several types of DASH implementations that differ in the way they handle content adaptation. There are three main types. Firstly, there is Segment-based DASH [26]], also known as "Chunked" DASH. It divides the multimedia content into small segments or chunks, typically a few seconds in duration. Each segment is encoded at different quality levels, creating multiple representations of the same content. The DASH client dynamically selects the appropriate segment quality based on the available bandwidth and device capabilities. It requests and downloads the segments in real-time, seamlessly switching between different quality levels as needed. This approach provides smooth playback and adapts to changing network conditions.

Secondly, there is Layered DASH [23]], also known as "Scalable" DASH. It uses layered coding techniques to adapt the content based on available network conditions. Instead of dividing the content into separate quality levels, layered DASH encodes the content as a base layer and additional enhancement layers. The base layer provides a lower quality version of the content, while the enhancement layers contain additional data to improve the quality. The DASH client can selectively download and combine the base and enhancement layers to adapt the content quality. This approach allows for fine-grained adaptation by enabling the client to choose which layers to download based on the network conditions. Thirdly, there is Adaptive Bitrate Streaming (ABR) [16]]. It is a form of DASH that focuses on dynamically adjusting the bitrate of the content rather than using separate representations or layers. ABR encodes the content at different bitrates and divides it into small chunks. The DASH client continuously monitors the network conditions and selects the appropriate bitrate for each chunk. It requests and downloads the chunks at the selected bitrate, adapting to the available bandwidth in real-time. ABR is widely used by popular streaming platforms and provides smooth playback even in fluctuating network conditions.

Dynamic Adaptive Streaming over HTTP (DASH) optimizes streaming by employing various techniques to adapt the delivery of multimedia content based on the viewer's network conditions and device capabilities. There are many ways in which DASH optimizes streaming. The first way is Adaptive Quality Selection [21]] where DASH divides the multimedia content into small segments or chunks, each encoded at different quality levels. The DASH client dynamically selects the appropriate segment quality based on the viewer's available bandwidth and device capabilities. By continuously monitoring the network conditions, DASH adjusts the quality in real-time, ensuring smooth playback and minimizing buffering or stuttering issues [15]]. The second way is Bitrate Adaptation where DASH utilizes adaptive bitrate streaming (ABR) techniques to adjust the bitrate of the content dynamically. By encoding the content at multiple bitrates and dividing it into small chunks, DASH selects the appropriate bitrate for each chunk based on the viewer's available bandwidth. This adaptive bitrate selection ensures that the viewer receives the highest quality possible without experiencing interruptions due to limited bandwidth.

The third way is Buffer Management [10]] where DASH employs intelligent buffer management techniques to optimize streaming performance. It maintains a playback buffer on the client-side, preloading and buffering segments ahead of time. By doing so, DASH can compensate for temporary fluctuations in the network conditions. The buffer allows for smoother playback by ensuring a continuous supply of segments, even if there are short-lived drops in network bandwidth. The fourth way is Network Awareness [5]] where DASH incorporates network-awareness mechanisms to monitor the available bandwidth and latency in real-time. It uses this information to make informed decisions about which segment quality or bitrate to request and download. By adapting to the current network conditions, DASH optimizes the streaming experience by avoiding quality levels that would result in buffering or playback interruptions.

The fifth way is Content Caching [18]] where DASH can take advantage of content caching at various levels, such as content delivery networks (CDNs) or local caches. Caching frequently accessed segments closer to the viewer reduces the latency and improves the overall streaming performance. By minimizing the distance and network hops between the viewer and the content, DASH optimizes the delivery of segments, leading to faster startup times and smoother streaming. The sixth way is Multi-Server Adaptation [4]] where in some scenarios, DASH can distribute the content across multiple servers or CDNs. This approach, known as multi-server adaptation, allows for load balancing and efficient utilization of network resources. By dynamically selecting the best server or CDN for each segment, DASH optimizes the streaming experience by minimizing congestion and maximizing the available bandwidth. Overall, DASH optimizes streaming by adapting the content delivery based on real-time network conditions, employing adaptive quality selection, bitrate adaptation, buffer management, network awareness, content caching, and multi-

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server adaptation techniques. These optimizations collectively ensure smooth playback, reduce buffering, and provide the best possible streaming experience for viewers.

Multi-task learning can be applied to DASH (Dynamic Adaptive Streaming over HTTP) to improve its performance and optimize the streaming experience. Multi-task learning refers to training a single model to simultaneously learn and perform multiple related tasks. In the context of DASH, multi-task learning can be employed in the following ways. The first is in Quality Prediction and Adaptation [7]). One task in DASH is predicting the quality level or bitrate that should be selected for a given segment based on the network conditions. Another task is adapting the content delivery to the viewer by selecting the appropriate quality level. By jointly learning these tasks, a multi-task learning approach can improve the accuracy of quality prediction and enable more effective content adaptation. The model can learn to identify patterns and relationships between network conditions and the optimal quality level, leading to better decision-making during content adaptation.

The second is in Buffer Management and Bitrate Selection [8]). Buffer management involves deciding how many segments to buffer in advance and when to request new segments to maintain a continuous playback experience. Bitrate selection determines the appropriate bitrate for each segment based on the available network bandwidth. Multi-task learning can integrate these two tasks, enabling the model to learn the optimal buffer management strategy while considering the bitrate selection. By jointly optimizing these tasks, the model can improve the buffer utilization and ensure smoother playback without interruptions. The third is in Quality Evaluation and Reinforcement Learning [20]). Multi-task learning can incorporate a quality evaluation task, where the model learns to assess the quality of the streaming experience based on user feedback or objective metrics. This quality evaluation can be used as a reward signal for reinforcement learning. By combining quality evaluation with reinforcement learning techniques, the model can learn to make better decisions during content adaptation, optimizing the streaming experience based on user preferences and quality feedback.

The fourth is in Content Delivery Optimization [17]). Multi-task learning can be applied to optimize the content delivery process in DASH. Tasks such as content caching, segment scheduling, and server selection can be jointly learned to maximize the utilization of network resources, minimize latency, and improve overall streaming performance. By considering multiple related tasks simultaneously, the model can make more informed decisions and optimize the content delivery strategy dynamically. Overall, multi-task learning in DASH can enhance various aspects of the streaming process, including quality prediction and adaptation, buffer management and bitrate selection, quality evaluation and reinforcement learning, and content delivery optimization. By jointly learning multiple tasks, DASH can improve its performance, adaptability, and overall streaming experience for viewers.

### III. MULTI-TASK LEARNING IN DASH (MTLD) TAXONOMY

The following taxonomy enables one to understand and categorize the different dimensions and techniques involved in MultiTask Learning as applied to DASH. It categorizes the different aspects of Multi-Task Learning (MTL) in DASH based on task types, MTL approaches, input features, and training strategies. Each category is shown as a bullet point, followed by the subcategories indented using vertical bars. Each level is represented by a vertical bar (|), and subcategories or subtopics are indented with two underscores (\_\_\_). This representation gives an overview of the taxonomy structure and the relationships between different categories in a hierarchical manner.

- Task Types:
  - |\_\_\_ Video Quality Adaptation
  - |\_\_\_ Buffer Management
  - |\_\_\_ Bandwidth Estimation
  - |\_\_\_ Content Pre-fetching
  - |\_\_\_ Resource Allocation
- Multi-Task Learning Approaches:
  - |\_\_\_ Shared Representation Learning
  - |\_\_\_ Task-Specific Layers
  - |\_\_\_ Multi-Head Architectures
  - |\_\_\_ Knowledge Distillation
  - |\_\_\_ Reinforcement Learning
- Input Features:
  - |\_\_\_ Video Characteristics
  - |\_\_\_ Network Conditions

## A Framework for Multi-Task Learning in Dynamic Adaptive Streaming Over HTTP

|--- Device Characteristics

|--- User Preferences

- Training Strategies:

|--- Joint Training

|--- Alternate Training

|--- Hierarchical Training

|--- Task Weighting

|--- Task Balancing

A description of each category follows. The first category is Task Types. This category outlines the specific tasks or objectives in DASH that can benefit from MTL. It includes tasks such as Video Quality Adaptation, Buffer Management, Bandwidth Estimation, Content Pre-fetching, and Resource Allocation. These tasks represent different aspects of optimizing the streaming experience. The second category is Multi-Task Learning Approaches. This category focuses on the approaches or techniques used for MTL in DASH. It includes Shared Representation Learning, where a common representation is learned and shared among tasks; Task-Specific Layers, where separate layers are used for each task; Multi-Head Architectures, which involve task-specific branches in the model; Knowledge Distillation, which transfers knowledge from a teacher model to a student model; and Reinforcement Learning, which employs reinforcement learning techniques for joint task optimization.

The next category is Input Features. This category identifies the different types of input features that can be used in MTL for DASH. It includes Video Characteristics, such as resolution, encoding parameters, or content complexity; Network Conditions, which encompass bandwidth, latency, and other network-related metrics; Device Characteristics, such as device capabilities or available resources; and User Preferences, which capture user-specific preferences or requirements. The final category is Training Strategies. This category focuses on the strategies used during the training phase of MTL in DASH. It includes Joint Training, where all tasks are trained simultaneously; Alternate Training, where tasks are trained in an alternating or sequential manner; Hierarchical Training, where tasks are organized hierarchically, with some tasks supervising others; Task Weighting, where different weights are assigned to each task during training; and Task Balancing, which aims to achieve a balance between tasks in terms of training focus and optimization. In general, this taxonomy provides a comprehensive framework for understanding and categorizing MTL in DASH, considering the specific tasks involved, the approaches employed, the input features utilized, and the training strategies applied. It helps organize the different aspects of MTL in DASH, facilitating the development and exploration of MTL techniques for optimizing streaming performance.

An explanation for the various subcategories within the taxonomy on Multi-Task Learning in Dynamic Adaptive Streaming over HTTP (DASH) is now given:

Task Types:

- a. Video Quality Adaptation: This task focuses on selecting the appropriate video quality (bitrate) for a given network condition and device capabilities.
- b. Buffer Management: This task involves managing the playback buffer to ensure smooth video playback and minimize interruptions.
- c. Bandwidth Estimation: This task aims to estimate the available network bandwidth to make informed decisions regarding video quality and buffer management.
- d. Content Pre-fetching: This task involves predicting future video segments that are likely to be requested and proactively fetching them to reduce latency.
- e. Resource Allocation: This task deals with allocating system resources such as network bandwidth, CPU, and memory among different tasks and components of the streaming system.

Multi-Task Learning Approaches:

- a. Shared Representation Learning [3], 9]: This approach involves training a single model with shared parameters to perform Multiple tasks simultaneously. The model learns a shared representation that captures common features and relationships across tasks.
- b. Task-Specific Layers [Error! Reference source not found., Error! Reference source not found.]: In this approach, a model consists of shared layers for common features and separate task-specific layers for individual tasks. The shared layers capture shared information, while task-specific layers capture task-specific knowledge.

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c. Multi-Head Architectures [2], 24]): This approach uses multiple output heads in a neural network, with each head dedicated to a specific task. The shared layers extract shared features, and each head learns task-specific representations and predictions.

d. Knowledge Distillation [1], 27]): This approach involves training a primary model (teacher) on multiple tasks and using it to Guide the training of secondary models (students) that focus on specific tasks. The secondary models learn from the knowledge of the primary model.

e. Reinforcement Learning [6], 19]): This approach combines reinforcement learning with multi-task learning to optimize the Streaming system's performance. The reinforcement learning agent learns to make decisions for different tasks based on rewards and system objectives.

### Input Features:

a. Video Characteristics: Features related to the video content, such as resolution, frame rate, spatial and temporal complexity, and encoding parameters.

b. Network Conditions: Features related to the network environment, including available bandwidth, round-trip time (RTT), Packet loss rate, and congestion indicators.

c. Device Characteristics: Features describing the device capabilities, such as processing power, battery level, screen size, and Display resolution.

d. User Preferences: Features representing user preferences, including history, context, QoS preferences, and user behavior Patterns.

### Training Strategies:

a. Joint Training: All tasks are trained together using a single loss function that combines the objectives of different tasks. The Model learns to jointly optimize multiple objectives.

b. Alternate Training: The model is trained in an alternating manner, focusing on one task at a time while freezing the Parameters related to other tasks. The training process iterates between different tasks until convergence.

c. Hierarchical Training: Tasks are trained in a hierarchical manner, where lower-level tasks are trained first, and their outputs are used as inputs for higher-level tasks. This approach captures dependencies and allows for the transfer of knowledge between tasks.

d. Task Weighting: Different tasks can be assigned different weights or importance during training to reflect their relative Significance or system objectives.

e. Task Balancing: Techniques such as curriculum learning or data balancing can be employed to ensure that the model Receives sufficient training examples for each task and avoids bias towards dominant tasks.

Note that the taxonomy provided above is a general overview of multi-task learning in the context of Dynamic Adaptive Streaming over HTTP (DASH). Actual implementations and research in the field may vary, and new approaches may emerge over time.

## IV. MULTI-TASK LEARNING IN DASH (MTLD) FRAMEWORK

The framework presented below provides a comprehensive description of the steps involved in applying multi-task learning to Dynamic Adaptive Streaming over HTTP (DASH), along with a taxonomy that categorizes the key components and approaches within the framework. In our framework and we use the taxonomy derived in the previous section to categorize the techniques within that framework. The Framework for Multi-Task Learning in Dynamic Adaptive Streaming over HTTP (DASH) is as follows:

### Problem Formulation:

a. Define the tasks: Identify the specific tasks involved in DASH, such as video quality adaptation, buffer management, bandwidth estimation, content pre-fetching, and resource allocation.

b. Define the objectives: Clearly define the objectives for each task, considering system performance metrics, user experience, and network conditions.

c. Identify input features: Determine the relevant input features that capture video characteristics, network conditions, device capabilities, and user preferences.

### Data Collection and Preparation:

a. Collect training data: Gather a diverse dataset that includes examples of different network conditions, video content, and User behaviors.

b. Preprocess the data: Clean and preprocess the collected data, extract relevant features, and perform any necessary data Transformations or normalization.

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### Model Architecture:

- a. Choose a suitable architecture: Select a neural network architecture that can accommodate multi-task learning, such as Shared representation learning, task-specific layers, or multi-head architectures.
- b. Design the input layers: Define the input layers of the model to accept the relevant features identified in the problem Formulation stage.
- c. Define shared layers: Determine the layers that capture shared representations and common features across tasks.
- d. Specify task-specific layers: Incorporate task-specific layers that specialize in capturing task-specific knowledge and making Task-specific predictions.
- e. Configure output layers: Configure the output layers corresponding to each task, ensuring that they produce the desired Predictions or decisions.

### Training:

- a. Loss function: Define a composite loss function that combines the objectives of different tasks, considering their relative importance or system objectives.
- b. Optimization algorithm: Choose an appropriate optimization algorithm, such as stochastic gradient descent (SGD) or adaptive optimization methods like Adam or RMSprop.
- c. Training strategy: Decide on the training strategy, such as joint training, alternate training, hierarchical training, or task weighting, based on the problem requirements and model architecture.
- d. Train the model: Iterate through the training data, feeding the inputs into the model, computing the loss, and updating the model parameters using backpropagation and the chosen optimization algorithm.

### Evaluation and Validation:

- a. Evaluation metrics: Select appropriate evaluation metrics to assess the performance of each task, considering system-level performance, user experience, and other relevant criteria.
- b. Validation set: Set aside a portion of the collected data as a validation set to monitor the model's performance during training and tune hyperparameters.
- c. Validate the model: Periodically evaluate the model on the validation set to assess its performance, identify potential overfitting, and make necessary adjustments to the model or training process.

### Testing and Deployment:

- a. Test the model: Evaluate the trained model on unseen test data to measure its performance on real-world scenarios and validate its effectiveness.
- b. Deployment considerations: Consider the deployment environment and any constraints or requirements specific to the target system or application.
- c. Integration: Integrate the trained multi-task model into the DASH system, ensuring compatibility and appropriate interfaces with other components.
- d. Monitor and fine-tune: Continuously monitor the performance of the deployed model and make necessary adjustments or in-tuning to optimize its performance over time.

The taxonomy fits into the framework for multi-task learning in DASH as follows. The first is in Problem Formulation. The taxonomy helps in defining the tasks by identifying specific tasks involved in DASH, such as video quality adaptation, buffer management, bandwidth estimation, content pre-fetching, and resource allocation. It also aids in defining objectives for each task and identifying the relevant input features based on video characteristics, network conditions, device capabilities, and user preferences. The second is in Model Architecture. The taxonomy aligns with the model architecture stage by providing options for suitable MTL approaches, such as shared representation learning, task-specific layers, multi-head architectures, knowledge distillation, or reinforcement learning. It also guides the design of input layers, shared layers, task-specific layers, and output layers based on the identified tasks and input features.

The third is in Training. The taxonomy complements the training stage by assisting in the selection of appropriate training strategies, such as joint training, alternate training, hierarchical training, task weighting, or task balancing. It also helps in defining the loss function that combines the objectives of different tasks and in choosing the optimization algorithm for training the model. The fourth is in Evaluation and Validation. The taxonomy supports the evaluation and validation stage by suggesting relevant evaluation metrics for assessing the performance of each task, considering system-level performance, user experience, and other criteria. It also encourages the use of a validation set to monitor the model's performance during training and make necessary adjustments. The fifth is in Testing and Deployment. The taxonomy aligns with the testing and deployment stage by emphasizing

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the need to test the trained model on unseen data and evaluate its performance in real-world scenarios. It also highlights the importance of considering deployment considerations, integration with the DASH system, and monitoring the model's performance for continuous optimization.

By incorporating the taxonomy within the multi-task learning framework, it provides a structured and systematic approach to designing, training, evaluating, and deploying multi-task models in DASH. The taxonomy helps in organizing the different aspects of multi-task learning and ensures that important considerations specific to DASH are addressed at each stage of the framework.

### V. CONCLUSIONS

In conclusion, the taxonomy presented within the framework for multi-task learning in DASH provides a structured and comprehensive approach to developing, training, and deploying multi-task models. The taxonomy categorizes different aspects of multi-task learning in DASH, including task types, MTL approaches, input features, and training strategies. By following this taxonomy, the framework enables researchers and practitioners to effectively tackle the challenges in DASH and optimize the streaming experience. The taxonomy helps in defining the specific tasks involved in DASH, such as video quality adaptation, buffer management, bandwidth estimation, content pre-fetching, and resource allocation. It guides the selection of appropriate MTL approaches, such as shared representation learning, task-specific layers, multi-head architectures, knowledge distillation, or reinforcement learning. It also aids in identifying relevant input features, such as video characteristics, network conditions, device capabilities, and user preferences. Moreover, the taxonomy assists in determining suitable training strategies, including joint training, alternate training, hierarchical training, task weighting, or task balancing. It supports the design of model architectures that incorporate shared layers, task-specific layers, and appropriate output layers for each task. It helps in defining loss functions that combine the objectives of different tasks and in selecting optimization algorithms for training the models. Furthermore, the taxonomy suggests evaluation metrics and emphasizes the use of validation sets to monitor and validate the performance of multi-task models during training. It also highlights the importance of testing the models on unseen data and considering deployment considerations and integration with the DASH system. Finally, the taxonomy within the multi-task learning framework for DASH provides a systematic and organized approach to tackle the complex challenges in adaptive streaming. By following this taxonomy, researchers and practitioners can effectively design, train, evaluate, and deploy multitask models that optimize the streaming experience, improve system performance, and enhance user satisfaction in DASH applications.

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## The Influence of Kinetic Life Training Methods and Concentration on the Dwi Hurigi Kick Skills of Taekwondo Athletes



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**ABSTRACT:** So, this study aims to improve the skills of the double hurigi kick through the life kinetic training method and concentration on the double hurigi kick of Tae Kwon Do athletes. This research is a type of quantitative research with experimental methods and using a 2x2 factorial design. The aim of this study was to reveal the effect of life kinetic and concentration training methods on the two hurigi kick skills of Tae Kwon Do athletes. The population in this study were Tae Kwon Do athletes at the Tunas Harapan Academy in Bengkulu. The sample in this study were Tae Kwon Do Athletes at the Tunas Harapan Academy, totaling 36 athletes. The statistical analysis used in this study was the two-way ANOVA test to test the hypothesis that the Kinetic Life Training Method accompanied by the Concentration level has an influence on the Two Hurigi Kick Skills of Tae Kwon Do Athletes. The results of the research show that the Training MethodLifeKinetic which is accompanied by a level of concentration has an influence on the Kick Skills of the Two Hurigi Tae Kwon Do Athletes. The results of the study show that (1) there are differences in training methodslife kinetic high concentration level with low concentration level kinetic life training methods on increasing kick technique skillsTwo hurigi Kepahiang Tae Kwon Do athlete. (2) There are differences in training methodsconventionalhigh level of concentration with conventional methods of low concentration on increasing kick technique skillsTwo hurigi Kepahiang Tae Kwon Do athletes (3) There are differences in training methodslife kinetic high concentration level with conventional high concentration level training methods on improving kick technique skillsTwo hurigi Kepahiang Tae Kwon Do athlete. (4) There are differences in training methodslife kinetic Low concentration level with conventional low concentration level training methods on increasing kick technique skillsTwo hurigi Kepahiang Tae Kwon Do athlete. The conclusion in this study is that there is a significant difference in effect between the kinetic life training method and the conventional training method.

**KEYWORDS:** dwi hurigi, konsentrasi, life kinetic, taekwodo

### I. INTRODUCTION

Taekwondo is a sport that is expected to educate the younger generation to become healthy and good individuals. Taekwondo is a self-defense competition, there are two numbers namelypoomsae andKyorgi in competition, poomsae is a Taekwondo training method to practice attacking and defending against an imaginary opponent. Poomsae consists of various forms of stances, kicks, punches, and parries based on Eastern philosophical principles.Kyorgi Taekwondo is an exercise in which two people fight to practice techniques and self-defense using basic movement techniques. Taekwondo is made up of three words, Tae means kick, Kwon means punch and do means art. So, Taekwondo is a art movement hands and legs. The popularity of Taekwondo has caused this art to take many forms. Like many martial arts other. Sports achievement in Taekwondo shows that an athlete's performance is influenced by various psychological factors (DARMAN et al., 2020; FITRININGSIH, 2020).

Although there are many differences in technical doctrine among Taekwondo organizations, the art generally emphasizes kicks made from a moving situation, using greater range and leg strength to immobilize an opponent from a distance. In a match, the spinning kick, 45 degrees, front, ax and side kicks are most widely used. The kicks include jumping, spinning, and dropping kicks, often in the form of a combination of several kicks. Taekwondo training also includes a comprehensive system of striking and defending with the hands, but generally does not emphasize grappling. The training process in Taekwondo sports relates to the athlete's condition and the training methods used in training to achieve maximum results (MARDIANA, 2021; MUHAMMAD, 2022; Putril et al., 2022).



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Achievement is the result of a person's efforts to achieve the desired target (Masrun, 2016). that factor are internal factors and external factors. Internal factors include: physical, technical, tactical, and mental (psychic) athlete, and External factors are those that arise from outside the athlete's self like: coach, means and infrastructure, sports teachers, families, training methods, organization, climate, weather, nutritious food and so on. However, in the context of a match, the things mentioned above will not function optimally if you don't have a good psychological condition. In fact, studies show that psychology has a role of 70% in matches (Hidayat, 2015). This indicates that with good psychological conditions, athletes have mental stability so that the technical, physical and coordination of movements that have been trained can be displayed properly (Chen et al., 2015; Shanti et al., 2022).

Chaabene et al., (2018); Ferreira da Silva Santos et al., (2019) Thus, to achieve maximum performance, athletes and coaches especially in Taekwondo should not only focus on technique, physique and movement coordination, but must pay attention to the psychology of the athletes themselves, because we all know that psychology has an important role in improving performance. sports (Komarudin, 2016). In the process of training in a sport, a person's physical abilities, techniques and tactics will not improve significantly, if they are not supported by psychological abilities. It is undeniable that psychological ability is one of the determining factors that influence the achievement of achievement results. Therefore, special training is needed to improve the psychological condition of athletes with various psychological training methods arranged in a psychological training program (Komarudin, 2018). Psychological training itself is useful for increasing the psychological efficiency of athletes, especially when athletes are in a complex stressful situation (Harsono, 2017). If an athlete has never done psychological training, then it is likely that the athlete will have difficulty dealing with various problems that will be encountered when practicing or competing (Boutios et al., 2021; Mailapalli et al., 2015).

Jae-Ok & Voaklander, (2016) Psychological training programs are very important for athletes so that athletes can focus on the tasks that must be done and focus more on directing their potential or abilities as much as possible. In the sport of Taekwondo, we know that there are various challenges in athletes during matches or competitions that often drop the athlete's psychology. Phenomena like this should have been able to be overcome considering the development of the world of sports which is growing rapidly every day. Especially in the sport of Taekwondo, one of the psychological factors that is important for athletes to master is concentration. Concentration is one of the psychological aspects that Taekwondo athletes really need because it requires athletes to concentrate on one thing to the exclusion of all other unrelated things (Robbani & Dimiyati, 2019). If a Taekwondo athlete does not have good concentration, then he will difficult to give the best performance. In simple terms, it can be exemplified, if someone does not dare to attack, then the athlete will not get a point. Conversely, if athletes have the courage to carry out tactics, then athletes will get great opportunities to earn points. Concentration is very important in every activity. Concentration of thoughts is one of the internal factors that is believed to influence skill mastery (Nurul, 2015).

Method Kinetic life is a training method designed in such a way as to improve cognition, concentration, motivation, and also as a method to stimulate brain function. In method Kinetic life Brain stimulation is carried out by requiring athletes to perform movements with certain concepts spontaneously. In fact, these movements must have changed form when they have been mastered more or less 60%. Training method kinetic life has a very important role in a training process. Training method kinetic life can show how fast or easy it is for someone to master a movement. Thus, athletes must be strong in the psychological aspect, because if not, athletes cannot master the movements being trained, therefore they must be trained through training methods kinetic life. From the results of observations made on the athletes who are members of the Dojang Tunas Harapan Academy about kick two hurigi show that kick two hurigi performed by the Athletes are still not good even though they have practiced kick two hurigi. The main factor that causes a bad kick two hurigi what they do is rotate the hip joint. The athlete's rotation of the hip joint is not so perfect that it affects the kick result two hurigi what he did. It is necessary to provide the correct training method so that the kick result two hurigi maximum can be done. With the correct training method, it is hoped that athletes will no longer experience difficulties in practicing kick two hurigi and does not take a very long time to master a movement (Akhmad et al., 2021; Ji, 2016).

Besides kick two hurigi is a kick technique with the highest score in a Taekwondo match. That is, it has a score of 5 if it succeeds in hitting the head in the match. Which is kick two hurigi has 3 basic points and 2 technical points, so the total points are 5. While other kick techniques such as forward kicks on the head total points 3, regarding the body the total points are 2. Based on the explanation above the author wants to research training methods Kinetic Life associated with the level of concentration has an effect on the mastery of kick technique two hurigi in the sport of Taekwondo, because of the pattern of practice Kinetic Life can be applied in the sport of Taekwondo to improve his kicking skills.

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## II. MATERIAL AND METHODS

This research is quantitative research with experimental methods, quantitative research refers to the number and size. In interpreting the results of quantitative research, it tries to parse the breadth of the study results and generalize them as empirical truth or facts in general (Masrun, 2021). Experimental research is a research method used to determine the effect of certain treatments on other people under controlled conditions. It can be concluded that experimental research was conducted to see whether there was an effect of "treatment" on research subjects (Sugiyono, 2014). The design used in this study is quasi-experimental.

In this experimental study, the researcher chose to use a factorial design because the researcher did not only want to see the effect of the independent variable on the dependent variable but also the interaction effect of the two independent variables on the dependent variable. According to (Noor, 2014), factorial design is an action on one or more variables that is manipulated simultaneously in order to be able to study the effect of each variable on the dependent variable or the influence caused by the interaction between several variables

Furthermore, according to (Emzir, 2015), the term factorial refers to the fact that the design involves several factors. Each factor has two or more levels. Thus, a 2x2 factorial design has two factors, each factor having two levels. 2x2 is the simplest factorial design (Emzir, 2015).

**Tabel 1. Desain Faktorial 2x2**

Variabel Attributive	Variabel Manipulative	Training MethodK inetic Life (A1)	Convention al Training Methods (A2)
High Concentration B1		A1B1	A2B1
Low Concentration B2		A1B2	A2B2
Kick Technique SkillsTwo hurigiTaekwondo athlete.			

A1B1: The group of athletes who have high concentrations are given treatment with MethodKinetic Life.

A2B1: The group of athletes who have high concentrations are treated with the conventional method.

B1B2: The group of athletes who have low concentrations are given treatment by the methodKinetic Life.

A2B2: The group of athletes who have low concentrations are given treatment with the methodconventional.

So that the magnitude of the effect of the experiment can be known with certainty. The first group of respondents received training using the training methodKinetic Lifeand the second group Conventional. According to (Sugiyono, 2014) the research variable is an attribute or characteristic or value of people, objects or activities that have certain variations set by the researcher to study and then draw conclusions. The variables in this study are.

1. Independent variables are variables that influence or cause changes or the emergence of the dependent variable (Sugiyono, 2014). The independent variable of this study is the Training MethodKinetic life. Concentration as a variableintervening.

2. The dependent variable is the variable that is affected or is the result, because of the independent variables (Sugiyono, 2014). The dependent variable of this study is kick technique skillsTwo hurigiTaekwondo athlete.

The population of this study were Tae Kwon Do athletes from the Tunas Harapan Kepahiang Academy, TI Bengkulu. Population is an important part of a research. A population consists of individuals or objects with the same characteristics. From the population it is possible to obtain some of the data needed to solve the problem under study. The population of this study were 36 Tae Kwon Do Academy Tunas Harapan athletes who were at TI Bengkulu.

The sample taken by the researcher is an athlete who is active in training and who is often sent down during the championships that the athlete participates in. Material for the author's consideration in choosing a sample usingpurposive sampling is a phenomenon. Concentration level has an important role in our life, especially to gain quality and productivity in practice. With concentration we can achieve maximum results and faster in our work. So that the samples taken in this research are athletes who have high concentrations and low concentrations.

Methods of sampling and distribution of sample groups to Taekwondo athletes at the Tunas Harapan Kepahiang Academy in Bengkulu Province.

# The Influence of Kinetic Life Training Methods and Concentration on the Dwi Hurigi Kick Skills of Taekwondo Athletes

**Table 2.**

All samples did a Concentration Test The results are divided into 2 High Concentration and Low Concentration			
High Concentration Divided into 2 groups.		Low Concentration Divided into 2 groups.	
Life KineticHigh Concentration	High Concentration Conventional	Life KineticLow Concentration	Low Concentration Conventional

To collect research data, the authors use a measuring instrument as a support or data collector. The quality of the data depends on the quality of the measuring instrument. If the data collection tool is valid and reliable, then the data obtained from the research results will also be valid and reliable. Repeatedly using the same tool on the same subject and subject, the results will be the same or relatively consistent. The tool is used in obtaining data from an object to be measured, while measurement is a process for obtaining data. In connection with this research, the instruments used in this study are as follows:

1. To measure the level of concentration CGT is a test used to measure a person's concentration (Greenlees et al., 2006). This instrument has reliability using (tes re-test) dengan product moment correlation of  $r = .79$  ( $p < .05$ ).
2. To measure Taekwondo skill, a kick skill test is used two hurigi.

The equipment needed in carrying out this test includes: 1) room, 2) stationery, 3) Concentration Grid Test sheet, and 4) stop watch. This instrument can be seen in Table.

**Table 3. Intrumens Concentration Grid Test (CGT)**

<b>84</b>	<b>27</b>	<b>51</b>	<b>78</b>	<b>59</b>	<b>52</b>	<b>13</b>	<b>85</b>	<b>61</b>	<b>55</b>
<b>28</b>	60	92	04	97	90	31	57	29	33
<b>32</b>	96	65	39	80	77	49	86	18	70
<b>76</b>	87	71	95	98	81	01	46	88	00
<b>48</b>	82	89	47	35	17	10	42	62	34
<b>44</b>	67	93	11	07	43	72	94	69	56
<b>53</b>	79	05	22	54	74	58	14	91	02
<b>06</b>	68	99	75	26	15	41	66	20	40
<b>50</b>	09	64	08	38	30	36	45	83	24
<b>03</b>	73	21	23	16	37	25	19	12	63

Source: (Greenlees et al., 2006).

The steps for carrying out this test are: 1. This test has 10 x 10 boxes, each box containing a two-digit number from 00 to 99. 2. To carry out this test, the sample only needs to connect the smallest to the largest numbers by placing a check mark. or cross on each number found. 3. Assessment is determined by the number of numbers they find sequentially. This concentration test was carried out once. In carrying out this test, the sample sat in the space provided, then the sample worked on the available questions according to the instructions given. The sample is given 60 seconds to perform this test. The criteria used in assessing concentration levels use the Concentration Grid Test (CGT), as shown in the following table:

**Table 4. Criteria Concentration Grid Test (CGT)**

No	Criteria	value
<b>1</b>	21 up	Excellent
<b>2</b>	16-20	Good
<b>3</b>	11-5	Enough
<b>4</b>	6-10	Less
<b>5</b>	5 down	Very lacking

Source: (Greenlees et al., 2006).

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The research instrument is a tool used to measure observed natural and social phenomena according to (Sugiyono, 2011). This phenomenon is called the research variable, so in this study the phenomenon to be measured is the performance of kick techniques Two hurigi on Tae Kwondo Athletes. From the understanding of the instrument, it can be seen that the research instrument is used to make measurements with the aim of producing accurate data.

This exercise is divided into several types of exercises, namely RC 1, which is throwing and catching the ball facing the person giving the instructions; RC1, RC2, RC3, RC4 exercises, namely throwing and catching the ball while turning your back to the intruder; RC5 exercise, namely throwing and catching the ball while moving the other limbs (Komarudin, 2018). Then the Reaction-Cognition (RC) exercise is modified and integrated with Taekwondo martial arts training, namely kick skills training. Two hurigi.

### III. RESULTS AND DISCUSSION

Research conducted 5 weeks contain treatment which is carried out 3 times a week, in accordance with the opinion (Juliantine, 2007) which says "As an experiment to get good results it can also be carried out in a training frequency of 3 days/week, while the length of practice is at least 4-6 weeks". The tests carried out in the initial test consisted of 2 forms of tests, namely the concentration test and the kick skill test two hurigi Taekwondo sport. Test Concentration conducted to determine the level of high and low concentration of athletes. Then test kick skill two hurigi needed to see the impact of treatment/treatment that has been given.

After doing some tests, namely tests Concentration and kick skill test two hurigi. The author presents a description of the test result data as follows:

**Table 5. Concentration Test Results**

NO	X	CONCENTRATION	NO	x	CONCENTRATION
1	x1	18	19	X19	12
2	X2	17	20	X20	10
3	X3	17	21	X21	10
4	X4	18	22	X22	9
5	X5	16	23	X23	7
6	X6	17	24	X24	8
7	X7	16	25	X25	10
8	X8	18	26	X26	8
9	X9	16	27	X27	9
10	X10	17	28	X28	10
11	X11	16	29	X29	10
12	X12	16	30	X30	5
13	X13	16	31	X31	7
14	X14	17	32	X32	10
15	X15	18	33	X33	8
16	X16	16	34	X34	5
17	X17	18	35	X35	7
18	X18	18	36	X36	2

In table 5. it is known that the results of the CGT test for the High High Concentration Level group obtained an average score of 16.94. With a standard deviation of 0.87. While the test results CGT in the Low Concentration Level group obtained an average of 8.44. With a standard deviation of 3.07. This data is used as a benchmark for grouping athletes regarding the method to be given in the treatment/treatment. Next, the researcher describes the kick skill test data two hurigi (preliminary test and post test) based on treatment/treatment as follows:

Data on the results of the concentration test conducted by 36 athletes from the Tunas Harapan Kepahiag Academy in Bengkulu Province, active athletes and those who have participated in regional championships. Of the 36 athletes the test results referred to the Concentration Grid Test (CGT) Assessment Criteria. As many as 18 athletes entered the category of good or high concentration and 18 athletes entered the less or low category.

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After that, the 18 athletes with high and low concentration levels were again divided into 2 groups from 18 into 2 groups as much as 9 athletes per group into 4 groups. The first group consisted of 9 athletes in the groupLife Kinetic High-level concentration, the second group consisted of 9 athletes in the groupkinetic life low level concentration, the third group consisted of 9 athletes in the high concentration level Conventional group and the fourth group consisted of 9 people in the low concentration level Conventional group.

The next data is that there are 36 athletes who will be pretested with the Dwi Hurigi Kick Technique Skills with the target being assessed by a licensed referee/judge. Freestyle poomsae scoring guidelines world taekwondo federation, in number gradient of turn round kick (WTF, 2020) Performance appraisal is carried out by International referee Poomsae (international referee specifically for art competition numbers), which gives value/points to kick technique skills Two hurigi. Range of scores given score between 0.1- 0.9 based on performance level: 0.1-0.2 : poor, 0.3-0.4 : pair, 0.5-0.6 : Average, 0.7-0.8 : very good, 0.9 : Excellent. Pretest results Life Kinetic high/low concentration and conventional high/low concentration as follows.

No	X	PRETEST	POSTTES	No	X	PRETEST	POSTTES
1	x1	0,6	0,9	19	X19	0,5	0,5
2	X2	0,7	0,8	20	X20	0,5	0,5
3	X3	0,5	0,6	21	X21	0,4	0,4
4	X4	0,6	0,7	22	X22	0,5	0,5
5	X5	0,7	0,8	23	X23	0,5	0,5
6	X6	0,6	0,9	24	X24	0,4	0,6
7	X7	0,6	0,7	25	X25	0,5	0,5
8	X8	0,5	0,6	26	X26	0,7	0,8
9	X9	0,6	0,7	27	X27	0,6	0,7
10	X10	0,5	0,6	28	X28	0,7	0,8
11	X11	0,4	0,5	29	X29	0,7	0,8
12	X12	0,5	0,6	30	X30	0,6	0,7
13	X13	0,4	0,5	31	X31	0,6	0,6
14	X14	0,6	0,6	32	X32	0,4	0,5
15	X15	0,4	0,4	33	X33	0,6	0,6
16	X16	0,6	0,6	34	X34	0,5	0,4
17	X17	0,4	0,5	35	X35	0,5	0,4
18	X18	0,6	0,7	36	X36	0,4	0,4

Testing the first hypothesis shows that there is a significant difference in effect between the training method kinetic life and conventional training for the mastery of kicking technique two hurigi in the sport of taekwondo martial arts. This difference occurs because theoretically the training method approach kinetic life provides a great opportunity to improve the results of skills training. Through training life kinetic, can increase intelligence, increase concentration, provide stimulation to the brain and nervous system, and optimize the learning process (Duda, 2015; Demirakca et al, 2016; Komarudin & Mulyana, 2017; Komarudin & Awwaludin, 2019; Tejada et al, 2017). Increased intelligence affects the speed of athletes in learning kick skill two hurigi. The smarter the athlete, the higher the kicking skill two hurigi will increase even faster. Besides that, method kinetic life potentially optimizing teaching and learning processes, including learning branching technique skills (Tejada et al, 2017). With a more optimal learning process, it will certainly increase the speed of athletes in mastering kick technique skill two hurigi.

With a significant difference in effect, the results of testing the hypothesis through the statistical test above, it can be concluded that one treatment or treatment has a better effect than other treatments in improving the mastery of kick skill two hurigi. To find out which treatment has a better effect, it is done by comparing the average increase in mastery of technical skill two hurigi. The first conclusion in this study is that there is a significant difference in effect between the training method kinetic life and conventional training methods for mastering kick technique two hurigi in the sport of taekwondo martial arts. Observations in the field showed an increase in a positive direction towards the mastery of kick technique two hurigi on athletes in taekwondo sports (Branch Training Center) Kab. Kepahiang.

Based on the results of the two-way ANOVA calculations, the authors found the second conclusion that there was an increase between the training method and the level concentration on kicking technique mastery two hurigi in the sport of taekwondo martial arts. This means that on a sample that has a level concentration high training method kinetic life more

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significantly affect the mastery of kick techniques two hurigihan conventional training methods. On the other hand, in samples that have concentration the height of conventional training methods more significantly affects the mastery of kick techniques two hurigihan the conventional low concentration training method.

### IV. CONCLUSION

In this study, there is a significant difference in the influence between kinetic life training methods and conventional training methods on the skills of Tae Kwon do athletes' dual hurigi kick techniques. Observations in the field showed a positive improvement in the direction of the dual-hurigi kick technique skills in Tunas Harapan Academy Tae Kwon Do athletes.

Based on the results of the two-track anova calculation, the author found that there was an increase between the training method and the level of concentration on the skills of the Tae Kwon Do athlete's dual hurigi kick technique. This means that in samples that have a high level of concentration, the kinetic life training method significantly affects the mastery of the dual hurigi kick technique than the conventional training method, high concentration. In samples that have low concentration, the Life Kinetic training method significantly affects the mastery of the dual hurigi kick technique than the low concentration conventional training method.

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## The Economic Dimension in the Educational Activities (The Role of Economy in Education and Education in the Economic Development)



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**ABSTRACT:** The economic growth in a country is also influenced by the education. In the perspective of production function, educational institution with various activities can be categorized into a gigantic industry because of its massive resources and human resources involved. In the perspective of economy, educational activities cover two dimensions, consumption (short-term) and investment (long-term). The ongoing educational process will trigger the economic growth and at the same time, the learning young generations are exposed with the new knowledge and skills existed in the future which will become the driving force to the development of a country. Based on this understanding, it is okay to say that the development indicators of a country can be seen from the system and the implementation of its education. Liking it or not, the educational institution with the activities has become the industry with the economic paradigm. The shift of the paradigm is not without any cause, in order to make education not only exists but also stays on the front row in advancing the community - country. The principle of “managing education in business way but not turning education into business” became very relevant in the context of making educational institution developed and modern which meet the context and needs.

**KEYWORDS:** Economy, Education, and Economic Growth.

### I. INTRODUCTION

There is an improper view regarding the educational activities. The educational activities are seen as social activities for the society, that **Etzioni (1964)** considers as normative organization, the non-profit activities. This indicates that the educational activities have no relation with the concept, theory, and economic activities, thus the educational activities can run without considering economic concepts which can actually turn an organization's activities more dynamic and productive. Effectiveness, efficiency, productivity, and many others are some examples which might allow an organization to become dynamic

It is a fact that the educational growth influences the economic growth and the economic growth influences the educational growth. Based on this understanding, in advanced countries, the government's attention becomes so big towards education sector, which is shown in the political commitment on the education sector budget allocation which is as big as other sectors. It is because the investment of education sector will actually push the economic growth and will create social prosperity.

Truthfully, the problems in education cannot be separated from problems in economy. Directly and indirectly, the contribution of education towards economy and development must be acknowledged. Therefore, education must not always be considered as consumption and finance, but also must be seen as an investment with long term benefits. The concept of education as an investment is growing rapidly and believed by all nations that the development of education sector is the key of other sectors' development. The concept of human capital investment which can support the economic growth, has been discussed since the era of Adam Smith (1776), Heinrich Von Thunen (1875) and other classic theorists before 19th century, pointing out the importance of human capital investment.

Theodore Schultz in 1960 through his speech entitled “Investment in human capital” in front of The American Economic Association has become the pioneer in formulating the human capital theory. The essence of the speech is that the process to achieve knowledge and skills through education is not merely a consumption, but also an investment. **Schultz (1961)** then elaborates the concept by stating that the development of education sector with human as its main focus might give direct contribution towards the economic growth in a country, through skills and ability production from the workforce. The initial idea of this view has already attracted some experts to study the values of economy and education. In 1961, Bowman introduced a



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concept “the revolution of human investment in the economic thinking”. Researchers, like **Becker (1993)** and others also conducted a test on the human capital theory.

The new perspective has influenced the perspective and mind set of many parties, including governments, planners, international institutions, researchers, and other modern thinkers, along with the development executors of education and human resources. In the developed countries, besides serving as the consumptive aspect, education also becomes the human capital investment and leading sector or the main sector. Because the government attention on the development of this sector is serious, for example if the budget allocation commitment of education sector is as big as other sectors, the success of investment in economic investment format (budget support) is addressed in education which is correlated with the advancement of macro development including the economic development itself.

The educational activities as an “industry” have become the important factor which triggers the economic growth and modernization of a country. Therefore, definite and systematic strategy to support the goal of education, to enrich the life of a nation, is needed. The mastery and the excellence of science and technology in a country will turn the country into a respected country. The importance of educational activities as the instrument of a country’s development creates the new perspective about the benchmark of a country's development. The indicator is no longer seen from the economic growth, but observed from how good the education system and practices are.

Considering the explanation above, the researcher attempts to conduct research on the theme focusing on the co-relativity and synergy dimensions between education and economy. The results of the research are expected to construct the substantive thoughts (not dichotomy and partial) about the role of economy and education and education in the economic development itself.

### II. METHOD

This research implemented descriptive quantitative approach. Based on the type of data, this study emphasized the analysis of the relationship between observed phenomena using scientific logic without statistical analysis (Sugiyono, 2015; Denzin & Lincoln, (2018). The expected result of the research is to obtain the picture of co-relativity and synergy dimensions between education and economy. It is with the hope to construct the substantive thoughts (not dichotomy and partial) about the role of economy and education and education in the economic development. After obtaining the qualitative data, the data were analyzed based on the observation or finding in the field.

The collected data in this study consisted of two types: primary and secondary data. The primary data were obtained from **interviews** with selected informant, direct **observations** on selected activities, **documents** related to this thema. Meanwhile, secondary data were obtained from **library research** (books, journals, previous studies, and various concepts) regarding character education written by experts (Creswell, 2016; Sugiyono, 2015). **Observation** technique was done by observing the participants, in which the researcher was also involved directly in the relevant economy and educational activities implementation. **Interview** technique was done by interviewing the chosen research subjects and by considering its relevance with the focus of the research. In-depth interview was applied to the informants with the qualification of economic and educational practitioners. To complete the research data, the researcher also used **documentation** technique involving the documents about educational activities in economic dimension. **Library research** served as the supporting method especially in gathering the secondary data related to the theories relevant with the research theme.

By implementing these methods, the research is expected to get the valid data which are relevant to the theme and focus of the research qualitatively and quantitatively, dan to describe clearly the co-relativity and synergy dimensions between education and economy objectively which shows the actual condition of subject/object based on the facts being studied. After the data from the field were collected, they were then processed and analyzed in three stages, (1) data reduction, (2) data display, and (3) verification (Sugiyono 2015). These three components were interactive and interrelated. At the stage of data reduction, important, meaningful, and relevant data were categorized and grouped. After that, those data were presented with a good writing framework so that it can be understood by readers. Then, conclusions were drawn (Creswell, 2017)

### III. DISCUSSION

#### A. Economic Influence on Education

##### 1. Education as an Investment

The growing opinion implies that the development of the education sector is only a sector that is budget-consuming with no clear benefits (especially economically). Such a view leads people to doubt and even distrust the development of the education sector as the foundation for development progress in all sectors.

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This uncertainty, for example, is manifested in the small budget commitment for the education sector. Allocating the budget for the education sector is considered a waste of money that is meaningless. As a result, the education sector budget allocation is usually remainder. This perspective has now begun to be displaced in line with the discovery of scientific ideas and evidence of the vital role and function of education in understanding and positioning human beings as the main force as well as a prerequisite for development progress in various sectors.

In the 1970s, research on the relationship between educational and economic growth experienced stagnation and ambivalence due to the emergence of doubts about the role of education on economic growth in several countries, especially in the United States and developed countries that received assistance from the World Bank at that time. These doubts arose, among others, because of the criticisms of educational sociologists including **Becker (1964, 1975, 1993)** who stated that this theory of human capital emphasizes the material dimension of humans so that it does not consider humans from the socio-cultural dimension.

Becker's critique actually opened the perspective of a philosophical belief that education is not only counted as an economic investment, but more than that, education must be seen in the social and cultural perspectives and dimensions that are oriented towards the human dimension. These perspectives and dimensions are more important than just economic investment as education is related to humanity itself (human dignity).

Several other neoclassical studies have been able to scientifically reaffirm the importance of educated humans in directly supporting economic growth and all other macro development sectors. It is based on scientific belief that the World Bank has finally realized its international aid program in various countries. The contribution of education to this growth becomes even stronger after considering the interaction effect between education and other physical investments. It means that the physical capital investment will increase its added value in the future if at the same time investment in human resources is also made, which will directly become actors and users in the physical investment.

It is now approved that the development of a country's human resource is a key to prosperity and growth and for the effective use of its physical capital resources. Investment in human capital is an integral component for all development efforts. Education must cover a broad spectrum in the life of society itself.

### 2. Investment in Education

Investment means investing capital or money. Capital or money invested aims at gaining profit, either in the form of money or capital or in the form of goods or services. **Kenneth J. Arrow (1962)** suggests that the term investment is the allocation of current resources that have productive alternatives which are useful for carrying out activities that can increase profits obtained in the future. The cost of an investment is the profit obtained divided by the use of resources in various other activities. Thus, it is clear that investment is capital or money investment that is intentionally made to bring profits through the products produced.

Meanwhile, education is a human effort to build humans themselves with all their problems and spectrums regardless of the dimensions of time and space. This means that the core of education is lifelong learning, while forms of formal education, non-formal education (outside school) and so on are only the modus operandi of the educational process. Education here is intended to increase human dignity so that they have skills and abilities to increase their productivity. Therefore, the results of education will be a very useful human resource in the development of a country.

Investment in education means allocating costs for the implementation of education and taking advantage of the human resources prompted through education. In this context, education is seen as a human learning industry, meaning that education creates humans who have indispensable abilities and skills for the economy of a country to increase individual income as well as national income.

Thus, investment in education has a long period of time to be able to find out the results and even then, the results are not in the form of direct profits, but benefits for individuals who receive education and for the country. As an investment function, education makes a significant contribution in increasing the standard of living, quality of people, and national income especially in the following areas:

- a. The teaching and learning process ensures an open society (i.e., a society that is always willing to consider new ideas and expectations as well as to accept new attitudes and processes without sacrificing themselves).
- b. The education system provides the right foundation for the development and research results (the inherent guarantee for the sustainable growth of modern society). Educational investments can maintain the integrity and constantly increase the supply of knowledge and the continuous discovery of new methods and techniques.
- c. If in every economic sector we get all the factors needed by the society except for skilled labor, the investment in the education sector will increase per capita income in that sector, unless the social structure in the community is not profitable.

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d. The education system creates and sustains a supply of human skills in a flexible labor market. In addition, it is able to accommodate and to adapt in relation to the changing needs of the workforce and the changing modern technological society (Komaruddin, 1991: 14).

Investments in education focus the attention on humans as resources that will become human capital (Gary S. Backer, 1962). Human capital here refers to workforce as a factor of production that connects non-economic aspects of education to other economic aspects that have two essential characteristics, namely: (a) the quality of the workforce as a productive input cannot be divided and used separately, (b) the ability of the workforce cannot be transferred to others. According to Ace Suryadi (1991), the theory of human capital is reflected in skills, knowledge, and work productivity. It is further explained that there is an investment model in the form of human resources which directly or indirectly relates educational indicators on one side and economic indicators on the other side. The intended model is a cost and benefit analysis model for education (cost benefit analysis). This model is a very important methodology in conducting analysis for educational investment and can help decision makers to decide and choose among alternative allocations of limited educational resources to be able to provide the highest capability.

### 3. The Role and Function of Economy in Education

Although quite decisive, the role of the economy in education is not the main factor. There are other factors that determine the life and death of an educational institution more than the economy, namely the dedication, expertise and skills, and commitment of administrators and teachers. They are the key to the success of a school or college. It means that if administrators and teachers or lecturers have adequate dedication, are experts in their fields, and have skills in carrying out their duties, it is possible for educational institutions to be successful in carrying out their mission even with an inadequate economy. The function of economy in education is to support the smoothness process of education, not a capital that is developed to get abundant benefits. Here, the role of economy in schools is also a part of educational resources that enable students to develop cognition, affection, and psychomotor skills to become reliable workforce who are able to create their own jobs, have a work ethic, and can live sparingly. Apart from supporting the process of economic education, education also functions as a subject matter in economic problems in human life.

Therefore, the role of economy in education is limited to: (a) fulfilling educational needs that cannot be made alone, such as infrastructure and facilities, media, props, and so on, (b) financing all building equipment, such as water and telephone electricity, paying for services from all educational activities, (c) developing individuals who act economically, such as learn to live sparingly, (d) meeting the basic needs of educational personnel, (e) increasing work motivation, (f) increasing work enthusiasm of the educational personnel.

According to Kotler (1985), the role of economy in education is closely related to the analysis, planning, implementation, and supervision that provides changes in values as results of the educational process. To achieve it, Kotler defines the role or function of economy in the educational cycle and process as the following:

- a. **Administration Function.** (1) provision of learning infrastructure and facilities, including classrooms, (2) provision of learning equipment in schools, (3) provision of textbooks and laboratories, (4) teachers and personnel payments.
- b. **Psychological Function.** Improving student learning outcomes: personality improvement, aesthetic and skills, direction and attitude formation, strengthening abilities, increasing knowledge, science and technology, and sharpening the mind.
- c. **Production Function.** (1) determining the market needs/wants (competencies needed by the working world, (2) improving educational missions and programs (quality education), (3) improving community satisfaction and increasing efficiency in the educational process.

ADMINISTRATION FUNCTION	PSYCHOLOGICAL FUNCTION	PRODUCTION FUNCTION
Provision of learning infrastructure and facilities, including classrooms	Improving student learning outcomes: personality improvement, aesthetic and skills, direction and attitude formation, strengthening abilities, increasing knowledge, science and technology, and sharpening the mind	Determining the market needs/wants (competencies needed by the working world)
Provision of learning equipment in schools		Improving educational missions and programs (quality education)
Provision of textbooks and laboratories		Improving community satisfaction and increasing efficiency in the educational process
Teachers and personnel payments		

According to Mutrofin (1996), developed countries have a clear commitment in building the education sector. This commitment is implemented with a very clear economic support as well, in which the economic system is oriented towards educational needs

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that are based on the meeting of needs of modern society which include: high technology, flexibility, and mobility of the workforce. In the context and perspective of Indonesia, educational development has a strategic place with the emergence of Link and Match, this policy expects the world of education to prepare workers in accordance with the labor market, including quality, quantity, and types with adequate economic support.

According to **Vizey (1996)**, the most popular measure of looking at the role of the economy in education is the link between the economy and education itself. Vizey's opinion is based on the assumption that education is human capital. This thought emerged in the era of industrialization in modern society. This argument has two aspects: first, education is a form of national investment to improve the quality of human resources needed in modern economic growth. Second, education is expected to produce an increase in welfare and wider opportunities in real life.

The role of the economy in education, in this case, is to support the smoothness of the educational process and as an economic teaching material that forms economic people, namely humans who in their daily lives have the ability and habit of having a work ethic, do not work half-heartedly, are productive, and live efficiently.

### **4. Role (Economic Feedback in Education)**

Human resource development through education directly supports economic growth, and therefore spending on education should be viewed as a productive investment and not merely seen as something consumptive without a clear rate of return. Various other studies have always shown that the return value of human capital is greater than that of physical capital. No country in the world has progressed rapidly with the support of low-educated human resources. So, if we expect development progress, then human capital (education sector) must be used as the main prerequisite. Many developing countries, including Indonesia, face the problems mentioned above. The role of education, when studied economically, will contribute to the role of the government and society on the impacts that will be experienced by the Indonesian state in the long term in the future with education development policies as the basis of state development.

#### **a. Economic Value in Education**

The role of the economy in supporting education, which in its technical language is human capital, has not been included in the literature on economic growth theory for too long. Ari A. Pradana puts it forward to confirm the opinion of **Lucas (1990)** and **Mankiw, Romer, and Weil (1992)**, who revised the neoclassical growth theory of the legendary **Solow (1956)**. Their studies show that the standard Solow theory can only explain how a country's economy can grow, but is not sufficient to explain the gap in the level of income per capita between countries in the world. It was only when the human capital variable was taken into account that part of the gap could be explained.

The basic assumption in assessing the contribution of education to economic growth and reducing inequality is that education increases worker productivity. If worker productivity increases, economic growth will increase. On the other hand, an increase in productivity means an increase in income. It is always assumed that the benefits of increased education in the aggregate will be greater for the poor.

Thus, if the level of education increases, the income of the poor will also grow faster, and in the end, inequality will decrease. The problem is such assumptions cannot always be generalized. The benefits of education in terms of increased productivity and income of workers only apply to certain types of work. As a result, an increase in the level of education does not necessarily provide benefits to growth and equity, especially when we talk about the benefits of education for the poorest groups.

#### **b. Specific Economic Interventions in Education**

There is an opinion that education and educational policies are not beneficial for the prosperity of a country. This is a completely unfounded opinion empirically. The message to be conveyed is that many other things cause the positive contribution of education to not be too large in promoting economic growth and equity. In other words, education is not a magic spell. Consequently, government intervention in this field must also be carried out carefully.

The form of prudence is not to be trapped in measuring the government's role from the size of the education budget allocation. Budget is important, but not on how big, but planned, used for what, why, and how. In several developing Asian countries, although most teachers are paid too little, the ADB study shows that additional budgets for equipment and buildings improve education quality.

Apart from budget issues, the level of education in a country may face other problems beyond funding. Here, specific government intervention is needed to address these problems. For example, in Kenya, it was found that the low quality of basic education was caused by poor nutrition of primary school students due to intestinal worms. The distribution of deworming medicine to elementary school students was found to be more effective in improving the quality of education there.

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In conclusion, there is no universally predictable government policy in all countries. This is at the heart of the populist critique of neoliberal policies. The opposite is also true. There is no universally applicable populist policy. In addition, not everything can be solved with a bigger government budget.

According to **Ali (2005)**, Malaysia has experienced high progress in human resource development because, during the reign of PM Mahathir Mohamad, he had planned for future human resource development by making a fairly high investment of 28 percent of the state budget. Seeing this success, the Indonesian state, with the 1945 Constitution, which has been amended, gives a mandate to the government to determine the education budget at 20 percent of the state budget as stated in Article 31, Paragraph 4. Investment, described as a tangible form of intervention in the field of human resource development, is a long process. To support the success of the plan, education must be used as a benchmark for developing a country. However, education is like a horse-drawn carriage, meaning that the success of the educational process is a contribution from across sectors, namely labor, industry, economy, culture and so on.

### **B. The Role of Education in Economic Development**

Education contributes significantly to economic development. This has become an absolute and axiomatic justification. Various academic and empirical studies have proven the validity of this thesis. Education is a way to progress and achieve social and economic prosperity. Meanwhile, failure to build education will give birth to various crucial problems, such as unemployment, crime, drug abuse, and welfare defense which ultimately leads not only to the social aspect, but also to the economic burden that various parties, especially the government, will bear.

#### **1. Education and Economic Development (growth)**

Could there be educational intervention on development (economic growth)? Education has a representative carrying capacity for economic growth. **Tyler (1977)** reveals that education can increase a person's work productivity, increasing his income. This increase in income also affects the national income of the country concerned, which in turn will increase the income and standard of living of low-income people.

Meanwhile, Jones (1984) sees education as a tool to prepare an educated and trained workforce which is very much needed in the economic growth of a country. Jones sees that education has the ability to prepare students to become potential workers. This will make them more ready to train in their work which will boost the level of labor productivity, which will directly increase national income. According to him, the correlation between education and income appears to be more significant in developing countries. Meanwhile, **Vaizey (1962)** sees education as the main source of skilled and trained talents. Education plays an important role in providing a workforce. This should be the basis for educational planning because economic institutions require educated and trained personnels. The problem faced is that there is rarely a strong equivalence between work and required education, resulting in the emergence of educated and trained unemployment.

Therefore, it is necessary for education to anticipate needs (EDUCARE: Jurnal Pendidikan dan Budaya, <http://educare.fkipunla.net> Generated: 11 February 2009). In addition, it must be able to predict and anticipate the qualifications of knowledge and skills of the workforce. Employment prediction as a basis for educational planning must follow economic growth, which is related to the socio-economic policy of the government. Educational intervention in the economy is an effort to prepare economic actors to carry out the functions of production, distribution, and consumption. Interventions to the production function are in the form of providing the workforce for various levels, namely top, middle, and low management, or in extreme terms, blue-collar and white-collar workers.

In addition to labor, education also intervenes in production to provide strong entrepreneurs who are able to take risks in innovation in production technology. Another form of intervention is creating new technologies and preparing the people who use them. Production expansion programs through intensification and rationalization are a tangible manifestation of the role of educational institutions in this production function. Intervention in the distribution function is through the development of research and development of products that are in accordance with the needs and desires of the community or consumers. Interventions on the consumption function are carried out through increasing work productivity which will encourage increased income. This increase in income will lead to an increase in the consumption function, which is indicated by the increase in the amount of savings that comes from the income set aside. These savings will be a capital investment that will accelerate a country's economic growth rate.

#### **2. Measures of the Role (Contribution) of Education**

In economic development, what is the correlation between education and economic development? To answer the questions above, we cannot escape the problem of development. The concept of development in the economic field is very diverse and

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depends on the context in which it is used. Economists developed a theory of development based on the production capacity of human labor in the development process, later known as Investment in Human Capital. This theory is based on the consideration that the most efficient way of carrying out the national development of a country lies in increasing the capacity of its people. In addition, it is also hypothesized that the main factor that supports development is public education.

The basic assumption that underlies the correlation between education and workforce preparation is that education is held to improve skills and knowledge for work. In other words, education prepares workers who are ready to work. However, in reality, the unemployment rate in almost all countries increases by about 2% every year (**World Bank: 1980**). The occurrence of unemployment is not due to the failure of the educational process, but because education does not always have to produce graduates with certain types of work. Schools can produce workers with certain skills, but schools are not the only place to achieve these skills. There are various factors to measure how well economic growth is measured. These measures include (1) Per-capita income, (2) Changes in the employment map from agriculture to industry, (3) Energy consumption or use of high-tech goods such as cars, telephones, and televisions, (4) Improvements in system efficiency of community production as measured by GDP and GNP, (5) Satisfaction with meeting basic community needs, and (6) Achievement of goals by various groups in society, which is associated with the use of limited resources.

As an illustration, the pattern of correlation between education and economic development differs according to the unique characteristics of each country. In short, it looks like this:

### **a. Capitalist Countries vs. Socialist Countries**

The economy in a capitalist country assumes that its production model is free from government intervention and requires open competition in marketing. The correlation between education and economic growth is very close, and education is necessary. Economics in socialist countries has different contexts in interpreting economic growth and development. The government has a role in controlling the course of the production and marketing process. The correlation between education and economic growth and development seems invisible because development is highly regulated by the country, not determined by individual citizens.

### **b. Industrial vs. Non-Industrial Countries**

In the developed United States, the percentage of workers working in the industrial sector is 33%, and in the service sector, 66%. The percentages in the same sector in Mexico are 23% and 33%, respectively. In developed countries, the population has higher per capita income, use of sophisticated technology, and energy consumption greater than in less developed countries. Developed countries have greater capital accumulation due to excess income after deducting consumption needs. This results in a larger amount of savings and will eventually be reinvested in the existing economic system. The correlation between education and development in developed countries is very clear from the changes in individual characteristics related to the level of economic growth.

In non-industrialized countries, the economy is highly dependent on the agricultural sector, so a higher percentage of the workforce works in the non-industrial sector. It is clear how important the analysis of the contribution of education to development is. One of the reasons why there is so much controversy about the link between development and education is that very few education policies are properly monitored and evaluated for their results. Analysis of education is usually ex-post facto, meaning that data is obtained from past events.

Actually, the concept of how education should be evaluated must be developed since the objectives are set, considering the framework and methodology. The method that is often used in evaluation research is linear regression and educational production. Based on the foregoing, it is necessary to find criteria or measures of growth or development outcomes in order to discuss further the contribution of education to development.

According to human capital theory, the contribution of education is very influential on economic development. This contribution can be achieved through improving skills and work productivity. Rapid economic growth in Asian countries and progressive changes in production towards high-tech industries and services have resulted in increasing demands from the business world for the need for skilled and educated (quality) human resources. Quality human resources can only be produced by a quality education system as well.

According to **Armstrong and Taylor (2000)**, the role (contribution) that the world of education can do in economic development includes: (1) Creating skills in carrying out tasks, (2) Improving organizational quality, and (3) Supporting the growth of the industrial world (business).

According to **Psacharopoulos (1977)**, the opportunities that the world of education can take in supporting and improving the economy can be measured by: (1) The creation of a more productive workforce because it has better knowledge and skills and is relevant to the needs of the business world (industry), (2) The availability of wider business opportunities in an effort to build a

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higher quality education world, (3) The creation of a group of educated leaders, and (4) The availability of various education-based economic programs that encourage the emergence of competitive capabilities and output quality. Psacharopoulos continues that, by referring to these criteria and measures, to determine the correlation between education and economic development, the following data are needed: (1) Education data, which includes educational participation for each type and level of education, (2) National income, either in the form of Gross National Income, Gross Domestic Income, and Per capita Income, (3) Changes in the employment map, with a range of agriculture-services-industry, and (4) Energy consumption.

### IV. CONCLUSION

Although not the only factor influencing economic growth, the contribution of educational activities to economic growth is quite significant. The importance of the influence of educational activities on economic growth can be seen in increasing the learning productivity of the younger generation, which in time will become not only an object but also a development because of the competencies (knowledge and skills) obtained from educational activities. With economic needs that are increasing day by day, it is the education factor that will help economic growth because it will produce more professional qualities of human resources for both industrial and agricultural sectors. From there, influence will be created (directly or indirectly) on the economic growth of a country.

The concept of education as an investment which is described as an intervention of economic power (education as an investment), has developed rapidly, and every country increasingly believes that the development of the education sector is a key prerequisite for the growth of other development sectors. The concept of human capital investment that can support economic growth must also be built and developed from an economic structure and system that supports the birth of quality education.

Education contributes significantly to economic development. This has become an absolute and axiomatic justification. Various academic and empirical studies have proven the validity of this thesis. According to human capital theory, the contribution of education is very influential on economic development. This contribution can be achieved through improving skills and work productivity. Rapid economic growth in several Asian countries and progressive changes in production towards high-tech industries and services have resulted in increasing demands from the business world for the need for skilled and educated (quality) human resources. Quality human resources can only be produced by a quality education system and practice as well. The human capital theory assumes that formal education is the most important instrument to produce an economic order that has high productivity.

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## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun



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**ABSTRACT:** The study focused on the development and marketability of corn and banana flour nutri-bun using corn flour, banana peel flour, banana flesh flour and banana blossom flour which can be readily found in the locality. This product development research included four major phases; (1) development of corn and banana flour nutri-bun, (2) Determination of the nutri-bun's nutritive value, (3) determination of the level of acceptability of corn and banana flour nutri-bun, and (4) determination of the level of marketability of corn and banana flour nutri-bun. The level of acceptability of the finished products in terms of appearance/color, aroma, taste and texture was determined through a sensory evaluation by four different groups of respondents: Food experts and non-experts both male and female. The nutritive content of corn and banana peel flour nutri-bun, corn and banana flesh flour nutri-bun, corn and banana blossom flour nutri-bun corn and banana four nutri-bun were determined through a test by the Department of Agriculture (DA), Tuguegarao City, Cagayan. The laboratory results were interpreted by Nutritionist-Dieticians to determine whether the products were fit for human consumption.

Results of the study revealed that Sample 1, 2 and 3 described by the respondents as "*moderately acceptable*". Meanwhile, Sample 4 described by the respondents as "*highly acceptable*".

On the other hand, the level of marketability in terms of consumer demands, supply availability, and production cost described by the respondents were "*strongly agree*".

However, no significant difference were found in the level of acceptability of corn and banana flour nutri-bun as evaluated by the respondents.

The shelf-life of banana peel powder is three months, same with the banana blossom powder and corn flour. However, the banana flesh powder can be stored up to one month and three weeks. The nutri-bun products can be stored and best consumed until seven days from the production date.

**KEYWORDS:** Acceptability, Banana Fruit, Banana Blossom, Marketability, Nutritive Analysis, Shelf Life

### INTRODUCTION

In the Philippines, malnutrition is one of the most serious consequences of poverty. Filipinos must live on less food since they have less money to buy it; even when food is stable, it is widely available in some regions where people have enough money to buy it (Kim Thelwell, 2019)

And with an equal distribution of income, there is a lower need for food supply in undeveloped areas inhabited by low-income residents. Food quality is also declining - rice used to be the main source of food for the Filipino people, but has now been replaced by faster, cheaper but less nutritious noodles. As a result, malnutrition is widespread.

"The COVID-19 epidemic has made things very difficult," Nograles added. With all of COVID-19's issues, the government must do all possible to stretch our limited resources. In the face of these challenges, we must rely on the advancement of science and technology to bridge the gaps and give better Filipino children with the nutritious food they require to survive and grow.

"Nutribun is an example of the government's scientific approach to addressing hunger and malnutrition," Nograles continued. "DostFNRI Enhanced Nutribun is very tasty, very nutritious, has a better texture, is made primarily from squash to taste, and is enriched with protein, iron, and vitamin A, among other things."

Moreover, the Nutribun of the 1970s was a loaf of bread made with good intentions. Nutribun is designed as a simple "edible food" for community-based primary school nutrition programs to combat child malnutrition in the Philippines. Schools in economically depressed areas where children are underweight than their normal age were significant buyers of Nutribun (Orillos, J. 2018)

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Corn, on the other hand, is one of the Philippines' most significant crops. In terms of agricultural resource use, it is only second to rice. It is crucial for the development of the livestock and production industries because it is utilized not only for human consumption but also for animal feed and industrial application.

Fortunately, Ilagan today, acknowledged that the country's corn capital is experiencing economic development while playing a key role in Isabela province as its capital since its inception as a province.

The City of Ilagan is rich in varieties of bananas, including the well-known Saba. This is what makes delicious banana bread made of the best part of a banana tree. The peel of the fruit and its blossoms are among the most neglected parts of the plant. People often eat banana flesh and throw away the peel and leaves. Although banana flowers are cooked as patties and in other dishes, bread and baked goods are rarely used.

According to a magazine by Supaluck Kraithong and Utthapon Issara, the impact of environmental issues is influenced by agricultural waste from agriculture. To prevent the long-term problem, the development of additional products from agricultural production highlighted new technologies, theoretical approach to scientific theory, and the application of food science. The banana peel and banana blossom are classified as a product that empowers the development of a new food product. In addition, there are several scientific reports showing that leaf-like and flower-bearing structures are rich in macro-and micro-nutrient and beneficial health effects that promote an anti-inflammatory effect, or anti-inflammatory stress, etc. Because of its benefits, the scientist is trying to develop a banana leaf and blossom into new born food products such as plant-based meats, confectionery products and snacks.

As people today aim to be healthier, the researcher aims to show that being healthier is less expensive. Bread is made with sugar, a fat that should not be eaten daily. This research will also be of benefit to the agricultural industry, as Bananas and Maize are ubiquitous and known as a healthy fruit due to their many health benefits, with maize and especially white maize being the main products of the City of Ilagan. These raw materials are considered local products and are commonly found on farms, plains and mountains. San Antonio County in the City of Ilagan, Isabela is best known for its many banana varieties from Barangay Sindun Bayabo, Villa Imelda and other parts of San Antonio County. Most Barangay Towns grow maize as their livelihood.

The researcher aims to develop a basic diet that can be eaten during trial times. Foods that provide energy to the body and essential nutrients packed in a single batch. This is to address major problems during a disaster, and one of the government's programs is to combat malnutrition by providing healthy food. Public schools have their own meal plans and Local Government Units with the help of Barangay Health Workers provide a one-time supply system.

Also, the researcher wants to develop a new type of nutri-bun, a product that can be a source of income and socially acceptable for many benefits.

So, to make a difference, the researcher conducted the study using corn flour, banana fruit, and banana blossom to make nutri-bun products for the benefit of the people of Ilagan City, Isabela, and beyond. The main reason why the researcher is motivated and interested in further exploring and developing nutri-bun products that are not widely produced and given to both children and adults is because of their nutritional value.

Therefore, This study aims at the Development and Marketability of Corn and Banana Flour Nutri-bun.

## MATERIALS AND METHODS

The materials and methods used in developing corn and banana flour nutri-bun are presented below.

### Materials

The following tools, equipment and ingredients shall be used during the conduct of the study.

**Table 1. Tools and equipment used in the conduct of the study**

Preparation Tools	Measuring Tools	Mixing Tools	Cutting Tools	Equipment
Plates	Measuring spoon	Spatula	Dough cutter	Gas range
Bowls	Measuring glass	Spoon	Kitchen knife	Oven
Sifter	Measuring cup	Mixing bowl		Kneading machine
Tray		Rubber Spatula		Weighting scale
Plastic or Stainless				

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Basin				
Rolling pin				
Baking sheet				

Table 2. Ingredients use in the preparation of nutria-buns.

Ingredients	Sample 1 (Corn and Banana Peel Flour Nutri- bun)	Sample 2 (Corn and Banana Flesh Flour Nutri- bun)	Sample 3 (Corn and Banan a Blossom Flour Nutri- bun)	Sample4 (Corn and Banan a FlourNutri- bun)
	Measurements:	Measure ments:	Measurements:	Measurements:
Bananapeel (powder)	16 g.			5 g.
Banana flesh (powder)		16 g.		5 g.
Banana blossom (powder)			16 g.	5 g.
Corn flour	32 g.	32 g.	32 g.	32 g.
Bread flour	112 g.	112 g.	112 g.	112 g.
Yeast	1 tsp.	1 tsp.	1 tsp.	1 t.
Lukewarm Fresh milk	37.5 g.	37.5 g.	37.5 g.	37.5 g.
Sugar	30 g.	30 g.	30 g.	30 grams
Lukewarm water	37.5 g.	37.5 g.	37.5 g.	37.5g.
Egg	15 g.	15 g.	15 g.	15 g.
Margarine	1 Tbsp	1 Tbsp.	1 Tbsp.	1 Tbsp.

### Developmental Procedure

In order to perform the research properly, the flowchart of the procedures in corn and banana flour nutri-bun was followed consistently. The needed tools, equipment and ingredients were prepared in the preparation of nutri-bun. This study used corn flour, banana peel flour, banana flesh flour and blossom flour. The developmental procedure begins with selecting, sun drying, powdering, and storing corn flour. The banana peel flour began with washing, slicing, sun-drying, powdering and storing. The banana flesh flour started with peeling, slicing, sun-drying, powdering, and storing. Meanwhile, preparation for the banana blossom flour started with selecting, washing, slicing, sun-drying, powdering and storing. After the preparation of corn flour and banana peel, flesh and blossom flour, the preparation of nutri-bun came next. The entire process is shown in Figure 1.

### Data Gathering Procedure

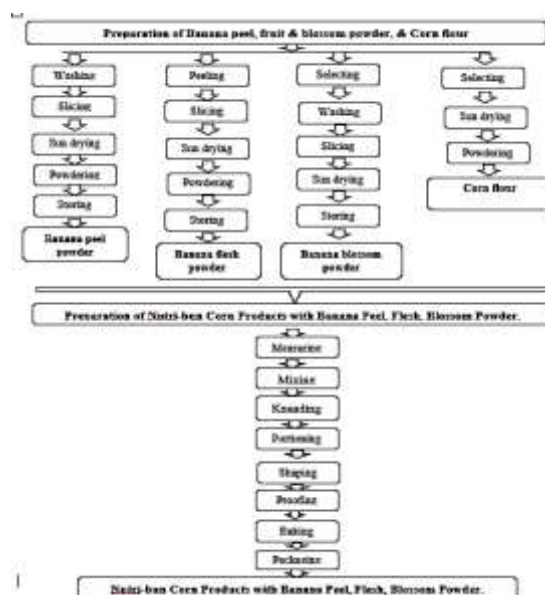


Figure 1. The flow diagram in corn and banana flour nutri-bun.

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Permission to conduct the study through sensory evaluation was conducted with the respondents consisting of food experts, adults, teenagers, and children.

After permission was granted, the administration of questionnaires followed. Directions in relation to the accomplishment of the questionnaires were discussed by the researcher to the evaluators personally. Copies of the questionnaire – checklist were retrieved after being accomplished by the respondents.

Following the safety protocol given by the Inter-Agency Task Force (AITF), the researcher and the participants wore a facemask and face shield during the conduct of the study. Also, social distancing and hand and body sanitation were strictly observed.

**Table 3. Range of numerical rating and its descriptive equivalent in Acceptability and Marketability of Corn and Banana Flour Nutri-bun.**

Scale	Numerical Rating	Descriptive Rating (Acceptability)	Descriptive Rating (Marketability)
5	4.5-5.00	Highly Acceptable	Strongly Agree
4	3.50-4.49	Moderately Acceptable	Moderately Agree
3	2.50-3.49	Acceptable	Agree
2	1.50-2.49	Slightly Acceptable	Moderately Disagree
1	1.00-1.49	Not Acceptable	Disagree

### Sensory Evaluation

The finished products was subjected to sensory evaluation. Forty (40) evaluators assessed the products, consisting of ten (10) Food experts from Bread and Pastry Production (BPP) Trainers of IPTC and ISAT TESDA and selected bakery shops of City of Ilagan, Isabela. As well as ten (10) Adults, ten (10) Teenagers, and ten (10) Children from the residents of Centro San Antonio, City of Ilagan, Isabela. The respondents were undergo sensorial evaluation of nutri-bun. Data on the appearance, aroma, taste and texture and general acceptability of nutri-bun were collected and decoded for statistical analysis.

The instrument used for data gathering was a questionnaire-checklist using qualitative analysis method to determine the acceptability of the products. The responses as to the level of acceptability of corn and banana flour nutri-bun in terms of appearance, aroma, taste and texture using five-point hedonic scale and the responses as to the marketability in terms of consumer demand, supply availability and production cost were as shown in Table 3.

## RESULTS

### Result of Acceptability of the Corn and Banana Flour Nutri-Bun in terms of Appearance, aroma, taste, and texture

Table 4 shows the results for the level of acceptability of the Corn and Banana Flour Nutri- Bun in terms of appearance, aroma, taste, and texture.

**Table 4. Level of acceptability of Corn and Banana Flour Nutri-Bun in terms of appearance, aroma, taste, and texture**

Sensory characteristic	Corn And Banana Peel Flour Nutri-Bun		Corn And Banana Flesh Flour Nutri-Bun			Corn And Banana Blossom Flour Nutri-Bun		Corn And Banana Flour Nutri- Bun	
	Means	Desc.	Means	Desc.	Means	Desc.	Means	Desc.	
Appearance	4.00	MA	4.55	HA	4.23	MA	4.55	HA	
Aroma	3.53	MA	4.30	MA	4.10	MA	4.68	HA	
Taste	3.55	MA	4.00	MA	3.93	MA	4.73	HA	
Texture	3.85	MA	4.30	MA	4.08	MA	4.70	HA	

\*1.00-1.49: Not Acceptable (NA); 1.50-2.49: Slightly Acceptable (SA); 2.50-3.49: Acceptable (A); 3.50-4.49: Moderately Acceptable (MA); 4.50-5.00: Highly Acceptable (HA)

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Table 4 presents the level of acceptability of corn and banana flour nutri-bun as perceived by the different groups of respondents in terms of sensory characteristics. Based on the sensorial evaluation, Sample 1 was rated “moderately acceptable” in terms of appearance (4.00), aroma (3.53) taste (3.55) and texture (3.85).

Sample 2 was rated “moderately acceptable” in terms of aroma, taste and texture as indicated by the obtained means of 4.30, 4.00 and 4.30 respectively. However, it was rated “highly acceptable” in appearance (4.55), which means its appearance was very favorable to the respondents due to its light, soft and creamy taste which please the taste buds of adults and children. They also like its aroma and smooth texture making it melt in their mouth.

However, Sample 3 was rated “moderately acceptable” by the evaluators in terms of appearance (4.23), taste (3.93), and texture (4.08). It indicates that Sample 1 and Sample 3 are least palatable to the respondents. It is because the flour used in Sample 1 and sample 3 affected the appearance of the nutri-buns making them less attractive and palatable. They had coarser texture than those of Sample 2 and Sample 4.

Lastly, it can be noted that Sample 4 was rated by the respondents as “highly acceptable” in terms of appearance (4.55), aroma (4.68), taste (4.73) and texture (4.70). This means that the fourth sample was the most liked product by the respondents. This is because the appearance of Sample 4 was lighter and more pleasing than Sample 1 and 3. It is the softest nutri-bun of the samples. It also has smooth texture and natural aroma.

### Result of Marketability of Corn and Banana Flour Nutri-Bun as evaluated by the evaluators in terms of consumer demands, supply availability, and production cost

Table 5 shows the results for the level of marketability of Corn and Banana Flour Nutri-Buns evaluated by the evaluators in terms of consumer demands, supply availability, and production cost.

**Table 5. Level of marketability of Corn and Banana Flour Nutri-Bun as evaluated by the evaluators in terms of consumer demands, supply availability, and production cost**

	<u>Marketability Indicators</u>	<u>Mean</u>	<u>Description</u>
<b>A</b>	<b>Consumer Demands</b>		
1	The Corn And Banana Flour Nutri-Bun can meet the demand of market supply and consumers.	4.65	Strongly Agree
2	It can satisfy the consumers because of its nutritive value.	4.68	Strongly Agree
3	It can be sold at a lower price compared to other commercial breads.	4.60	Strongly Agree
4	It can be liked by people of all ages.	4.60	Strongly Agree
5	Corn And Banana Flour Nutri-Bun can give the consumer health benefits.	4.83	Strongly Agree
	<b>Sub-Mean</b>	<b>4.67</b>	<b>Strongly Agree</b>
<b>B</b>	<b>Supply Availability</b>		
1	Corn flour, Banana fruit and Banana blossom is available all year round.	4.63	Strongly Agree
2	The raw materials can be produced easily.	4.73	Strongly Agree
3	Dry ingredients in making Corn and Banana Flour Nutri-Bun like sugar, flour, yeast, and salt are locally available.	4.83	Strongly Agree
4	Liquid ingredients in making Corn And Banana Flour Nutri-Bun like evaporated milk, egg and water are locally available.	4.80	Strongly Agree
5	Corn And Banana Flour Nutri-Bun need less effort to produce.	4.50	Strongly Agree
	<b>Sub Mean</b>	<b>4.70</b>	<b>Strongly Agree</b>
<b>C</b>	<b>Production Cost</b>		
1	The ingredients cost less.	4.80	Strongly Agree
2	It can be prepared in your	4.53	Strongly Agree

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	own kitchen area.		
3	Less manpower is needed in making the products.	4.55	Strongly Agree
4	It needs less effort in producing the products.	4.63	Strongly Agree
5	It requires less capital in producing the products.	4.70	Strongly Agree
	<b>Sub Mean</b>	<b>4.64</b>	<b>Strongly Agree</b>
	<b>Overall Mean</b>	<b>4.67</b>	<b>Strongly Agree</b>

Results in Table 5 show that the level of marketability Corn and Banana Flour Nutri-Bun in terms of consumer demands, supply availability, and production cost is Very High, since the evaluators strongly agreed with the marketability indicators. The indicators A5 “Corn and Banana Flour Nutri-Bun can give the consumer health benefits” has the most agreeable rating when it comes to Consumer Demand with a mean of 4.83; B3 “Dry ingredients in making Corn and Banana Flour Nutri-Bun like sugar, flour, yeast, and salt are locally available” has the most agreeable rating when it comes to Supply Availability with a mean of 4.83; and C1 “The ingredients cost less” has the most agreeable rating when it comes to Production Cost with a mean of 4.80.

Furthermore, the sub means of 4.67, 4.70 and 4.64, and most importantly, the overall mean rating of 4.67 imply that the evaluators reveal that the product is favorable to the target market.

### Result of Comparison of Evaluation by Respondents on the level of acceptability of Corn and Banana Flour Nutri-Bun.

Table 6-9 show the results for the comparison in the level of acceptability of Corn and Banana Flour Nutri-Bun as evaluated by the evaluators when grouped according to respondents for each sample.

**Table 6. Analysis of variance results comparing the level of acceptability of Sample 1 (Corn and Banana Peel Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents.**

#### Descriptives

Age Group	N	Mean	SD	Descriptive Rating
Food Experts	10	3.750	.986	Moderately Acceptable
Adults	10	3.725	.777	Moderately Acceptable
Teenagers	10	3.500	.773	Moderately Acceptable
Children	10	3.950	.725	Moderately Acceptable

The table shows the means and standard deviations on the level of acceptability of Sample 1 (Corn and Banana Peel Flour Nutri-Bun) as perceived by the evaluators when grouped according to profile: Food Experts (M= 3.750, SD= .986); Adults (M= 3.725, SD = .777); Teenagers (M=3.500, SD= .773); and Children (M=3.950, SD=.725).

#### ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.017	3	.339	.503	<b>.683</b>
Within Groups	24.281	36	.674		
<b>Total</b>	<b>25.298</b>	<b>39</b>			

**Legend:** \*significant at .05 level

Table 6 presents the analysis on the significant difference in the level of acceptability of Sample 1 (Corn and Banana Peel Flour Nutri-Bun) as perceived by the evaluators when grouped according to profile – the dependent variable being the profile group to which the evaluators were classified and the independent variable being the degree of the product’s level of acceptability. The

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result of the ANOVA revealed that there is *no significant difference* on the level of acceptability of Sample 1 (Corn and Banana Peel Flour Nutri-Bun) as perceived by the evaluators when grouped according to profile:  $F(3,36) = .503$ ,  $p = .683$ . Thus we failed to reject our null hypothesis. This implies that their perception on the level of acceptability of Sample 1 (Corn and Banana Peel Flour Nutri-Bun) does not differ when grouped according to profile.

**Table 7. Analysis of variance results comparing the level of acceptability of Sample 2 (Corn and Banana Flesh Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents**

### Descriptives

Profile Groups	N	Mean	SD	Descriptive
Food Experts	10	4.225	.721	Moderately Acceptable
Adults	10	4.275	.478	Moderately Acceptable
Teenagers	10	4.150	.530	Moderately Acceptable
Children	10	4.500	.333	Highly Acceptable

The table shows the means and standard deviations on the level of acceptability of Sample 2 (Corn and Banana Flesh Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents: Food Experts (M = 4.225, SD = .721); Adults (M = 4.275, SD = .478); Teenagers (M = 4.150, SD = .530); and Children (M = 4.50, SD = .333).

### ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.681	3	.227	.797	<b>.504</b>
Within Groups	10.263	36	.285		
<b>Total</b>	<b>10.944</b>	<b>39</b>			

**Legend:** \*significant at .05 level

Table 7 presents the analysis on the significant difference in the level of acceptability of Sample 2 (Corn and Banana Flesh Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents – the dependent variable being the profile group to which the evaluators were classified and the independent variable being the degree of the product's level of acceptability. The result of the ANOVA revealed that there is *no significant difference* on the level of acceptability of Sample 2 (Corn and Banana Flesh Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents:  $F(3,36) = .797$ ,  $p = .504$ . Thus, we failed to reject our null hypothesis. This implies that their perception on the level of acceptability of Sample 2 (Corn and Banana Flesh Flour Nutri-Bun) does not differ when grouped according to respondents.

**Table 8. Analysis of variance results comparing the level of acceptability of Sample 3 (Corn and Banana Blossom Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents**

### Descriptives

Profile Groups	N	Mean	SD	Descriptive
Food Experts	10	4.050	.695	Moderately Acceptable
Adults	10	4.000	.905	Moderately Acceptable
Teenagers	10	4.225	.558	Moderately Acceptable
Children	10	4.050	.725	Moderately Acceptable

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The table shows the means and standard deviations on the level of acceptability of Sample 3 (Corn and Banana Blossom Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents: Food Experts (M = 4.050, SD = .695); Adults (M = 4.000, SD = .905); Teenagers (M = 4.225, SD = .558); and Children (M = 4.050, SD = .725).

#### ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.292	3	.097	.182	.908
Within Groups	19.256	36	.535		
<b>Total</b>	<b>19.548</b>	<b>39</b>			

Legend: \*significant at .05 level

Table 8 presents the analysis on the significant difference in the level of acceptability of Sample 3 (Corn and Banana Blossom Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents – the dependent variable being the profile group to which the evaluators were classified and the independent variable being the degree of the product's level of acceptability. The result of the ANOVA revealed that there is *no significant difference* on the level of acceptability of Sample 3 (Corn and Banana Blossom Flour Nutri-Bun) as evaluated by the evaluators when grouped according to profile:  $F(3,36) = .182$ ,  $p = .908$ . Thus, we failed to reject our null hypothesis. This means that their perception on the level of acceptability of Sample 3 (Corn and Banana Blossom Flour Nutri-Bun) does not differ when grouped according to respondents.

#### Table 9. Analysis of variance results comparing the level of acceptability of Sample 4 (Corn and Banana Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents

##### Descriptives

Profile Groups	N	Mean	SD	Descriptive
Food Experts	10	4.725	.492	Highly Acceptable
Adults	10	4.600	.474	Highly Acceptable
Teenagers	10	4.500	.514	Highly Acceptable
Children	10	4.825	.265	Highly Acceptable

The table shows the means and standard deviations on the level of acceptability of Sample 4 (Corn and Banana Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents: Food Experts (M = 4.725, SD = .492); Adults (M = 4.600, SD = .474); Teenagers (M = 4.500, SD = .514); and Children (M = 4.825, SD = .265).

#### ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.606	3	.202	1.009	.400
Within Groups	7.212	36	.200		
<b>Total</b>	<b>7.819</b>	<b>39</b>			

Legend: \*significant at .05 level

Table 9 presents the analysis on the significant difference in the level of acceptability of Sample 4 (Corn and Banana Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents.



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Bun) as perceived by the evaluators when grouped according to respondents – the dependent variable being the profile group to which the evaluators were classified and the independent variable being the degree of the product's level of acceptability. The result of the ANOVA revealed that there is *no significant difference* on the level of acceptability of Sample 4 (Corn and Banana Flour Nutri-Bun) as evaluated by the evaluators when grouped according to respondents:  $F(3,36) = 1.009, p = .400$ . Thus, we failed to reject our null hypothesis. This means that their perception on the level of acceptability of Sample 4 (Corn and Banana Flour Nutri-Bun) does not differ when grouped according to respondents.

These results imply that the evaluators' respective profile groups is not a discriminating factor regarding their perception towards the acceptability of the Nutri-Buns across all samples.

This is similar to the studies of Joysree Roy and Md. Nazrul Islam (2020), Bandal, Suresh and Talib Mohammed (2014) which found that cornflour, banana peel, flesh and blossom powder can be utilized as main ingredients in making healthy breads.

### The Chemical Composition of Corn and Banana Flour Nutri-Bun to Moisture, Ash, Crude Protein, Crude Fiber, and Crude Fats.

In Table 10, the proximate analysis of Nutri-bun products was presented. Proximate analysis included the moisture content, ash content, crude protein content, crude fat content, total carbohydrates content and energy content. These analyses are important for determination of food quality, microbial stability and can be used for nutritional labeling. Based on the results of proximate analyses of the Corn and Banana Peel Flour Nutri-Bun, the percentage of crude protein is 7.54%, crude fiber .59%, crude fat 4.70%, Moisture content 24.48%, and Ash is .82%. Corn and Banana Flesh Flour Nutri-Bun, the percentage of crude protein is 7.36%, crude fiber .19%, crude fat 3.65%, Moisture content 27.10%, and Ash is .78%. Corn and Banana Blossom Flour Nutri-Bun, the percentage of crude protein is 7.91%, crude fiber .92%, crude fat 4.03%, Moisture content 26.99%, and Ash is 1.11%. Corn and Banana Flour Nutri-Bun, the percentage of crude protein is 7.36%, crude fiber 1.05%, crude fat 4.70%, Moisture content 26.95%, and Ash is .91%.

**Table 10. Proximate Analyses Results of Nutri-bun Products.**

Lab No.	Sample Description	Crude Protein	Crude Fiber	Crude Fat	Moisture	Ash
		%	%	%	%	%
FT-202 1-0253	Corn and Banana Peel Flour Nutri-Bun	7.54	0.59	4.70	24.48	0.82
FT-202 1-0254	Corn and Banana Flesh Flour Nutri- Bun	7.36	0.19	3.65	27.10	0.78
FT-202 1-0255	Corn and Banana Blossom Flour Nutri- Bun	7.91	0.92	4.03	26.99	1.11
FT-202 1-0256	Corn and Banana Flour Nutri- Bun	7.36	1.05	4.70	26.95	0.91

**Note:**1) Sample will be kept only for a month from the date received.

2) Environmental Conditions, Temperature: 25°C ±3, Relative Humidity: 40-60%

Protein content is an important factor for consumers of wheat and flour as it is related to many processing factors, such as water absorption. The protein content can also be associated with the characteristics of the finished product, such as texture and appearance. When proteins are combined with water, they form gluten (North American Export Grain Association. (2011)

Crude fiber was the measure of the amount of undigested cellulose, pentosan, lignin, and other components of this type in the current diet. (Braceros (2011)

Fat content determines free fatty lipids of flour. This structure can be used as a basis for determining processing

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temperatures and auto-oxidation which can lead to rancidity and can affect food taste.

Ash content refers to the mineral flour. Bakers should know the amount of ash as it will affect water absorption, nutrients (mineral content), fermentation function. Ash to flour can also touch color, giving it a darker color to finished products. Some specialty products that require mainly white flour call for low ash content while other products, have high ash (Keran, H., Salkić, M., et al., 2009).

Moisture provides a measure of water content and a solid content of flour. It also determines the storage capacity and quality of the flour. Above 14% high humidity attracts fungi, bacteria, and insects all in the last days. Organic matter in flour will begin to grow in high humidity, releasing odors and flavors.

NUTRITION FACTS		
Serving size: 46g		
No. of servings per container: 6		
Amount per Serving		%RENI
Calories (kcal)	149	6%
Calories from fat	20 kcal	
<b>Total Fat (g)</b>	2.2	-
<b>Total Carbohydrates (g)</b>	28.7	-
Crude Fiber (g)	0.3	-
<b>Total Protein (g)</b>	3.5	5%
<small>*Percent RENI values are based on 2015 RENI PDRI reference male adult requirement of 19-29 years old</small>		

**Figure 2. Nutrition Facts Results of Corn and Banana Peel Flour Nutri-Bun.**  
**SAMPLE NET. WEIGHT: 276 g**

Based on the results of nutrition facts analyses of the Corn and Banana Peel Flour Nutri-Bun. There are 6 number of servings in one container, each serving has 46 g weight having a total net weight of 276 g. It contains 149 kilo Calories 6% of Recommended Energy and Nutrient Intake based on male adult requirement. Calories from fat 20 kilocalories, 2.2 g. total fat, 28.7 g. Total Carbohydrates with .3 g. crude fiber, and 3.5 g.

Total Protein which makes the 5% Recommended Energy and Nutrient Intake.

NUTRITION FACTS		
Serving size: 46g		
No. of servings per container: 6		
Amount per Serving		%RENI
Calories (kcal)	141	6%
Calories from fat	15 kcal	
<b>Total Fat (g)</b>	1.7	-
<b>Total Carbohydrates (g)</b>	28.1	-
Crude Fiber (g)	0.1	-
<b>Total Protein (g)</b>	3.4	5%
<small>*Percent RENI values are based on 2015 RENI PDRI reference male adult requirement of 19-29 years old</small>		

**Figure 3. Nutrition Facts Results of Corn and Banana Flesh Flour Nutri-Bun**  
**SAMPLE NET. WEIGHT: 276 g.**

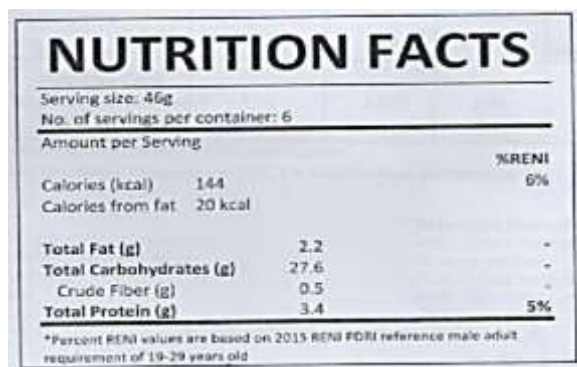
Based on the results of nutrition facts analyses of the Corn and Banana Peel Nutri-bun. There are 6 number of servings in one container, each serving has 46 g weight having a total net weight of 276 g. It contains 141 kilo Calories 6% of Recommended Energy and Nutrient Intake based on male adult requirement. Calories from fat is 15 kilocalories, 1.7 g. total fat, 28.1 g. Total Carbohydrates with 0.1 g. crude fiber, and 3.4 g. Total Protein which makes the 5% Recommended Energy and Nutrient Intake.

NUTRITION FACTS		
Serving size: 46g		
No. of servings per container: 6		
Amount per Serving		%RENI
Calories (kcal)	142	6%
Calories from fat	17 kcal	
<b>Total Fat (g)</b>	1.9	-
<b>Total Carbohydrates (g)</b>	27.6	-
Crude Fiber (g)	0.4	-
<b>Total Protein (g)</b>	3.5	5%
<small>*Percent RENI values are based on 2015 RENI PDRI reference male adult requirement of 19-29 years old</small>		

**Figure 4. Nutrition Facts Results of Corn and Banana Flesh Flour Nutri-Bun**  
**SAMPLE NET. WEIGHT: 276 g.**

## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

Based on the results of nutrition facts analyses of the Corn and Banana Flesh Flour Nutri-Bun. There are 6 number of servings in one container, each serving has 46 g weight having a total net weight of 276 g. It contains 144 kilo Calories 6% of Recommended Energy and Nutrient Intake based on male adult requirement. Calories from fat 17 kilocalories, 1.9 g. total fat, 27.6 g. Total Carbohydrates with .4 g. crude fiber, and 3.6 g. Total Protein which makes the 5% Recommended Energy and Nutrient Intake.



NUTRITION FACTS		
Serving size: 46g		
No. of servings per container: 6		
Amount per Serving		
Calories (kcal)	144	%RDI
Calories from fat	20 kcal	
Total Fat (g)	2.2	-
Total Carbohydrates (g)	27.6	-
Crude Fiber (g)	0.5	-
Total Protein (g)	3.4	5%

\*Percent RDI values are based on 2015 RDI/PDI reference male adult requirement of 19-29 years old

Figure 5. Nutrition Facts Results of Corn and Banana Flour Nutri-Bun  
SAMPLE NET. WEIGHT: 276 g.

Based on the results of nutrition facts analyses of the Corn and Banana Flour Nutri-Bun. There are 6 number of servings in one container, each serving has 46 g weight having a total net weight of 276 g. It contains 144 kilo Calories 6% of Recommended Energy and Nutrient Intake based on male adult requirement. Calories from fat 20 kilocalories, 2.2 g. total fat, 28.7 g. Total Carbohydrates with .5 g. crude fiber, and 3.4 g. Total Protein which makes the 5% Recommended Energy and Nutrient Intake

### Shelf - Life of Banana Peel Powder

1. After having produced the Banana Peel flour the researcher stored it in a clean, dry clear container and kept at room temperature.
2. The following was observed in the Banana Peel Powder kept at room temperature.  
**First week.** The banana peel flour had a perfect darkish color, neutral smell, perfect texture.
  - a. **Second week.** Same observation on the first week, there was a perfect darkish color, neutral smell, perfect texture.
  - b. **Third week.** Same observation on the 2<sup>nd</sup> week had a perfect darkish color, neutral smell, perfect texture, no molds, and no pest.
  - c. **Fourth week.** Same observation on the 3<sup>rd</sup> week had a perfect darkish color, neutral smell, perfect texture, no molds, and no pest.
  - d. **Fifth week.** The powder doesn't change its color, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed.
  - e. **Sixth week.** Same observation on the 5<sup>th</sup> week, the powder doesn't change its color, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed.
  - f. **Seventh week.** Same observation on the 6<sup>th</sup> week, the powder doesn't change its color, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed.
  - g. **Eighth week.** The powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell.
  - h. **Ninth week.** Same observation on the 8<sup>th</sup> week powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell.
  - i. **Tenth week.** Same observation on the 9<sup>th</sup> week powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell and still can be stored up to 1 month at room temperature.

### Shelf - Life of Banana Flesh Powder

1. After having produced the Banana Flesh Flour the researcher stored it in a clean, dry clear container and kept at room temperature.
2. The following was observed in the Banana Flesh Powder kept at room temperature..
  - a. **First week.** The banana flesh flour had a perfect dirty white color, no smell, perfectly fine texture.
  - b. **Second week.** Same observation on the 1<sup>st</sup> week, there was a perfect dirty white color, no smell, perfectly fine texture.
  - c. **Third week.** Same observation on the 2<sup>nd</sup> week had a perfect dirty white color, no smell, perfectly fine texture, no molds, and

## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

no pest.

**d. Fourth week.** Same observation on the 3<sup>rd</sup> week had a perfect perfect dirty white color, no smell, perfectly fine texture, no molds, and no pest.

**e. Fifth week.** The powder doesn't change its color, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed.

**f. Sixth week.** The powder quite change its color a little bit darker than its usual color, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed.

**g. Seventh week.** The powder change its color into a light brownish one, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed, may still be used as additive on buns.

**h. Eighth week.** The powder change its color into a dark brown, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed, may not be used as additive on buns, because it may affect the appearance and the palatability of the product.

### Shelf - Life of Banana Blossom Powder

1. After having produced the Banana Blossom flour the researcher stored it in a clean, dry clear container and kept at room temperature.

2. The following was observed in the Banana Blossom Powder kept at room temperature.

**a. First week.** The banana blossom flour had a perfect blackish color, strong smell of dried blossom, perfect texture gets easily powdered when touch.

**b. Second week.** Same observation on the first week, there was a perfect blackish color, strong smell of dried blossom, perfect texture gets easily powdered when touch.

**c. Third week.** Same observation on the 2<sup>nd</sup> week had a perfect blackish color, strong smell of dried blossom, perfect texture gets easily powdered when touch, no pests, no molds.

**d. Fourth week.** Same observation on the 3<sup>rd</sup> week had a perfect blackish color, strong smell of dried blossom, perfect texture gets easily powdered when touch, no pests, no molds.

**e. Fifth week.** The powder doesn't change its color, no sign of molds, the smell doesn't change nor produce a foul aroma, the strong smell of dried blossoms still there, there are no pests observed.

**f. Sixth week.** Same observation on the 5<sup>th</sup> week, the powder doesn't change its color, no sign of molds, the strong smell of dried blossoms still there, there are no pests observed.

**g. Seventh week.** Same observation on the 6<sup>th</sup> week, the powder doesn't change its color, no sign of molds, the smell doesn't change, there are no pests observed.

**h. Eighth week.** The powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell.

**i. Ninth week.** Same observation on the 8<sup>th</sup> week powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell.

**j. Tenth week.** Same observation on the 9<sup>th</sup> week powder is still fine, no sign of spoilage, no change in color, texture is still good, no sour smell and still can be stored up to 1 month at room temperature.

### Shelf - Life of Corn flour

1. After having produced the corn flour the researcher stored it in a clean, dry clear container and kept at room temperature.

2. The following was observed in the corn flour kept at room temperature.

**a. First week.** The corn flour had a perfect white color, smell like freshly dried corn, perfect texture.

**b. Second week.** Same observation on the first week, there was a perfect white color, no foul smell, perfect texture.

**c. Third week.** Same observation on the 2<sup>nd</sup> week had a perfect a perfect white color, no foul smell, perfect texture, no molds, and no pest.

**d. Fourth week.** Same observation on the 3<sup>rd</sup> week had a perfect a perfect white color, no foul smell, perfect texture, no molds, and no pest.

**e. Fifth week.** The powder doesn't change its color, no sign of molds, the smell doesn't change nor produce a strong aroma, there are no pests observed.

**f. Sixth week.** Same observation on the 5<sup>th</sup> week, the powder doesn't change its color, no sign of molds, the smell doesn't change, there are no pests observed.

**g. Seventh week.** Same observation on the 6<sup>th</sup> week, the powder doesn't change its color, no sign of molds, the smell doesn't change, there are no pests observed.

**h. Eighth week.** The powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell.

## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

- i. **Ninth week.** Same observation on the 8<sup>th</sup> week powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell.
- j. **Tenth week.** Same observation on the 9<sup>th</sup> week powder is still fine, no sign of spoilage, no change in color, texture is still good, no strong nor sour smell and still can be stored up to 1 month at room temperature.

### Shelf-life of Corn and Banana Peel Flour Nutri-bun

1. After having produced the corn and banana peel flour nutri-bun the researcher stored it in a clean, dry clear container and kept at room temperature.
2. The following was observed in the corn flour kept at room temperature..
  - a. **First day.** The corn and banana peel flour nutri-bun had a perfect taste, aroma, attractive and appealing to the eye, perfect texture.
  - b. **Second day.** Same observation on the first day, there was a perfect aroma, appearance, taste and texture.
  - c. **Third day.** Same observation on the 2<sup>nd</sup> day had a perfect taste, aroma, attractive and appealing to the eye, and perfect texture.
  - d. **Fourth day.** The nutri-bun taste was still good; aroma smelled good, nice appearance, and good texture.
  - e. **Fifth day.** Same observation on the fourth day. The taste was still good; aroma smells good, nice appearance, and good texture, no molds observed.
  - f. **Sixth day.** The nutri-bun was still delicious; smelled good and no sour smell, still appealing to the eye, and dough is soft and easy to slice, no molds observed.
  - g. **Seventh day.** Nutri-bun still tastes the same, no sour smell, no molds yet it became firm and compact, the porosity decreases.
  - h. **Eighth day.** Nutri-bun started to deteriorate its taste, slightly sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases.
  - i. **Nine day.** Nutri-bun already have medium sour taste, sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases. Not advisable to consume anymore.

### Shelf-life of Corn and Banana Flesh Flour Nutri-bun

1. After having produced the corn and banana flesh flour nutri-bun the researcher stored it in a clean, dry clear container and kept at room temperature.
2. The following was observed in the corn flour kept at room temperature.
  - a. **First day.** The corn and banana flesh flour nutri-bun had a perfect taste, aroma, attractive and appealing to the eye, perfect texture.
  - b. **Second day.** Same observation on the first day, there was a perfect aroma, appearance, taste and texture.
  - c. **Third day.** Same observation on the 2<sup>nd</sup> day had a perfect taste, aroma, attractive and appealing to the eye, and perfect texture.
  - d. **Fourth day.** The nutri-bun taste was still good; aroma smelled good, nice appearance, and good texture.
  - e. **Fifth day.** Same observation on the fourth day. The taste was still good; aroma smells good, nice appearance, and good texture, no molds observed.
  - f. **Sixth day.** The nutri-bun was still delicious; smelled good and no sour smell, still appealing to the eye, and dough is soft and easy to slice, no molds observed.
  - g. **Seventh day.** Nutri-bun still tastes the same, no sour smell, no molds yet it became firm and slightly compact, the porosity decreases.
  - h. **Eighth day.** Nutri-bun started to deteriorate its taste, no sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases.
  - i. **Ninth day.** Same observation to 8<sup>th</sup> day, nutri-bun already deteriorates its taste yet not sour, no sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases. Not advisable to consume anymore.
  - j. **Tenth day.** Nutri-bun has slightly sour taste, no sour odor, no molds yet it became firmer, and compact, the porosity decreases, size decreases. Not advisable to consume anymore.

### Shelf-life of Corn and Banana Blossom Flour Nutri-bun

1. After having produced the corn and banana blossom flour nutri-bun the researcher stored it in a clean, dry clear container and kept at room temperature.
2. The following was observed in the corn flour kept at room temperature.
  - a. **First day.** The corn and banana blossom flour nutri-bun had a perfect taste, aroma, attractive and appealing to the eye, perfect texture.

## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

- b. **Second day.** Same observation on the first day, there was a perfect aroma, appearance, taste and texture.
- c. **Third day.** Same observation on the 2<sup>nd</sup> day had a perfect taste, aroma, attractive and appealing to the eye, and perfect texture.
- d. **Fourth day.** The nutri-bun taste was still good; aroma smelled good, nice appearance, and good texture.
- e. **Fifth day.** Same observation on the fourth day. The taste was still good; aroma smells good, nice appearance, and good texture, no molds observed.
- f. **Sixth day.** The nutri-bun was still delicious; smelled good and no sour smell, still appealing to the eye, and dough is soft and easy to slice, no molds observed.
- g. **Seventh day.** Nutri-bun still tastes the same, no sour smell, no molds yet it became firm and compact, the porosity decreases.
- h. **Eight day.** Nutri-bun started to deteriorate its taste, slightly sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases.
- i. **Ninth day.** Nutri-bun already have medium sour taste, sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases. Not advisable to consume anymore.
- j. **Tenth day.** Nutri-bun has slightly sour taste, no sour odor, no molds yet it became firmer, and compact, the porosity decreases, size decreases. Not advisable to consume anymore.

### Shelf-life of Corn and Banana Blossom Flour Nutri-bun

- 1. After having produced the corn and banana blossom flour nutri-bun the researcher stored it in a clean, dry clear container and kept at room temperature.
- 2. The following was observed in the corn flour kept at room temperature.
  - k. **First day.** The corn and banana blossom flour nutri-bun had a perfect taste, aroma, attractive and appealing to the eye, perfect texture.
  - l. **Second day.** Same observation on the first day, there was a perfect aroma, appearance, taste and texture.
  - m. **Third day.** Same observation on the 2<sup>nd</sup> day had a perfect taste, aroma, attractive and appealing to the eye, and perfect texture.
  - n. **Fourth day.** The nutri-bun taste was still good; aroma smelled good, nice appearance, and good texture.
  - o. **Fifth day.** Same observation on the fourth day. The taste was still good; aroma smells good, nice appearance, and good texture, no molds observed.
  - p. **Sixth day.** The nutri-bun was still delicious; smelled good and no sour smell, still appealing to the eye, and dough is soft and easy to slice, no molds observed.
  - q. **Seventh day.** Nutri-bun still tastes the same, no sour smell, no molds yet it became firm and compact, the porosity decreases.
  - r. **Eight day.** Nutri-bun started to deteriorate its taste, slightly sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases.
  - s. **Ninth day.** Nutri-bun already have medium sour taste, sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases. Not advisable to consume anymore.

### Shelf-life of Corn and Banana Flour Nutri-bun

- 1. After having produced the Corn and Banana Flour Nutri-bun the researcher stored it in a clean, dry clear container and kept at room temperature.
- 2. The following was observed in the corn flour kept at room temperature.
  - a. **First day.** The Corn and Banana Flour Nutri-bun had a perfect taste, aroma, attractive and appealing to the eye, perfect texture.
  - b. **Second day.** Same observation on the first day, there was a perfect aroma, appearance, taste and texture.
  - c. **Third day.** Same observation on the 2<sup>nd</sup> day had a perfect taste, aroma, attractive and appealing to the eye, and perfect texture.
  - d. **Fourth day.** The nutri-bun taste was still good; aroma smelled good, nice appearance, and good texture.
  - e. **Fifth day.** Same observation on the fourth day. The taste was still good; aroma smells good, nice appearance, and good texture, no molds observed.
  - f. **Sixth day.** The nutri-bun was still delicious; smelled good and no sour smell, still appealing to the eye, and dough is soft and easy to slice, no molds observed.
  - g. **Seventh day.** Nutri-bun still tastes the same, no sour smell, no molds yet it became firm and compact, the porosity decreases.
  - h. **Eight day.** Nutri-bun started to deteriorate its taste, slightly sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases.

## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

i. **Ninth day.** Nutri-bun already have medium sourtaste, sour smell, no molds yet it became firmer, and compact, the porosity decreases, size decreases. Not advisable to consume anymore.

### Nutri-bun Products Costing

**Table 11. Corn and Banana Peel Flour Nutri-bun**

Item Description	Quantity	Cost (₹)
banana peel(flower)	16 grams.	.25
corn flour	32 grams.	2
bread flour	112 grams	5
Yeast	1 teaspoon	1
Lukewarm Fresh milk	37.5 grams	2.5
Sugar	30 grams	1
Lukewarm water	37.5 grams	-
egg	15 grams	2.5
Margarine	1 Tablespoon	2
LPG Gas	10%	2
Subtotal		18.25
Value Added Tax	10%	1.825
Total		20.045

Number of Yield: 7 Recipe Cost: ₹ 20.04

Mark-Up = RecipeCost x 30%	Selling Price = $\frac{\text{RecipeCost}}{\text{No. of Yield}} + \text{Mark-up}$
Mark-up	+ Mark-up
= ₹ 20.045 x 30%	
= ₹ 6.01	No. of Yield = 7
	= $\frac{₹ 20.045}{7} + ₹ 6.01$
	= ₹ 26.058 / 7
	= ₹ 3.72

Selling Price = ₹ 3.72 per yield

**Table 12. Corn and Banana Flesh Flour Nutri-bun**

Item Description	Quantity	Cost (₹)
banana flesh(flower)	16 grams.	.25
corn flour	32 grams.	2
bread flour	112 grams	5
Yeast	1 teaspoon	1
Lukewarm Fresh milk	37.5 grams	2.5
Sugar	30 grams	1
lukewarm water	37.5 grams	-
egg	15 grams	2.5
Margarine	1 Tablespoon	2
LPG Gas	10%	2
Subtotal		18.25
Value Added Tax	1.825	3.00
Total		20.045

## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

Number of Yield: 7 Recipe Cost: ₱ 20.045

Mark-Up = Recipe Cost x Mark-up = ₱ 20.045 x 30% = ₱ 6.01	Selling Price = $\frac{\text{Recipe Cost} + \text{Mark-up}}{\text{No. of Yield}}$ = $\frac{₱ 20.045 + ₱ 6.01}{7}$ = ₱ 26.058 / 7 = ₱ 3.72
Selling Price = ₱ 3.72 per yield	

**Table 13. Corn and Banana Blossom Flour Nutri-bun**

Item Description	Quantity	Total Cost (₱)
banana blossom (flour)	16 grams.	2
corn flour	32 grams.	2
bread flour	112 grams	5
Yeast	1 teaspoon	1
Lukewarm Fresh milk	37.5 grams	2.5
Sugar	30 grams	1
lukewarm water	37.5 grams	-
egg	15 grams	2.5
Margarine	1 Tablespoon	2
LPG Gas	10%	2
Subtotal		20.00
Value Added Tax	10%	2.00
Total		22.00

Number of Yield: 7

Recipe Cost: ₱ 22.00

Mark-Up = Recipe Cost x Mark-up = ₱ 22.00 x 30% = ₱ 6.6	Selling Price = $\frac{\text{Recipe Cost} + \text{Mark-up}}{\text{No. of Yield}}$ = $\frac{₱ 22.00 + ₱ 6.6}{7}$ = ₱ 28.6 / 7 = ₱ 4.09
Selling Price = ₱ 4.09 per yield	

**Table 14. Corn and Banana Flour Nutri-bun**

Item Description	Quantity	Total Cost (₱)
banana peel (flour)	1 teaspoon	.25
banana flesh	1 teaspoon	.25



## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

(flour)		
banana blossom (flour)	1 teaspoon	2
corn flour	32 grams.	2
bread flour	112 grams	5
Yeast	1 teaspoon	1
Lukewarm Fresh milk	37.5 grams	2.5
Sugar	30 grams	1
lukewarm water	37.5 grams	-
egg	15 grams	2.5
Margarine	1 Tablespoon	2
LPG Gas	10%	2
	Subtotal	20.50
	Value Added Tax	10%
	Total	22.55

Number of Yield: 7

Recipe Cost: ₱ 22.55

Mark-Up = Recipe Cost x Mark-up = ₱ 22.55 x 30% = ₱ 6.765	Selling Price = $\frac{\text{Recipe Cost} + \text{Mark-up}}{\text{No. of Yield}}$ = $\frac{₱ 22.55 + ₱ 6.765}{7}$ = ₱ 29.315 / 7 = ₱ 4.19
Selling Price = ₱ 4.19 per yield	

### CONCLUSIONS

In view of the findings above, the Corn and banana flour nutri-bun contains high calories enough to sustain the 6% of Recommended Energy and Nutrient Intake based on male adult requirement. It also has fat, carbohydrates, fiber, and protein. This study concludes that corn and banana flour nutri-bun follows strict processes was highly accepted by the group of respondents in terms of appearance, aroma, taste, and texture; corn and banana flour nutri-bun has the best sensory characteristics compared to other three samples. The corn and banana flour nutri-bun meet high level of marketability in terms of consumer demand, supply availability, and production cost. Significant differences found along with the product acceptability are due to varied perceptions of respondents belonging to different groups and backgrounds. These differences are also caused by varied ingredients of nutri-bun products used in producing the four products. The shelf-life of banana peel flour is three months, same with the banana blossom flour and corn flour. However, the banana flesh flour can be stored up to one month and three weeks. The nutri-bun products can be stored and best consumed until seven days from production date.

Overall, the Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-bun can be produced for home use and have high potential for commercialization.

### ETHICAL CONSIDERATION

The researcher ensured that the study was done in a way that was respectful of the participants and any people who might be affected by the research. The procedures were followed in accordance with the University's regulations and standards in which the panelist was participating.

## Corn (*Zea Mays*) and Banana (*Musa Acuminata*) Flour Nutri-Bun

### ACKNOWLEDGEMENT

The author expresses gratitude to all who have generously and selflessly contributed to the success of this project:

- To the Almighty God, who gives the researcher strength and faith in finishing this study.
- The researcher's family for their infinite understanding and great support along the process of this journey, and;
- The City of Ilagan Local Government for supplying additional data and information.
- The Researcher's family and friends for their infinite understanding and great support along the process of this journey.

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## Transformation of Man 2 Wonosobo as an Islamic Educational Institution



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**ABSTRACT:** Currently, madrasah have become educational institutions that have competitiveness so that they attract people's interest to send their children to study in madrasah. This is the fruit of institutional transformation as a result of the education system in Indonesia. The same thing happened in MAN 2 Wonosobo. This madrasah have now become high school educational institutions that are not only growing rapidly but also become the community's main choice. This study wants to discuss in depth the process of institutional transformation that occurs in the madrasah, whether the transformation erodes the characteristics of the madrasah or strengthens the distinction of the madrasah as an Islamic educational institution.

The results of this study indicate that MAN 2 Wonosobo have undergone a process of institutional transformation as a consequence of the enactment of the National Education System Law. The result of this transformation is that the madrasah become schools with Islamic characteristics. However, this transformation does not eliminate the characteristics of the madrasah as strong *tafaqquh fiddiin* Islamic educational institutions with studies and values of Islamic teachings. The vision of the madrasah has an influence on the orientation of the institutional development of the madrasah. MAN 2 Wonosobo has the orientation of strengthening the values of the madrasah by strengthening the concept of pesantren and developing the institutional vision as a national excellent madrasah.

**KEYWORDS:** transformation of madrasah, distinction of madrasah, *tafaqquh fiddiin*

### A. INTRODUCTION

As an educational institution, madrasahs have experienced their own development and dynamics along with the development of Indonesian society and also the long process of government policy in the field of education. From the beginning as an educational institution that only taught Islamic religious education (as an anti-thesis to schools founded by the Dutch which only pursued general education), to its current form which has equality with schools in general. The madrasa transformation is a sign of attention and recognition from the government for the existence of madrasahs as well as a positive response for madrasahs to developments and changes in society.

On the other hand, the level of public enthusiasm for education in madrasahs is getting higher. This is reflected in the trend of increasing numbers of students being accepted and studying at madrasahs. Data from the EMIS Dashboard of the Director General of Education, Ministry of Religion of the Republic of Indonesia shows that there has been an increase in the number and percentage of students in madrasahs at all levels (MI, MTs, and MA) throughout Indonesia in the three academic years 2017/2018, 2018/2019, 2019/2020. If in 2017/2018 the number of students in madrasahs was 8,563,903 or around 15.90% of all students in Indonesia, there was an increase in 2018/2019 where the number of students in madrasahs was 8,666,324 or 16.13%. Whereas in 2019/2020 the total number of madrasa students throughout Indonesia was 8,712,928, equal to 16.06% of all students at all levels (elementary, junior high and high school) throughout Indonesia (<https://emispendis.kemenag.go.id>).

The data shows that there is a constant and continuous increase in the number of students in madrasahs throughout Indonesia. This increase is also an indicator of increasing levels of public trust in madrasahs as educational institutions. The development of madrasahs in the last decade has actually coincided with the development of Islamic education in the context of schooling, namely with the emergence of "Islamic schools" (a term for elite Muslim schools which according to Azyumardi Azra is an effect of the santrization of Indonesian Muslim society). The development of these Islamic schools is an attempt to provide an answer to the concerns of the upper middle class Muslims who want quality schools that are able to provide guarantees for continuing education at their favorite tertiary level, as well as the hope that their children will receive a more comprehensive and well-established religious education than in other general schools (Azra, 2012: 92).

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When examined further, the increase in parents' interest in enrolling their children in madrasas has the same foundation as the development of Islamic schools, especially in the aspect of fulfilling the increasing religious enthusiasm of the community. The difference is that the Islamic school market segment is the upper middle class Muslim community, while madrasas are still the "home" for lower middle class Muslims. This is because Islamic schools are designed as superior schools with high costs, while madrasas are educational institutions that were born from the womb of Islamic boarding schools on the basis of rural Muslim communities.

Government policy through National Education System Law no. 2 of 1989 and updated again with Law no. 20 of 2003 places madrasahs in an advanced transformation process that positions them on a par with public schools. In this situation, madrasahs are faced with an advantageous position because their existence is increasingly being recognized and they can develop their work so that they can make the same contribution as public schools. But on the other hand, madrasahs also have the potential to lose their main character as Islamic educational institutions which are widely expected to be able to develop the repertoire of Islamic scholarship which is the main institutional distinction of madrasahs (Choiri dan Fitriani). If the madrasah is trapped in the vortex of market fulfillment interests, then the madrasah will lose its identity. Madrasahs in turn will be no different from Islamic schools.

The phenomenon as described above was found in MAN 2 Wonosobo. In the last three years, there has been an increase in public interest in enrolling their children in these two madrasah aliyah. The indicator is the continued increase in the number of registrants during PPDB (New Student Registration). Likewise, the increase in the number of students accepted in the two madrasahs. In the last three years, there has been an increase in registrants at MAN 2 Wonosobo. In 2018 the number of applicants was 711 people and 474 children were accepted. In 2019 689 applicants with 487 students were accepted. Whereas in 2020 the number of applicants was 684 and those accepted at the madrasah were 461. The number of students in the last three years at MAN 2 Wonosobo was very stable, namely 2018 the total number was 1306, 2019 was 1362, and in 2020 the total number of students was 1341 (Dokumen MAN 2). The increase in community interest and the number of students studying is a sign that the two madrasahs are increasingly being accepted by the community and have become the educational institutions of choice.

This quantity development was of course followed up by the two madrasahs with efforts to improve in terms of quality. Improving the quality of madrasahs is achieved by reforming and improving aspects of school management, the learning process, the completeness of educational facilities and infrastructure to the preparation of programs to support the talents and interests of students. The orientation of quality improvement is directed at the ability of students and schools to face competition from educational institutions. The real challenge for madrasahs is related to academic achievement, one of the indicators of which is the passing rate of the National Examination and the acceptance rate of tertiary institutions, especially PTN, for madrasah alumni. The same thing was expressed by Yusuf Hadiyono, a teacher at MAN 2 Wonosobo. In fact, he added that an indicator of the quality of madrasahs is when students are able to excel in competitions involving schools in general, such as science or mathematics Olympiads and others (interview, Yusuf Hadiyono).

The paradigm of madrasah education that follows the flow of schooling can also be seen in the format and distribution of student majors. At MAN 2 Wonosobo, at each grade level there are three majors, namely Mathematics and Natural Sciences (MIA), Social Sciences (IIS), and Religious Studies (IKA). At each level there are six parallel classes for the MIA major, four classes for IIS and two classes for IKA. Thus the percentage of students majoring in Religious Studies is 16.7% of all available majors in the two madrasahs. This means that students who concentrate on their religious education are a minority in madrasahs.

The presentation of the data above shows that there has been a shift in the identity of madrasahs from what were originally Islamic educational institutions concerned with religious education (*tafaqquh fiiddin*), or at least a synthesis between pesantren and public schools moving into educational institutions oriented towards general education. On the one hand, this shift is a consequence of the national education policy which is also desired by madrasahs themselves which demand equality between schools and madrasahs. On the other hand, madrasahs can lose their character and are almost no different from Islamic schools.

This article will describe the direction of madrasah development in responding to changes in society and maintaining its identity which is an institutional distinction in the midst of competitive educational institutions. This research is designed to explore the development of madrasahs as well as identify the characteristics of madrasahs that are still inherent so that they become a distinction from other schools, especially Islamic schools.

## B. METHOD

This paper uses a qualitative research method, where the research will be carried out through direct observation in the field by MAN 2 Wonosobo. Qualitative research method is a research method of a research approach that uses data in the form of words and actions that describe the views and experiences of the subjects studied (Sugiyono, 2012) Writing this paper uses a qualitative research method, where the research will be carried out through direct observation in the field by MAN 2 Wonosobo. Qualitative

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research method is a research method of a research approach that uses data in the form of words and actions that describe the views and experiences of the subjects studied

### C. RESULT AND DISCUSSION

#### History and Development of Madrasas in Indonesia

There are various theories and opinions about the origins of the development of madrasas in Indonesia. However, it can be said that the significant growth of madrasas occurred in the 20th century. Although the development of madrasas in the early 20th century cannot be equated with the development of madrasas in the Middle East which were also developing at that time. As mentioned by Maksum, in the Middle East madrasas have entered a modernization phase because they have adopted religious sciences and general sciences (Maksum, 1999: 98). In contrast to Indonesia, before entering the 20th century they were not familiar with the term madrasah, more familiar with the terms recitation of the Koran, mosque, Islamic boarding school, surau, langgar and others. In its educational operations, the system used is not a class system like modern schools, but a hierarchy based on the book to be studied (Drajat, 2018: 200).

According to Hasbullah, the emergence of madrasas in Indonesia was motivated by the following four things, namely:

1. As a manifestation and realization of the renewal of the Islamic education system
2. Efforts to improve the Islamic boarding school system towards an education system that allows graduates to have the same opportunities as public schools, for example the issue of equal employment opportunities and obtaining a diploma
3. There is a mental attitude among some groups of Muslims, especially students who are fascinated by the West as their educational system.
4. As an effort to bridge between the traditional education system carried out by Islamic boarding schools and the modern education system resulting from acculturation (Hasbullah, 1996: 163).

In contrast to Hasbullah, according to Maksum, the development and emergence of madrasas in Indonesia was motivated by two important things, namely, first, the widespread development of Islamic reform movements in the Middle East, including in Egypt. This renewal movement sparked and inspired the same movement in Indonesia, especially brought by students who were currently studying in the Middle East Region. The spirit of Islamic renewal in the Arab world is applied and developed when they return to their homeland. The second was a response to the educational policies of the Dutch East Indies colonial government which at that time applied double standards. The colonial government at that time only facilitated and developed education that benefited the government. Meanwhile, Islamic educational institutions were still considered a threat that would potentially endanger the existence of the Dutch East Indies government (Maksum, 1999: 93).

The Islamic reform movement that took place in the Middle East in turn became the trigger for the emergence of the Islamic reform movement in Indonesia. In Sumatra, among others, the Adabiyah Madrasa appeared which was founded in Padang by Shaykh Abdullah Ahmad in 1908. In 1915 this madrasa changed to HIS Adabiyah. Meanwhile in 1910 Shaykh M. Taib Umar also founded Madrasah Shcoel in Batusangkar, while H. Mahmud Yunus in 1918 founded Diniyah School as a continuation of Madrasah Schoel.

In Aceh the first madrasa was founded in 1930 named Saadah Adabiyah by Tengku Daud Beureuh. Madrasa Al-Muslim by Tengku Abdul Rahman Munasah Mencap, Madrasa Sarul Huda and many other madrasas. The same thing happened in East Sumatra, Tapanuli, South Sumatra, Kalimantan, Sulawesi, Java and others. Islamic organizations engaged in education have established many madrasas and public schools with various names, types and levels, including:

1. Muhammadiyah (1912) founded Madrasah Ibtidaiyah, Tsanawiyah, Muallimin/Muallimat, Muballighin/Muballighat, Madrasah Diniyah
2. Al-Irsyad (1913), founded Madrasah Awaliyah, Madrasah Ibtidaiyah, Madrasah Tajhiziyah, Muallimin and Tahassis.
3. Matlaul Anwar in Menes Banten founded Madrasah Ibtidaiyah, Tsanawiyah, Aliyah and Diniyah.
4. The Tarbiyah Islamiyah Association (Perti) (1928) founded madrasas with various names, including Islamic Tarbiyah Madrasah, Awaliyah Madrasah, Tsanawiyah, Sharia Kulliyah.
5. Nahdhatul Ulama (1926) founded Madrasah Awaliyah, Madrasah Ibtidaiyah, Tsanawiyah, Muallimin Wustha and Muallimin Ulya.

During the pre-independence period, it was the starting point for the development and growth of madrasas in Indonesia. Therefore, the formats and systems of madrasas that are developing are still varied, there is no form and system that is a common reference. The preparation of learning levels and curricula still adjusts to the needs and characteristics of each.

After the independence period, the development of madrasas entered a new phase. This is related to the policy of the Indonesian government which pays sufficient attention to the existence of madrasas, a policy that is very different from the colonial period. In 1950, the Indonesian government issued a policy of recognizing madrasas as educational institutions

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(Ramayulis, 2012: 350). Through Law no. 4 of 1950 concerning Fundamentals of Education and Teaching in Schools article 10 states that "Studying in religious schools that have received recognition from the Ministry of Religion is considered to fulfill the obligation to study". This is where the government through the Ministry of Religion requires madrasas to be registered with the ministry after fulfilling several requirements in implementing learning. Among these requirements is that madrasah institutions must provide religious lessons as a main subject for at least six hours a week regularly in addition to general subjects (Masykur, 2018: 39).

In 1956, the Ministry of Religion introduced the Madrasah Compulsory Learning (MWB) model, a model of religious education that was pursued for eight years. This MWB was directed as part of the government's initial efforts to foster and provide assistance to madrasas. With this concept, madrasas strive to have uniformity in curriculum materials and their delivery system, so that they can improve the quality of madrasas. However, the MWB program did not get a good reception from madrasa organizers because they were considered not to have sufficient requirements as an Islamic educational institution. So that in the next stage, the government accommodated input from the community by establishing a tiered system in madrasas, namely by introducing Madrasah Ibtidaiyah for 6 years, Madrasah Tsanawiyah First for 4 years and Madrasah Tsanawiyah for 4 years.

During the New Order era, since the issuance of MPRS Decree No. XXVII of 1966 concerning "Religion, Education and Culture", the government continued to try to improve the status of madrasas by policing many private madrasas at all levels, from Islamic Elementary Schools to Aliyah Islamic Schools throughout Indonesia (Maksum, 1999: 141). Through this program, at least it was recorded that there were hundreds of madrasas that were made into state madrasas which included 123 State Islamic Elementary Schools (MIN), 182 State Islamic Junior High Schools (MTsAIN) and 42 Islamic Aliyah Madrasas (MAAIN). Renewing the status of madrasas has implications for the development and management of madrasas which are fully the responsibility of the government. This makes it easier for the government to supervise and make policies.

The next big leap occurred in 1975 when the Ministry of Religion initiated the integration of the religious education system into a national education policy. This policy is contained in a Joint Decree (SKB) of 3 Ministers, namely the Minister of Religion, Minister of Education and Culture and Minister of Home Affairs. There are 4 main points in the SKB which was signed on March 24, 1975, namely:

1. Madrasahs cover three levels: MI at the same level as SD, MTs at the same level as SMP and MA at the same level as SMA.
2. Madrasah diplomas are considered the same as public school diplomas which are equivalent, meaning that madrasah diplomas are not only recognized by the Ministry of Religion but also recognized by the Ministry of Education and Culture of Indonesia.
3. Madrasah graduates can continue to public schools at a higher level.
4. Madrasah students can move to public schools of the same level (Masykur 2018: 41-42).

The existence of the SKB 3 Ministers is a big leap for madrasas because through this SKB the existence of madrasas as part of national education is increasingly recognized and even has equality. A situation that in the past was not owned by madrasas. Before this SKB was born, although madrasas were recognized as educational institutions, they had not been integrated as a unified system, so that there was no principle of equality in regulation, management and recognition of educational processes and products originating from madrasas.

The strengthening of the madrasa integration system in national education is further strengthened through Law on the National Education System no. 2 of 1989. As the executor of the mandate of this law, PP No. 28 and 29 of 1990 which regulates the education system in Indonesia. Based on these regulations, madrasas are categorized as public schools with Islamic characteristics. Thus, all general subjects taught in schools must also be taught in madrasas plus Islamic religious subjects as the hallmark of madrasas. Therefore, the curriculum used in MI, MTs and MA has similarities to the curriculum used in schools at the primary and secondary levels in Indonesia.

Entering the reform era, the national education policy was contained in Law no. 20 of 2003 concerning the National Education System (Sisdiknas). In the National Education System, substantially nothing has changed regarding the position and existence of madrasas. Madrasas are still recognized as part of the national education system and have equality with other educational institutions. In fact, its position is further strengthened by the direct mention of the term madrasa in the law. In the previous era, mention of madrasas was only found in Government Regulations, not in laws.

### **Position of Madrasas in the National Education System**

From a formal juridical point of view, the national education system has begun to find a standard format since the enactment of the National Education System Law (UUSPN) No. 2 of 1989. Through this law the government formulated a fairly comprehensive national education policy, including the regulation of madrasas (Islamic educational institutions). In this UUSPN it is stated that madrasas are public schools that are characterized by the Islamic religion. This law also states that the implementation of religious education is an integral part of the national education system (Nurhasnawati, 2015:90). This UUSPN is basically also a follow-up

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to the SKB 3 Ministers which was signed in 1975. An agreement that places madrasas on an equal footing with schools in general. This form of recognition and equality is manifested in the use of the same curriculum as set by the government. With this concept, madrasah (Islamic education) is part or sub-system of national education.

Nevertheless, the implementation of education in madrasas is under the Ministry of Religion. So that madrasas that are recognized for their existence and have equality with public schools are madrasas that have received recognition from the Ministry of Religion. The operationalization of madrasah integration into the National Education System is contained in PP Number 28 of 1990, Decree of the Minister of National Education Number 28 of 1990, Decree of the Minister of National Education Number 0487/U/1992 and Decree of the Minister of National Education Number 054/U/1993 which among other things stipulates that MI/MTs are required to provide at least lack of the same subjects as SD / SMP. Then the Ministry of Religion at that time followed up with the issuance of the Decree of the Minister of Religion Number 368 and 369 of 1993 concerning the Implementation of MI and MTs. For the Madrasah Aliyah level it was strengthened by PP Number 29 of 1990 and Decree of the Minister of National Education Number 0489/U/1992 which contained Madrasah Aliyah as a General High School with Islamic characteristics. Some of these regulations indicate that there is no longer a difference in status between madrasas and general education, which means that madrasas are an integral part of the national education system (Alawiyah, 2014: 54).

Entering the reform era, there was a change in legislation including national education. The government together with the DPR passed a new law on the national education system, namely Law no. 20 of 2003. The enactment of the Law on the National Education System (Sisdiknas) further emphasizes the position, existence and role of Islamic education institutions (madrasas) in the national education system. Madrasahs are firmly integrated into the National Education System which is parallel to general education under the Ministry of National Education. Not only that, because it is included in a distinctive type of education, madrasas have added value, namely there is an emphasis on Islamic Education which is more than formal education in general. In the National Education System Law, madrasah education is included in the category of religious education with formal channels. As described in Article 30 paragraph (1) and paragraph (2) of the National Education System Law that religious education is organized by the Government and/or religious community groups, in accordance with statutory regulations. Based on its function, madrasah functions to prepare students to become members of society who understand and practice the values of their religious teachings and/or become experts in religious knowledge.

According to Yahya (2014: 84) The process of integrating Islamic education (madrasa) into national education actually shows two important things, namely, first, making religious education (Islam) one of the mandatory contents that must be conveyed in learning at all levels and types of education in Indonesia. This position provides meaning related to the direction of national education which makes religion one of the foundations and important instruments in the educational process, so that education in Indonesia is religious-based education, not secular education. Second, this integration also provides direction for the development of madrasas as educational institutions in the school path category. If previously there was a "dualism" in the education model between schools and madrasas, then the enactment of the 1989 UUSPN and the 2003 National Education System Law explicitly and clearly placed madrasas in the schooling education system, madrasas have no difference from schools in their education system. The difference between madrasas and schools is in their management which is still under the Ministry of Religion and its main characteristics as a religious education institution (schools with religious characteristics).

Akhwan (2008: 44) states that as part of the national education system, madrasas are required to adapt to the pattern and direction of education policies that apply nationally. This is a consequence that must be faced because national education has standards in measuring the quality and achievement of educational goals that apply nationally. In order to achieve these national education standards, at the beginning of the implementation of the policy, namely after the implementation of the 1975 3 Ministerial Decree several major changes occurred in madrasas. These changes include, a) the adjustment of the madrasah curriculum to the state school curriculum which significantly changes the composition of the subjects taught. If previously religious subjects dominated the curriculum structure, now general subjects have the largest portion with a composition of 70:30. b) changes in the institutional structure, where many madrasas that previously had the status of private educational institutions changed to become state madrasas. Madrasa nationalization is part of an effort to guarantee the continuity of the process of achieving national education standards (Azra, 2012: 89). c) improving human resources, namely by recruiting many educators with non-religious educational backgrounds.

## **Transformation of Madrasas as Educational Institutions**

Historically, the emergence of madrasas in Indonesia is related to two main things, namely Dutch colonialism and the movement for Islamic reform in the Middle East (Maksum, 1999: 82, Steenbrink, 1994: 26-29). Dutch colonialism became the trigger because of the discrimination applied by the Dutch East Indies government in treating religious education, where religious education was

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not given free space to develop. Even the schools established by the government did not teach their students Islam at all, but they provided space for Christian religious education to develop through the schools that were established (Kosim, 2007: 44).

Meanwhile, the Islamic renewal movement in the Middle East has become an inspiration for scholars and Muslim leaders in promoting Islamic da'wah through the establishment of Islamic educational institutions, especially madrasas. The domination of the Dutch East Indies with a secular modern mindset had to be resisted by the existence of modern Islamic-based educational institutions. As a result of the influence of reforming ideas that developed in the Islamic world and the rise of the Indonesian nation, general subjects gradually entered the madrasah curriculum. Thus, actually in the pre-independence period, madrasas had adopted the Dutch East Indies style of modern education as well as teaching general knowledge to their students (Hasbullah, 1995: 169).

According to Subhan (2012: 223) that the recognition of madrasah education as part of the National Education System (Sisdiknas) actually existed after the enactment of Law Number 12 of 1954. This law became the first legal reference regarding the position of madrasas in the National Education System. However, this position does not place madrasas on a par with other government-owned educational institutions or public schools. The existence of madrasas as special educational institutions that have the same degree as schools under the auspices of the Ministry of Education at that time began to be recognized on March 25, 1975, namely with the issuance of a Joint Decree (SKB) of three ministers, namely the Minister of Home Affairs, Minister of Religion, and the Minister of Education and Culture (Alawiyah, 2014: 54).

The presence of the three ministerial decrees is a starting point that marks a major change in the transformation of madrasas as Islamic educational institutions. Because in this SKB madrasas are referred to as educational institutions that make Islamic religious subjects as basic subjects, which are given at least 30 percent in addition to general subjects. This SKB was followed up by implementing the 1976 curriculum which determined that the composition of general knowledge was more dominant than religious knowledge. From here the concept of equality and alignment of madrasas with public schools begins. With this equality, madrasah graduates have the same opportunities and opportunities to continue to a higher level and the roles that exist in society (Supa'at, 2014: 162).

The government's policy through the Joint Decree is seen as a clearer acknowledgment of the existence of madrasas and at the same time a real step towards the integration of madrasas into the national education system in a comprehensive manner. This is because in this decree a new definition for madrasas is given which is increasingly clear, namely as an educational institution that is equivalent to a public school, even though its management is still under the Ministry of Religion. This integration effort was followed up by the government with the formalization and structuring of madrasas, namely by admitting a number of madrasas that met the requirements and establishing new madrasas throughout Indonesia. Structuring is done by arranging the stages and formulation of the same curriculum as the curriculum structure and levels in schools under the Ministry of Education (Maksum, 1999: 134). With these two steps, madrasas are organizationally similar to public schools, in terms of education levels MI, MTs, and MA are equal to SD, SMP, and SMA, in terms of subject matter madrasah students receive teaching "general sciences" as taught at school.

The position and role of madrasas were reaffirmed in the National Education System Law Number 2 of 1989. In the National Education System Law it was stated that the task of madrasas is to prepare students to be able to carry out roles that require mastery of special knowledge about religious teachings. The curriculum in madrasas must include general knowledge, this shows that madrasas are an education that is integrated in the National Education System. The operationalization of the integration of madrasah into the National Education System is contained in PP Number 28 of 1990, Decree of the Minister of National Education Number 28 of 1990, Decree of the Minister of National Education Number 0487/U/1992 and Decree of the Minister of Education Number 054/U/1993 which among other things stipulates that MI/MTs are required to provide knowledge teaching generally at least the same as SD / SMP. This policy was followed up by the Ministry of Religion at that time by issuing Decrees of the Minister of Religion Numbers 368 and 369 of 1993 concerning Pimplementation of MI and MTs. For the Madrasah Aliyah level it was strengthened by PP Number 29 of 1990 and Decree of the Minister of National Education Number 0489/U/1992 which stated that Madrasah Aliyah as a General High School had Islamic characteristics. Some of the regulations above indicate that there is no longer any difference in status between madrasa education and general education, which also means that madrasas are recognized as part of the National Education System.

The National Education System Law Number 20 of 2003 further strengthened the position of madrasas as initiated in the National Education System Law Number 2/1989. Among the indicators is the explicit mention of madrasas which are always accompanied by the mention of schools. The juxtaposition of the term madrasah with this school was not found in the previous law. Apart from that, this National Education System law also accommodates the establishment of a "new" madrasa which was not recognized in the previous law, namely the Vocational Aliyah Madrasah (MAK). The existence of MAK is a strong indicator that



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the government has serious intentions in equalizing madrasas and schools. Thus, if in secondary schools there are SMKs, then in madrasas it is the same, there are MAKs.

### **The Character of Madrasas and Their Distinctions**

According to Hasbullah, there are at least four things behind the presence of madrasas as educational institutions, namely: first, as a manifestation and realization of the renewal of the Islamic education system; second, efforts to improve the pesantren system to an education system that directs its graduates to obtain the same opportunities as schools in general, this is related to certificate recognition and opportunities to enter the world of work; third, there is a mental attitude of some Muslims, especially the students who are fascinated by the school system by adopting a western system that tends to be secular; and fourth, as an effort to bridge the gap between the traditional education system organized by pesantren and the modern education system in the form of schools (Hasbullah, 1995: 163).

By paying attention to the context of the emergence of the madrasa, at least it can be understood that the madrasa is a form of convergence between traditional education in the form of Islamic boarding schools and modern education in the form of schools (Abdan, 2014: 192). So that the characteristics of madrasas as tafaquh fiddin institutions on the one hand cannot be dismissed. In this context, madrasahs must be able to become a place where religious and religious education that prioritizes the cultivation of Islamic character and the formation of noble character can obtain guarantees that it will be maintained. In addition, the madrasa is a place where Islam as a science and knowledge continues to be studied and developed so that its scientific repertoire is able to answer problems that develop in society and according to the era.

Even though it has characteristics that are very close to the scientific tradition of Islamic boarding schools, in the madrasa itself there is influence from the modern educational model which in institutional format, management and scientific structure is very different from pesantren. Therefore it is also important to understand that the modern school-style education model is also an integral part of the character of the madrasa. It is precisely with this modern educational model that madrasas are expected to continue to increase their capacity to synergize and at the same time compete with public schools to answer the challenges of the times and contribute to the progress of the nation and state.

Therefore, amidst the penetration of educational capitalization, market-oriented education and societal pragmatism, madrasas must be able to maintain their character as a distinction among educational institutions in general, including Islamic schools. Because if madrasas are stuck in the logical construct of educational capitalization and are market oriented, madrasas will be no different from Islamic schools. Thus the characteristics of the madrasa cannot only be seen from the mere presentation of religious subjects. That is, this characteristic is not only presenting Islamic religious subjects in madrasa institutions but more importantly is the embodiment of Islamic values in the totality of madrasa life. The atmosphere of the madrasa institution which gives birth to these characteristics contains the following elements: (1) the embodiment of Islamic values in the whole life of the madrasa institution; (2) actualized moral life, and (3) management that is professional, open, and plays an active role in society (Tilaar, 2004: 179).

### **Projection of Madrasas as Leading Educational Institutions**

In Indonesia, the term superior school was first coined by Wardiman Djojonegoro (Former Minister of Education and Culture) in 1994. The idea was born from a strong desire to present schools as educational institutions that have a far-reaching vision and insight into excellence. Even Djojonegoro expects that the presence of superior schools in every province in Indonesia will result in the distribution of knowledge and thus the next goal is to accelerate the increase in human resources (HR). Therefore, the presence of superior schools is not for discrimination, but to prepare quality human resources and have insight into excellence (Djojonegoro: 1998: 15).

The idea of a superior school has encouraged the development of the superior madrasah concept. Featured Madrasas are superior program madrasas that were born from the desire to have madrasas that are able to excel at the national and world levels in mastering science and technology supported by akhlakul karimah. In other words, the development of superior madrasas is parallel to the development of superior schools, each of which is developed to achieve excellence in its educational output. To achieve these advantages, inputs, educational processes, teachers and educational staff, management, educational services, and supporting facilities must be directed to support the achievement of these goals (Buchari & Saleh, 2016: 97).

According to Moedjiarto (2002: 34) in practice in the field there are three types of madrasas or superior Islamic schools. The three superior Islamic madrasas or schools, namely first, are types of madrasas or Islamic schools based on smart children. This type is that schools or madrasas only accept and strictly select prospective students who enter with the criteria of having high academic achievement. Even though the teaching and learning process in the madrasah or Islamic school environment is not too special or even mediocre, due to superior student input, it affects the quality of the output. Second, the type of madrasa or Islamic school is based on facilities. Islamic schools or madrasas of this kind tend to offer complete and adequate facilities to support their

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learning activities. This type tends to charge higher rates than the average school or madrasah in general. Third, the type of madrasa or Islamic school is based on the learning climate. This type tends to emphasize a positive learning climate in the madrasah environment. Educational institutions can accept and be able to process students who enter (input) with low achievements into graduates (output) with high quality. This third type is rather rare, because you have to work extra hard to produce good quality (Buchari & Saleh, 2016: 98).

According to Buchari and Saleh (2016: 99) in detail several main issues can be stated, both at the management and policy levels as follows:

1. Madrasah development is still patchy, this can be seen, for example, by holding a "skills" program attached to the regular program, as a response to the high number of Madrasah Aliyah graduates who cannot continue at the higher education level. Likewise with the "religious" program as a response to the weak mastery of religious knowledge by students, as well as the emergence of Superior Madrasah Aliyah (Insan Scholar), which is a saving measure. Although these programs have many benefits that can be taken for the madrasah development process, these steps do not seem to be based on a well-planned concept.
2. The madrasah curriculum is not yet "focused", this can be seen for example, the amount of material being taught is temporarily inadequate. At the Aliyah level, for example, students who wish to study religious sciences are still burdened with quite a large number of other irrelevant subjects. Conversely, students majoring in science must also be burdened with many other subjects that are not directly related. Another thing in the madrasah curriculum is that there is still duplication of material that is taught repeatedly in different subjects and also at different levels.
3. As a result of the curriculum that is not "focused" (too heavy and overlapping material), the educational process that occurs in madrasas is not in accordance with the vision and mission of madrasa education. Development programs that are partial, and do not depart from a planned design, are also identified as the cause of the madrasah's vision and mission not meeting with the education provided.
4. There is no blueprint for the development of madrasas, this is perhaps the most basic problem, so that the development of madrasas becomes directionless.

### Madrasa Institutional Transformation

MAN 2 Wonosobo is a madrasa that was born from an educational tradition that developed in Muslim communities, namely pesantren, more specifically Nahdlatul Ulama (NU), although with a slight difference in context. MAN 2 Wonosobo was established as the fruit of the transformation of the Mualimin Madrasa under the auspices of the al-Asy'ariyah Islamic Boarding School founded by K.H. Muntoha al-Hafidz. This madrasa was previously a PGA founded in 1963. In 1968 this madrasa was nationalized and changed to MAAIN Kalibeber. Like MAN 1 Wonosobo, MAN 2 is also a product of Islamic boarding schools, even the involvement of pesantren is crucial because it is the initial institution that sparked the establishment of madrasas. This is the purpose of the specific context differences in the establishment of the two madrasas.

The transition from private madrasas that were originally managed by pesantren or NU institutions to become state madrasas is certainly not easy and simple. This process requires a strong approach and commitment from both NU and Islamic boarding schools as the initial owner's institutions as well as the government. Changes in institutional status will certainly impact on all aspects of institutional development which in turn will also have an influence on the orientation and characteristics of the institution. In addition, what is even more substantial is the role and contribution of the community (Islamic boarding schools and NU) to Islamic education. If previously the pesantren and NU were the part that had the most interest in the existence and development of these institutions, their role would be reduced and might even disappear and turn to the government.

Until now, the two madrasas continue to experience development. As an educational institution under the Ministry of Religion, AN 2 Wonosobo has a development tendency that places madrasas in accordance with the mandate of the law as schools with Islamic characteristics. The term school here has implications for the educational system and institutions that are applied. Moreover, based on the National Education System Law, equality and equal treatment between madrasas and schools requires madrasas to follow the national education system. Madrasas must be in line with and in tune with the education policies developed by the Ministry of Education and Culture.

This concept is reflected in the implementation of educational policies included in the curriculum. Therefore, any curriculum policies implemented in schools under the Ministry of National Education will also be implemented in all madrasas in Indonesia. Likewise, MAN 2 Wonosobo is currently implementing the 2013 curriculum and Freedom to Learn as in high schools in general.

In the context of institutional development, the implication of implementing statutory regulations can be seen in the fulfillment of educational standards based on the eight standards of the National Education Standards Agency (BSNP). The achievement of

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these eight standards is the minimum formula for educational institutions to meet madrasah/school accreditation criteria. This is where the great influence of the national education system has had on the existence and development of madrasas in Indonesia MAN 2 Wonosobo. The madrasa currently has accredited A (excellent) status, which means that institutionally, both madrasahs have met educational standards that are above average. This status not only puts madrasahs on par with other educational institutions, but also shows the institution's readiness to compete with other public schools.

With these characteristics, MAN 2 Wonosobo continues to develop its institutional capacity in addition to the development of tahfidz and foreign languages, as well as the development of talents and interests that are oriented towards superior madrasahs. This madrasah has a strong spirit in building a competitive culture. As stated by the two Madrasah Heads, madrasahs now have to open their doors as wide as possible to compete no longer between madrasahs which are both under one ministry, but with other public schools. This means that the vision and orientation of institutional development does not refer to other madrasahs, but to other high schools in general.

### Madrasa Characteristics and Distinctions

The position of madrasahs as a subsystem of the national education system means that madrasahs must always be on the path of educational development that applies throughout Indonesia. This raises several consequences, namely 1) madrasahs have the same opportunity and role as other educational institutions (schools) in contributing to the progress of the nation, 2) madrasahs have the same position and potential as general educational institutions in developing the quality of their education. In addition to these advantages, madrasahs also have the potential to lose their main characteristics as a fiddiin tafaqih institution. This potential can become a reality if madrasahs are trapped in the rhythm of institutional development as educational institutions in general.

If you examine the processes that occurred at MAN 2 Wonosobo, this tendency is not so prominent, although several matters related to institutional development can be important notes in observing it. MAN 2 Wonosobo programs and policies are adjusted to the vision that has been set. Its vision is "Being pious, having good morals, achieving good results, having an environmental perspective and loving the Unitary State of the Republic of Indonesia". This vision illustrates the madrasah's commitment to continue to make religious values the basis for developing the institution. Piety and good morals are substantive values contained in Islamic teachings. From the vision and mission set by the two madrasahs, it can be seen that the characteristics of madrasahs as tafaqih fiddiin institutions are still maintained and become the most fundamental part of driving the institutional system.

Departing from the vision and mission of the madrasa, the reading of the characteristics of the madrasa at MAN 2 Wonosobo can be developed through several aspects, namely;

#### 1. Religious science

Like other Aliyah madrasahs throughout Indonesia, MAN 2 Wonosobo has a construction of religious scientific development which is arranged in the Islamic Religious Education (PAI) family. This PAI family includes Al-Qur'an-Hadith, Aqidah Akhlak, Jurisprudence, and Islamic Cultural History (SKI). This package is a compulsory subject in all madrasahs starting from MI, MTs and Madrasah Aliyah. Therefore, it can be said that in the structure of the kamadrasah curriculum there is no difference in the development of religious scholarship in madrasahs that are included in the PAI family (Group A) and are mandatory.

Differences in religious scholarship can be seen in the subjects included in Group B or in local content. For local content on religious aspects, MAN 2 Wonosobo stipulates a subject that must be followed by every student, namely Reading and Writing the Qur'an. The development of the Al-Qur'an Reading and Writing program in madrasahs is one of the priority agendas as a commitment to preparing the tafaqih fiddiin generation. This madrasa implements a special class for the tahfidz program in religious classes with a target of 15 chapters when students complete their studies. As for the regular program, this madrasa targets memorizing Juz 30 for all students when they complete their education at the madrasa (Karim, 2018). For students who do not yet have standard competence in reading and writing the Koran, MAN 2 Wonosobo applies the BTAQ program which is carried out during lessons.

Although in terms of content and focus of study/competence there are differences between Tahfidzul Qur'an and Reading and Writing of the Qur'an, both are developments in the development of Al-Qur'an-based religious knowledge as the main source of Islamic teachings. Therefore, in the context of the development of religious scholarship, the two madrasahs have a strong commitment to mastery of the Qur'an as the main characteristic of madrasahs as Islamic educational institutions as well as a differentiator from other educational institutions.

#### 2. Areas of expertise

Every educational institution or school certainly has a program in developing the skills of its students. Various programs are offered according to the characteristics, characteristics and potential of the school through extra-curricular activities.

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The concept of developing the skills of students at MAN 2 Wonosobo starts from the design of curriculum development which is directed at the formation of special classes, namely the existence of superior research classes and superior sports classes. According to Rofingu Khusnu Karim, the division of this special class is to facilitate and encourage students to focus on achieving maximum academic and non-academic achievements. Students in this superior class are also burdened with the target of completing the research program for the research class and non-academic achievements (sports competitions) for the superior sports class. So as to spur a culture of competition, in these two superior classes a degradation system is implemented (Karim, 2021).

Further development of the curriculum design as mentioned above, MAN 2 Wonosobo offers several extra-curricular activities to accommodate students' talents and interests. Some of the programs provided are counseling services, theatre, tech arts, scouting, the art of reading the Koran, self-defense martial arts, automotive skills, electronics skills, fashion skills, youth red cross, volleyball, soccer and ICT.

MAN 2 Wonosobo directs aspects of talent development interest in achievement orientation, so that all extra-curricular programs are packaged so that they are able to accommodate students to be ready to compete not only in the local area, but nationally. In fact, as mentioned by Prihantoro Ahmad (2021), Head of MAN 2 Wonosobo, the orientation of madrasa achievements is currently directed at achieving achievements in the international arena.

### **3. The value of religiosity**

The distinction of madrasas compared to other educational institutions (schools) is the formation of a madrasah environment colored by religious culture. This condition is a consequence of the madrasa as a tafaqquh fiddiin institution. The value of religiosity in madrasas is of course not enough only through a culture of religiosity in the ritual-normative aspect as developed in other public schools. The use of religious culture as an effort to internalize spiritual values is currently being developed by many schools such as through tadarus or praying together before starting lessons, praying dhuhur or dhuha in congregation, developing Islamic Spiritual activities (ROHIS) and others.

With a deeper and more well-established scientific background in Islam, it is appropriate for madrasas to develop religious values beyond what happens in public schools. This is where the role of the madrasa as a tafaqquh fiddiin institution finds its significance. Madrasas cannot only place religion as a means of ritual-normative worship, but religion as a source of inspiration and part of problem solving for all problems faced by society based on scientific development.

The curriculum at MAN 2 Wonosobo is basically the same as other madrasahs, which includes scientific studies in the PAI family as a basic knowledge that must be learned by all students at all levels and majors. The reinforcement is found in local content subjects where MAN 2 Wonosobo provides Reading and Writing of the Qur'an as a compulsory subject for all students.

From the data obtained, as described in the previous chapter, there are not many religious-based extra-curricular activities offered by MAN 2 Wonosobo, but this madrasah has initiated the creation of a superior class for tahfidz al-Qur'an with a fairly high target of memorizing 15 chapters for each participant. What is noteworthy is the orientation of this madrasa to become a superior madrasa by adding additional standards from the eight standards set by the BSNP, especially on standards for fulfilling school culture. Through this standard MAN 2 Wonosobo wants to reinforce Islamic culture that can be applied in the madrasah environment which includes several indicators, namely religious culture, clean culture, literacy culture, adiwiyata, musafahah, 3S (greetings, smiles, greetings), lughatain culture (Arabic and English).

The interesting thing about the academic environment of MAN 2 Wonosobo is that this madrasa is located in an area around which there are many Islamic boarding schools. So that many students of MAN 2 Wonosobo are also students from these Islamic boarding schools. Therefore, the pesantren culture is still very attached to patterns of interaction, communication and relationships between madrasah members. It is this cultural bond between the surrounding pesantren and the madrasa that until now the Madrasah Committee at MAN 2 Wonosobo has always been filled with Kyai or Islamic Boarding School caretakers around the madrasa.

### **Madrasa Development Vision**

Based on the data presented regarding the direction of the development of MAN 2 Wonosobo, with reference to the standards set by the National Education Standards Agency (BSNP) with eight educational standards, the madrasah has met the established criteria, and has even exceeded the accreditation achievements of both of them which have achieved excellence. (A). This achievement is of course of very positive value for madrasas because it is an indicator of success in institutional management and development.

MAN 2 Wonosobo has become a national flagship madrasa, thereby setting four additional standards out of the eight education standards from the BSNP. The four standards are 1) Student compliance standards, 2) School Environment compliance standards, 3) School culture compliance standards, 4) Superior madrasah compliance standards. Therefore, according to

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Prihantoro Ahmad (Head of Madrasah) the orientation of excellence in MAN 2 is directed at achievements on an international scale for certain fields. This superior orientation is implemented through academic and non-academic superior class programs.

As the biological child of a pesantren, MAN 2 Wonosobo is able to establish good communication with several Islamic boarding schools in the vicinity. This is reflected in the number of students who are also students at the pesantren. Another form of communication is the involvement of the pesantren through caregivers or their ustadz in a number of incidental activities held by the madrasa. In fact, as in MAN 2 Wonosobo there are several madrasah activities whose schedule must adjust to the pesantren's schedule of activities to accommodate the interests of the pesantren in the vicinity.

Even so, the madrasa does not yet have official cooperation as stated in a memorandum of understanding, or cooperation agreement. In fact, if the vision for the development of madrasas that was launched still prioritizes the characteristics of madrasas as tafaquh fiddiin institutions, then the role of pesantren in realizing this vision is an unavoidable necessity. In the long term, systematic collaboration is needed between madrasas and pesantren in synergizing to develop madrasas (MAN) so that they are more superior, competitive but do not lose their historical roots and main characteristics.

### D. CONCLUSION

Based on the discussion and analysis that has been described, the conclusion of this study is that institutionally, MAN 2 Wonosobo has undergone a process of transformation from what was originally a madrasah based on religious values with the pure concept of tafaquh fiddiin into a model educational institution with religious characteristics. This transformation is a necessity because of demands for community needs and the implementation of national education policies contained in laws and regulations. Until now, MAN 2 Wonosobo has transformed into a competitive Islamic educational institution and one of the main choices for the people of Wonosobo and its surroundings, especially those with an Islamic educational background.

As a result of the national education system policy, MAN 2 Wonosobo implements the same education system as other public schools. Even so, the character of tafaquh fiddiin as the main character and distinction of madrasas is still the values that are firmly held and underlie the development of its institutions and education. However, the character of tafaquh fiddiin faces a very big challenge from the reality of the needs and demands of fulfilling school education standards..

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## A Theoretical Study of Modelling and Simulation in Mathematical Sociology: Future Directions and Challenges



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**ABSTRACT:** Mathematical Sociology was established as an interdisciplinary field of research concerned both with the use of mathematics within sociological research as well as research into the relationships that exist between maths and society. Mathematical sociology utilizes mathematical and computational tools to analyse social phenomena, providing valuable insights into complex social systems. It forms a complementary sphere from disciplines like the sociology of knowledge and science that tries to understand the social roots of mathematics as well as the impact of maths has imposed on the society. This paper provides a comprehensive review of recent developments and studies in the field of mathematical sociology. The review covers key areas of research, including social networks, collective behavior, social dynamics, and modeling approaches. Various studies are examined, highlighting their contributions and methodologies. The paper concludes with future directions and challenges for the field.

**KEYWORDS:** Social System, Mathematical Modeling, Computational Simulation, Statistical Techniques.

### I. INTRODUCTION

Mathematical sociology is an interdisciplinary field that applies mathematical and computational tools to analyze and understand social phenomena. By utilizing mathematical models, statistical techniques, and computational simulations, mathematical sociology aims to uncover the underlying mechanisms and patterns that drive social behavior, interaction, and organization. This field offers a powerful framework for studying complex social systems, providing insights into various aspects of society, including social networks, collective behavior, social dynamics, and decision-making processes.

The use of mathematical modeling in sociology allows researchers to move beyond purely qualitative or descriptive approaches, enabling them to formulate precise hypotheses, test theories, and make quantitative predictions about social phenomena. Mathematical sociology offers a unique perspective, bridging the gap between theoretical and empirical research, by integrating formal mathematical models with empirical data to enhance our understanding of social processes (Skvoretz, 2016; Sato, 2013).

One of the fundamental areas of research in mathematical sociology is social network analysis. Social networks are composed of individuals or entities connected by various types of relationships, such as friendship, collaboration, or information flow. Mathematical tools enable researchers to investigate network structure, identify central actors or groups, study information diffusion, and explore the dynamics of social relationships. Social network analysis has been applied to diverse domains, including online social media, organizational structures, and the spread of diseases, ( Hummon & Fararo, 1995; Antunes & Costa, 2023; Venu et. al., 2021).

Another important aspect of mathematical sociology is the study of collective behavior and social dynamics. This field examines how individual actions and interactions lead to emergent properties at the collective level. Topics of interest include opinion formation, social influence, coordination, cooperation, and the spread of innovations or cultural traits within a society. Mathematical models can capture these dynamics and shed light on the mechanisms that drive the behavior of individuals in groups and shape social phenomena (Drury and Reicher, 2009; Bulatetskaya, 2019)

Modeling approaches play a central role in mathematical sociology, providing frameworks for understanding and simulating social processes (Alexander et. al.;1998). Agent-based models (North, M.J.,2014; Parker and Epstein, 2011), game

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theory (Adami et. al. 2016), and mathematical formalisms (Conte and Paolucci, 2014; Ball, 2002) offer tools to explore social phenomena by representing individuals or groups as autonomous agents with specific behaviors and interactions. These models allow researchers to simulate different scenarios, test hypotheses, and observe how macro-level social patterns emerge from micro-level interactions.

Mathematical sociology finds applications in a wide range of social science domains, including economics, political science, anthropology, and urban studies. It provides a quantitative foundation for studying economic markets, political decision-making, cultural transmission, and urban dynamics, among others. By incorporating mathematical rigor into these disciplines, mathematical sociology enhances our ability to analyze complex social systems and make informed policy decisions (Niezink et. al. 2019; Balzer,1990).

Looking ahead, the field of mathematical sociology faces several challenges and opportunities. The increasing availability of big data and advances in computational methods provide opportunities for analyzing large-scale social systems and testing more complex models. However, challenges exist in terms of data quality, ethical considerations, and the interpretation of results. Interdisciplinary collaboration between sociologists, mathematicians, computer scientists, and other social scientists will be crucial for addressing these challenges and advancing the field.

It is clear that mathematical sociology offers a powerful framework for studying social phenomena by leveraging mathematical modeling, statistical analysis, and computational simulations. It enables researchers to go beyond traditional qualitative approaches and provides a quantitative understanding of complex social systems. By exploring social networks, collective behavior, social dynamics, and modeling approaches, mathematical sociology contributes to our knowledge of how societies function and evolve. In this study, Modeling and simulation in Mathematical Sociology is discussed. Future Directions and Challenges are also analysed.

## **II. MATHEMATICAL MODELS IN SOCIOLOGY**

Mathematical models play a crucial role in sociology by providing formal frameworks to understand and analyze social phenomena. These models allow researchers to study complex social systems, make predictions, and test theoretical propositions. Here are some examples of mathematical models commonly used in sociology:

### **A. Agent-Based Models (ABMs)**

ABMs represent social systems as a collection of autonomous agents that interact with each other and their environment. These models capture individual-level behavior and decision-making processes, allowing researchers to observe emergent macro-level phenomena. ABMs have been applied to study various social phenomena, such as segregation, opinion dynamics, and the spread of diseases (North, M.J.,2014; Parker and Epstein, 2011).

### **B. Game Theory Models**

Game theory provides a mathematical framework to analyse strategic interactions among rational decision-makers. It models situations where individuals or groups have conflicting interests and make choices to maximize their own utility. Game theory models are used to study topics such as cooperation, conflict, bargaining, and social dilemmas (Adami et. al. 2016).

### **C. Network Models**

Network models represent social relationships as a network of nodes (representing individuals or organizations) connected by edges (representing relationships or interactions). These models capture the structure of social networks and allow researchers to study network properties, information diffusion, influence dynamics, and the spread of behaviors or opinions through network ties (Conte and Paolucci ,2014; Wang, et.al., 2012).

### **D. Diffusion Models**

Diffusion models aim to understand how innovations, behaviors, or information spread through a social system over time. These models typically involve differential equations or stochastic processes to describe the dynamics of adoption or diffusion. Diffusion models have been used to study the spread of innovations, cultural traits, or social contagion phenomena (David, 1991; Kumar and Sinha, 2021).

### **E. Social Influence Models**

These models focus on how individuals influence each other's beliefs, attitudes, and behaviors. They often incorporate concepts from social psychology, such as conformity, social norms, and social influence processes. Social influence models can include mathematical equations or computational simulations to capture the dynamics of influence within a social system (David, 1991; Flache et. al. 2017; Li et. al., 2018).



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### **F. Structural Equation Models (SEMs)**

SEMs are statistical models that examine the relationships between observed and latent variables to test hypotheses about complex social phenomena. They provide a framework to analyze causal relationships, mediation effects, and latent constructs. SEMs are commonly used to study topics like social mobility, inequality, and educational attainment (Goldberger, 1972; Shaheen et. al. 2017; Tarka, 2018).

## **III. FUTURE DIRECTIONS AND CHALLENGES**

### **A. Integration of Big Data**

One of the key future directions for mathematical sociology is the integration of big data into research methodologies. The increasing availability of large-scale datasets from online platforms, social media, and other sources provides opportunities to analyze and model social phenomena at unprecedented scales. However, challenges exist in effectively handling, analyzing, and interpreting such massive datasets. Future research should focus on developing innovative methods for extracting meaningful insights from big data while addressing issues related to data quality, privacy, and ethical considerations (Blazquez and Domenech, 2018; Valle and Kenett, 2018).

### **B. Computational Advances**

Advancements in computational power and techniques present new avenues for mathematical sociology. High-performance computing, parallel processing, and simulation methods allow for more complex and realistic modeling of social systems. Future research should explore the potential of these computational advances to refine existing models, develop new modeling approaches, and conduct large-scale simulations to understand social dynamics (Mason et. al. 2014; Wang, 2018).

### **C. Interdisciplinary Collaborations**

Mathematical sociology inherently requires collaboration between sociologists, mathematicians, computer scientists, and other social scientists. Future research should encourage interdisciplinary collaborations to address complex social problems and enhance the rigor and applicability of mathematical models in sociological studies. Collaborative efforts can lead to the development of new theoretical frameworks, methodologies, and more comprehensive understanding of social phenomena (Marla and Schneider, 1998; Bronstein et. al., 2010).

### **D. Dynamics of Online Social Networks**

With the rapid growth of online platforms and social media, understanding the dynamics of online social networks becomes increasingly important. Future research should focus on developing mathematical models to analyze the formation, evolution, and impact of online social networks, including the spread of information, influence dynamics, and the formation of online communities. This area also raises challenges related to data access, algorithmic biases, and the ethical implications of studying online behavior (Grabowicz et. al. 2013, Kozitsin, 2021; Li and Zhu, 2020).

### **E. Dynamics of Online Social Networks**

Mathematical models often abstract away from the complexity of human decision-making and agency. Future research should strive to incorporate a more nuanced understanding of human behavior and decision-making into models, acknowledging the social, cultural, and cognitive factors that influence individual and collective actions. Integrating insights from behavioral economics, social psychology, and cognitive science can enhance the realism and predictive power of mathematical models in sociology (Elder, 1994; Parsell et. al., 2017).

### **F. Ethical Considerations and Responsible Modeling**

As mathematical models become increasingly powerful tools in sociology, it is crucial to address ethical considerations associated with their use. Future research should actively engage in discussions on responsible modeling practices, transparency, and accountability in model design and interpretation. This includes considering the potential biases and unintended consequences of models, ensuring fairness and inclusivity, and actively involving stakeholders in the modeling process (Sivill, 2019; Bak, 2022).

### **G. Incorporating Long-Term Dynamics and Historical Context**

Many social phenomena exhibit long-term dynamics and are influenced by historical processes. Future research should strive to develop models that capture the temporal and historical dimensions of social systems. This includes considering the impact of historical events, path dependence, and feedback mechanisms on social processes. Longitudinal data and historical archives can provide valuable insights into the interplay between historical context and social dynamics (Redman et. al. 2004; Lin et. al., 2019).

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In conclusion, the future of mathematical sociology lies in leveraging big data, embracing computational advances, fostering interdisciplinary collaborations, and addressing ethical considerations. By integrating these elements and exploring new research directions, mathematical sociology can continue to provide valuable insights into the complex dynamics of social systems, informing policy decisions, and advancing our understanding of society.

### IV. CONCLUSION

Mathematical sociology offers a powerful framework for studying social phenomena by using mathematical modeling, statistical analysis, and computational simulations. It enables researchers to move beyond purely qualitative or descriptive approaches and provides a quantitative understanding of complex social systems. The recent developments and studies in mathematical sociology have contributed significantly to our understanding of social networks, collective behavior, social dynamics, and modeling approaches.

Social network analysis has emerged as a fundamental area of research within mathematical sociology, allowing for the exploration of network structures, identification of influential nodes, and analysis of information diffusion. Moreover, the study of collective behavior and social dynamics has provided insights into opinion formation, social influence, coordination, cooperation, and the spread of innovations or cultural traits. Mathematical models, such as agent-based models, game theory, and mathematical formalisms, have played a central role in capturing these dynamics and uncovering the underlying mechanisms of social phenomena.

Mathematical sociology finds applications in various social science domains, including economics, political science, anthropology, and urban studies. By incorporating mathematical rigor into these disciplines, it enhances our ability to analyze complex social systems and make informed policy decisions.

Future research in mathematical sociology should focus on integrating big data and computational advances into research methodologies, enabling the analysis of large-scale social systems and testing more complex models. Interdisciplinary collaborations between sociologists, mathematicians, computer scientists, and other social scientists will be crucial for addressing these challenges and advancing the field. Additionally, incorporating a nuanced understanding of human agency, addressing ethical considerations, and accounting for long-term dynamics and historical context will further enhance the applicability and relevance of mathematical models in sociology.

In summary, mathematical sociology offers a quantitative foundation for studying and understanding social phenomena. By combining mathematical modeling, statistical analysis, and computational simulations, it provides valuable insights into social networks, collective behavior, social dynamics, and decision-making processes. The field continues to evolve and face new challenges, but its interdisciplinary nature and the potential of integrating emerging technologies and methodologies ensure its continued relevance and impact in the study of complex social systems.

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## Innovative Evaluation of Pencak Silat Program: Terate Bungo Heart Fraternity Study



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**ABSTRACT:** One of the coaching processes that is planned, directed, systematic and continuous is a step to achieve peak athlete performance. The existence of fostering the Faithful Hati Terate Brotherhood, Bungo Nic.067 Branch as a forum for fostering and organizing athlete training to achieve achievements. . This study aims to evaluate which includes Context, Input, Process, Product from the Faithful Hati Terate Brotherhood Pencak Silat Development program, Bungo Nic.067 Branch. This program evaluation research uses the CIIP model (context, input, process, product). The subjects of this study include administrators, coaches, athletes. Data collection techniques through 3 ways, namely by 1) interviews, 2) observation, and 3) documentation. The data source studied was the development of the Setia Hati Terate Brotherhood, Bungo Nic.067 Branch. The analysis technique used is an interactive model. The results of the study concluded that: 1) Context, the context coaching program is very clear, has a good background and vision and mission of coaching as a forum for fostering pencak silat and creating athletes who can excel at the national level. 2) Input coaching program, recruiting coaches and athletes in good category based on criteria. The infrastructure is quite good, funding for development comes from the ratification fund for new PSHT residents, Bungo Nic.067 branch. 3) The coaching process, the training process is still not good, the training is not in accordance with the program that the management wants because there is no written training program. 4) Product, the results of PSHT athletes from the Bungo Nic.067 Branch are in the good category because there is an increase in achievement even though they have not reached the set targets.

**KEYWORDS:** program Evaluation, coaching, CIPP

### I. INTRODUCTION

Pencak silat is a sport native to Indonesian culture, where pencak means fighting while silat is an art (Izzah et al., 2021; Ediyono & Widodo, 2019). The pinnacle of achievement in the sport of pencak silat is achievement. Achievements can be achieved by coaching in a systematic, planned and programmed manner (Chen, 2018). The low achievement of the loyal heart terate brotherhood martial arts (PSHT) branch of Bungo nic.067 is due to the lack of systematic and planned coaching to achieve sports goals (Undang-Undang Keolahragaan No 11, 2022).

Sports coaching is a complex matter that requires handling that is carried out in a programmed and integrated manner based on observations of the development of the achievement of the Faithful Heart Brotherhood Pencak Silat (PSHT) Bungo nic.067 branch, in fact it has not been followed by a directional pattern of coaching. The need for evaluation to encourage improvement and increase accountability for the coaching program. Evaluation should have the aim of improving not proving (L.Stufflebeam & L.S.Coryn, 2017).

Therefore there is a need for evaluation in coaching, and it is necessary to spend a lot of time practicing in order to perfect skills and be accompanied by focus and motivation (Loftesnes et al., 2021). Guidance and development cannot be separated from the guidelines for the pyramid of national sports development, gradual, tiered and sustainable, the biggest coaching period is problem activities, then increasing at the nursery level and achieving achievements.

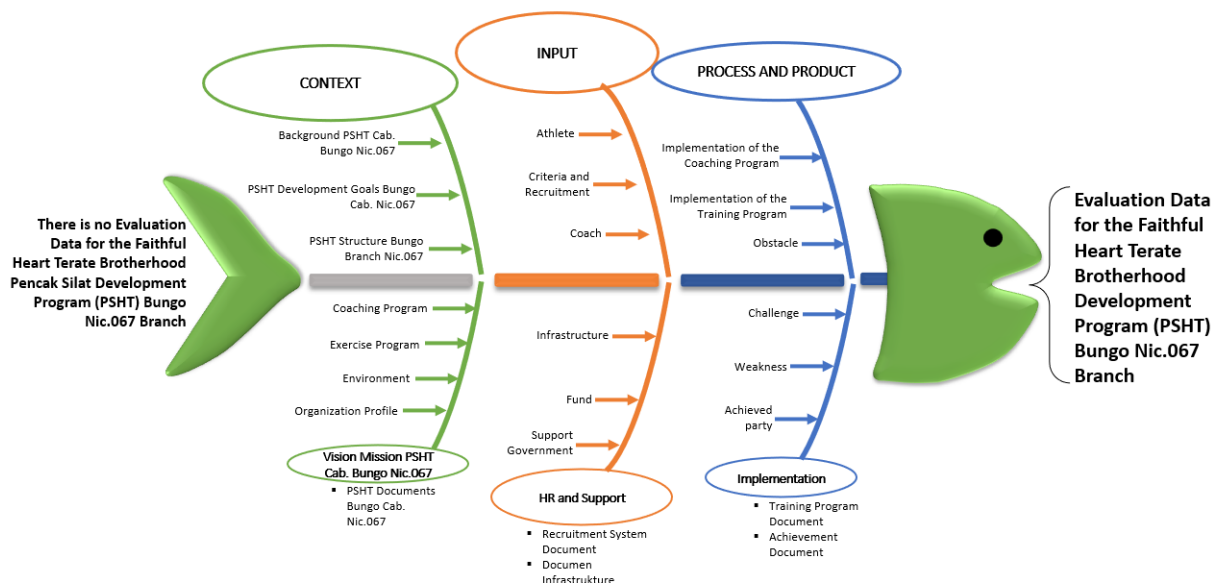
Although the performance of Indonesian pencak silat looks good, many factors influence the achievement of pencak silat. With the evaluation of a program, it is possible to carry out thorough methodical inspections using properly tested processes. If the information used as the basis for these considerations is appropriate in terms of substance, scope, format, and timing, various approaches can be used to collect accurate and reliable data that will allow policy judgments to be appropriate. This

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study aims to obtain valid data to know the results of the implementation process of the Faithful Heart Brotherhood Pencak Silat Development Program (PSHT) Bungo branch NIC.067.

### II. MATERIAL AND METHODS

This study uses qualitative phenomenology, which evaluates the pencak silat coaching program. The steps taken in this study include Context, Input, Process, and Product or evaluation methods using the CIPP Model. Conducted with careful observation and interpretation to draw conclusions, from the results of interviews and analysis of this document using a descriptive approach to convey factual situations in a systematic and accurate manner. For a diagram of the program for fostering the Pencak Silat Brotherhood Faithful Heart Terate, Bungo nic.067 branch, it can be seen in Figure 1 below:



### III. RESULTS AND DISCUSSION

**Table 1. Results of the Context Aspect**

Aspect Context	Research result
Goals and foundation Vision mission Coaching program	Fostering and training PSHT athletes who are talented and can excel regionally and nationally and can improve their abilities to achieve maximum performance.
Coaching program	Direct observation in the field regarding the training program has not run optimally, there is no written training program made by the coach and assistant coach.

**Table 2. Input Aspect Results**

Input Aspect	Research result
Athlete	Recruitment of athletes has gone according to procedures, several things were done in recruiting pencak silat athletes such as the lack of involvement of nutritionists as well as doctors and psychologists.
Coach	Recruitment of trainers is based on the provisions of the branch head, has a license, and has experience as a trainer and has a background in PSHT residents.
Facilities and infrastructure	It's good enough, the situation and conditions have been fulfilled even though it's not optimal.
Funding	The PSHT Development Budget for the Bungo Branch Nic.067 comes from the results of the

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approval of new residents each year and also the contributions of PSHT Bungo Branch residents.

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**Table 3. Process Aspect Results**

<b>Aspect Process</b>	<b>Research result</b>
Management performance	Judging from the results of the interviews and direct field observations, the performance of managers/administrators has not been said to be perfect, there are still many delays in submitting files at the end of the program.
Coach performance	The trainer's performance is good, the trainer has provided the program that the management wants, but it's just that for the written program, no documents have been made.
Implementation of coaching programs	Supervision every month has not been carried out properly monitoring for coaching assignments is fully supervised by managers, trainers and assistant trainers. However, the findings of the researchers during field observations did not find records of monitoring and evaluation results on PSHT athletes in the Bungo nic.067 branch.
Implementation of the Training Program	The implementation of the training program has been going as desired, such as technical, physical and sparring training programs after training, but researchers have not seen any documentation of annual, monthly, weekly and daily training programs as a reference in implementing the training program.

**Table 4. Product Aspect Results**

<b>Product Aspect</b>	<b>Research result</b>
Achievement Boost	The achievements of PSHT athletes in the Bungo nic.067 branch have quite reached the target, although only at the regional level, such as the overall champion in the pre-teen category at the IPSI CUP II Bungo event and won many more gold, silver and bronze medals in the events that followed. Even though the achievements are satisfactory, it is hoped that the programs will continue to be evaluated and supervised.
Improved attitude and insight	Seen during field observations the researchers saw that the athlete's attitude was good where each athlete always greeted the administrators, coaches, parents, friends and when guests visited the training ground.

## DISCUSSION

### Context Evaluation

Programs for developing technical and tactical skills to reach peak athlete performance (Larkin et al., 2022). Sports coaching is now growing rapidly and is becoming professional, such as knowledge and accountability (Kjær, 2019). The development of early-aged athletes in long-term training programs is to create athletes in peak condition, with such conditions athletes are

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expected to be able to achieve maximum performance. It is necessary to increase the optimization of the coaching role by administrators in the management to improve athlete performance.

The existence of a training program is expected to be able to improve the performance or appearance of an athlete by maximizing physiological, technical and strategic adaptations as well as psychological factors. Training is a practice process that is carried out systematically and repeatedly with progressive loading. In addition, training is an effort made by someone to prepare themselves in an effort to achieve certain goals.

### **Input Evaluation**

Recruitment of pencak silat athletes has been going as expected, the obstacle in recruitment is the lack of involvement of psychologists, doctors, nutritionists, these three have not been implemented, sports psychologists are increasing every year in the world (Zhou, 2022a), coaches find it difficult to apply an approach that includes creative, tactical, and mental skills (Zhou, 2022b) and coaches must understand sports psychology for better performance in sports, (Zhou, 2022c). Errors in food selection can cause a player's performance to decrease, unhealthy eating patterns and malnutrition threaten (Torres-McGehee et al., 2012).

The role of the coach in improving athlete performance is very important and a coach must have professional skills who have the skills and knowledge to identify the development of abilities and skills of athletes (Cushion et al., 2012)(Pulling et al., 2018). Coach is a profession that is expected to provide services and improve athlete performance (Williams & Kendall, 2007). Recruitment of trainers and assistant trainers has been going well with attention to work professionals, abilities, skills. Recruitment of trainers has been going well with attention to work professionals, abilities, skills. material and non-material and in order to spur sports achievements through the provision of quality athletes (Deri & Purwanto, 2019; Faisyal et al., 2023).

Infrastructure facilities are an important part in the context of sports achievement and ability in increasing the motivation and achievement of athletes (Assalam Didik, Sulaiman, 2015)(Rodríguez Macías et al., 2022) for the availability of adequate funds. Funding has a very important role for the coaching and development of sports and towards achieving a glorious achievement. A written plan refers to the process of building an organizational plan that is expressed in quantitative terms for long-term goals (Fahrian & Simatupang, 2019; Saputro & Siswantoyo, 2018; Sinulingga et al., 2022).

### **Process Evaluation**

The training carried out requires mentoring and evaluation (Wahyudin, 2017) the implementation of mentoring has gone well but no documentation of specific notes from the results of the mentoring and evaluation especially of athletes has been found. the program is made directly by the coach and assistant coach and is notified to athletes and administrators and reports directly to the coach that the program is running well. However, the annual, monthly, weekly and daily training program has not been seen as a reference in carrying out the training process, and its implementation is not guided by the training program that has been made, so that the objectives of this exercise are not achieved (Lestari & Sutapa, 2020; Saleh & Widiyanto, 2019; Vai et al., 2019).

### **Product Evaluation**

Achievement is a task-oriented attitude that allows people's achievements to be evaluated for internal or external criteria. PSHT pencak silat achievements, based on the results of observations of researchers and also interviews, it can be said that the achievements achieved are quite optimal and maximal in accordance with the targets that have been set even though there are some things that are not optimal. The best achievement was to become the overall champion in the Pre-adolescent category in the IPSI CUP II Bungo event and athletes also won gold, silver and bronze medals in events they have participated in, meaning that the coaching of PSHT Bungo Branch nic.067 has been completed respected in the Muara Bungo area where even in the Porprov event some of our athletes were in one of them (Trizkyana & Siswantoyo, 2022; Vai et al., 2021).

In another study, what is called coaching is good, but there are still things that are lacking, namely fitness equipment, several aspects of promotion and degradation, consumption, welfare and transportation that are going well and producing good performance too (Haris Satria M et al., 2012; Haris Satria M et al., 2012), even though the trainer makes the program training, but there are still many inhibiting factors, facilities and additional fee funding (Hidayat & Rahayu, 2015).

## **IV. CONCLUSION**

The results of the discussion regarding the Context evaluation of fostering pencak silat athletes in the loyal heart brotherhood terate branch of Bungo nic.067 can be concluded that it has been running with the vision and mission proven by tests and parameters that are in accordance with what the management wants. In the input evaluation the Athlete recruitment has been running optimally even though it has not involved a team of doctor psychologists, and the trainers already have a regional



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license, the infrastructure is quite good and the budget has been running and implemented according to the allocation but not optimal. In the process evaluation, coaching activities have been going well and implemented, but special written notes have not been found as a result of monitoring from the management and trainers, for the training program has been running as expected. The Product Evaluation shows that the PSHT athlete's achievements in the Bungo nic.067 branch have reached the target, similar to the achievement recently achieved by becoming the overall champion in the pre-adolescent category in the IPSI CUP II Bungo event. Thus, it can be conveyed from the results of the CIPP research that the evaluation of pencak silat is as expected but needs to be evaluated with further improvements.

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## Student Attitudes and Satisfaction with Online Learning During the COVID-19 Pandemic: A Perspective from Indonesia



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**ABSTRACT:** The purpose of this study was to describe student attitudes and satisfaction with online learning during the COVID-19 pandemic in Indonesia. A total of 380 students were involved in this study with details of 223 male students (58.68%), and 157 female students (41.32%). The average age of the respondents was 19.99 years with a Standard Deviation (SD) = 3.02. There were two instruments used in this study, namely Students' attitudes toward schooling during the COVID-19 pandemic, which totalled four statement items, and the General Satisfaction Scale (GSS), which totalled 6 statement items using a Likert scale ranging from strongly disagree to strongly agree. The results of the study show that (1) students have a relatively positive attitude towards online lectures during the COVID-19 pandemic. There was 57.37% of students agreed with online lectures with the highest reason being that it was time to use online lectures, especially during a crisis like this, (2) the level of student satisfaction was relatively high in online lectures, namely with an average score of 14,69 with a standard deviation of 4.02.

**KEYWORDS:** student attitude; student satisfaction; online learning; the COVID-19 pandemic

### I. INTRODUCTION

The COVID-19 pandemic has changed all aspects of life (Wandik et al., 2021), from economic aspects (Nicola et al., 2020), environment (Chakraborty & Maity, 2020), mental health (Torales et al., 2020), including education aspects (Hoofman & Secord, 2020). In education, COVID-19 has drastically changed the learning method which initially tended to be carried out offline to change to online learning (online learning). In that context, according to Hoofman & Secord (2020), changes in the world of education due to the COVID-19 pandemic are considered detrimental to students. In Indonesia, research related to online learning raises numerous problems. Studies conducted by Prawanti & Sumarni (2020) and Utami (2020) related to online learning at the elementary school level showed that there were numerous problems and obstacles in practice, namely those originating from students, parents, to teachers. Similarly, results were found at the junior high school level, namely that there were many obstacles in online learning practices so they were seen as less effective if they were permanent (Asrul & Hardianto, 2020; Rahayu & Wirza, 2020). Studies in senior high schools also show the same result, teachers and students encounter many obstacles during the online learning process (Wahyuningsih, 2021; Fadilah & Mahyuny, 2018). Then what about online learning at the college level?

The results of research related to online learning in Indonesia at the tertiary level show that online learning has a positive impact and about 86.3% support the implementation of online learning and 77% of students express satisfaction in carrying out online learning. (Saifuddin, 2018). Similarly, Ulinuha & Novitaningtyas (2021) reported that students feel quite satisfied with online learning. On contrary, Cahyawati & Gunarto (2020) found that only 15% of students agree with online learning. The same result was also reported by Napitupulu (2020) that students are dissatisfied with online learning. The existence of contradictory research results above is a problem.

The next problem related to the implementation of online learning is related to conceptual and theoretical foundations. Concepts such as blended learning (Garrison & Vaughan, 2008), hybrid learning (Ranganathan et al., 2007), e-learning (Clark & Mayer, 2008), digital learning, technology-based learning, distance learning (Langford & Damsa, 2020), in the perspective of learning technology, does not suggest 100% online learning. However, there is a weighting between offline learning or face-to-face learning and online learning. However, considering health and safety factors, the policy of implementing 100% online learning has to be carried out as long as the learning process can be carried out (see the 2020 Minister of Education and Culture circular on preventing the spread of COVID-19 at the Ministry of Education and Culture of the Republic of Indonesia).

With this policy, online learning has become massively implemented at all levels of educational units. Therefore, this

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raises questions related to online learning practices. One of the basic questions is "what is the attitude of students in online learning?" and "Are students satisfied with the online learning method?" This question is important to ask because there is empirical evidence that student attitudes and satisfaction with learning influence learning outcomes (Aswar, 2017; Septyarini & Cahya, 2021; Prasetya & Harjanto, 2020).

In simple terms, attitude can be understood as a tendency to act, perceive, think, and feel in the face of objects, ideas, situations, or values (Sari et al., 2021). A person's attitude towards an object always acts as an intermediary between his response and the object in question (Azwar, 2012). Azwar explained further that a person's response is divided into three, namely cognitive, affective, and conative responses. Concerning attitudes in learning, a positive attitude needs to be raised because several studies state that attitudes are closely related to learning outcomes (Aswar, 2017). A positive learning attitude can be developed by students and lecturers as educators must find ways for students' positive attitudes to appear in online lectures. One alternative for increasing positive attitudes in online learning is, (1) growing the need to get appreciation, appreciate the beauty, and so on; (2) connecting with experience; (3) providing the opportunity to obtain the best results; (4) using various teaching methods such as discussions, demonstrations, reading, group work and so on (Arif et al., 2022).

Several researchers have measured the level of student satisfaction with online learning so that students' responses to online learning have been known. According to Prasetya & Harjanto (2020), one of the benchmarks for the quality of online learning is student satisfaction. Student satisfaction can be used as evaluation material to improve the quality in online learning (Ulinuha & Novitaningtyas, 2021). Therefore, student satisfaction is seen as an important factor in online learning (Andilala & Marhalim, 2019).

According to a well-known figure in world marketing, Kotler & Amstrong (2012), Satisfaction is a person's perception based on the results between expectations and what is obtained. In the context of satisfaction in higher education, student satisfaction is a comparison between the level of expectation and what is obtained in educational services (Darmawan, 2015). Similarly, Wibisono (2012) states that satisfaction is the gap between expectations and the results obtained (performance). When expectations are following what is obtained, there will be a perception of satisfaction or pleasure in that person. There are three dimensions in the aspect of satisfaction, namely as expected, getting what is wanted, and overall satisfaction (Darmadi, 2000).

Even though attitude and satisfaction factors are seen as important dimensions, limited studies have been carried out comprehensively in this area. For this reason, this study aims to describe the attitudes and satisfaction of students in online learning during the COVID-19 pandemic in Indonesia.

## **II. METHOD**

A total of 380 students were involved in this study with details of 223 male students (58.68%), and 157 female students (41.32%). The average age of the respondents was 19.99 years with SD = 3.02. There are two instruments used in this study, namely, students' attitudes toward schooling during the COVID-19 pandemic (Baloran, 2020) which totaled four statement items. Second, the General Satisfaction Scale (GSS; Strachota, 2003; 2006) which amounted to 6 item statements using a Likert scale ranging from strongly disagree, disagree, agree, and strongly agree. The instrument has been adapted to the language and tested in the Indonesian context by Putra (2022). The Indonesian version of the GSS correlation coefficient is 0.582-0.625, while the factor loading value is 0.55-0.88. For the Indonesian version of GSS reliability per item has a range of 0.603-0.844 while the overall reliability value is 0.706. This research was conducted online, namely the research instrument was entered in the Google form, and on the first-page information was given regarding the research objectives and the existence of informed consent. If the research respondents agree to take part in this research, the respondents can click "Yes" which means they are willing to participate in this study. Research links are distributed on social media such as Facebook and to the WhatsApp group of lecturers to be forwarded and filled in by students. Data analysis was carried out descriptively, such as the average value, standard deviation, and percentage.

## **III. RESEARCH RESULTS AND DISCUSSION**

The purpose of this study was to describe student attitudes and satisfaction with online lectures during the COVID-19 pandemic. Therefore, the results and discussion of the research will be divided into two parts, namely results related to student attitudes towards online learning and then followed by student satisfaction with online lectures

### **Attitudes of Students toward Online Learning**

There are four questions asked related to student attitudes toward online learning. Here are the questions and the results.

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### Do you agree with the suspension of lecture activities during the COVID-19 pandemic?

As many as 206 (54.21%) students answered they did not agree, while 107 (28.16%) students agreed, and 67 (17.63%) answered they did not know. If analysed based on the origin of the department, 136 (53.54%) students from the sports department answered that they did not agree with the termination of lecture activities, while 78 (30.71%) students agreed, and 40 (15.75%) answered they did not know. For students from non-sports departments, 70 (56.91%) answered they did not agree, while 29 (23.02%) agreed, and 27 (21.43%) did not know. Student attitudes toward these questions are summarized in Table 1 below.

**Table 1. Comparison of lecture termination agreements based on the origin of the study program**

Alternative answers	Sports department	Percentage (%)	Non-sports department	Percentage (%)	Total	Percentage (%)
Agree	78	30.71	29	23.02	107	28.16
Do not know	40	15.75	27	21.43	67	17.63
Disagree	136	53.54	70	55.56	206	54.21
Total	254	100	126	100	380	100

### Do you agree with the implementation of online lectures during social quarantine?

The attitude of students towards these questions is presented in Table 2. A total of 218 (57.37%) students answered that they agreed, while 90 (23.68%) students said they did not agree, and 72 (18.95%) answered that they did not know. If analyzed based on the origin of the study program, 142 (55.91%) students from the sports department answered that they agreed with online lectures, while 63 (24.80%) students said they did not agree, and 49 (19.29) answered that they did not know. For students from non-sports departments, 76 (60.23%) answered that they agreed, while 27 (21.43%) said they did not agree, and 23 (18.25%) did not know. The results of this study are in line with studies conducted by Saifuddin (2018) which show as much as 86.3% support the implementation of online learning.

**Table 2. Comparison of approvals for implementing online lectures based on the origin of the department**

Alternative answers	Sports department	Percentage (%)	Non-sports department	Percentage (%)	Total	Percentage (%)
Agree	142	55.91	76	60.32	218	57.37
Do not know	49	19.29	23	18.25	72	18.95
Disagree	63	24.80	27	21.43	90	23.68
Total	254	100	126	100	380	100

Regarding the reasons for agreeing to online lectures, there are six alternative answers given: (a) I want to finish my studies, (b) I don't want to drop out of college, (c) I am bored at home and miss academic assignments, (d) Studying online (including through online modules) is more comfortable and practical than studying offline, (e) It is time to use online lectures, especially during a crisis like this, (f) Studying at home will be safer than studying on campus. Table 3 is the results related to the reasons for agreeing to online lectures:

**Table 3. Reasons for agreeing to online lectures:**

Letter	Total	Percentage
A	103	27.69
B	34	9.14
C	13	3.49
D	47	12.63
E	112	30.11
F	63	16.94
Total	372	100

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Table 3 shows that 30.11% stated: "It is time to use online lectures, especially during a crisis like this." 27.69% stated: "I want to finish my college." 16.94% stated: "Studying at home will be safer than studying on campus." 12.63% stated: "Studying online (including through online modules) is more convenient and practical than studying offline." 9.14% stated: "I don't want to drop out of college." And 3.49% stated: "I'm bored at home and miss academic work."

In addition, this study also reveals students who disagree with online lectures (table 4). There are eight alternative answers available, namely (a) I don't have an internet data plan, (b) I don't have a computer/laptop/smartphone, (c) I'm worried about online lecture assignments, (d) I still prefer studying on campus, (e) In my opinion, online lectures are boring, (f) I can't study well in online lectures, (g) I can't communicate directly with my lecturers and classmates, (h) I don't have money for lectures online, let alone collect their assignments. The following are the results of reasons for disagreement in online lectures:

**Table 4. Reasons for disagreeing with online lectures:**

Letter	Total	Percentage
A	28	12.28
B	8	3.51
C	23	10.09
D	49	21.49
E	35	15.35
F	46	20.18
G	36	15.79
H	3	1.32
Total	228	100

As many as 21.49% stated: "I still prefer to study on campus." 20.18% stated: "I can't study well in online lectures." 15.79% stated: "I cannot communicate directly with my lecturers and classmates." 15.35% stated: "In my opinion, online lectures are boring." 12.28% stated: "I don't have an internet data plan." 10.09% stated: "I am worried about online lecture assignments." 3.51% stated: "I don't have a computer/laptop/smartphone." and only 1.32% stated: "I don't have money for online lectures, let alone submitting assignments."

### Student Happiness in Online Lectures

The research results related to the level of student happiness in online lectures during the COVID-19 pandemic are presented in table 5.

**Table 5. Results of student happiness levels in online lectures**

Mean	Standard Deviation	Minimum	Maximum	N
14.69	4.024	6	24	383

Based on Table 5 above it appears that student happiness in taking online lectures is relatively at a moderate level. This is following previous findings which show that students feel quite satisfied with online learning (Ulinuha & Novitaningtyas, 2021). In line with that, other researchers found that as many as 77% of students expressed satisfaction with online learning (Saifuddin, 2018). Based on these results, it appears that the findings of this study conflict with studies conducted by Cahyawati & Gunarto (2020) and Napitupulu (2020) which shows that students are dissatisfied with online lectures.

These results reinforce previous results which show that students in Indonesia have a relatively positive attitude towards online lectures. The positive attitude of students towards online lectures during the COVID-19 pandemic, which we value, contributes to the level of student satisfaction with lectures. In addition, mastery of technology is also believed to affect the level of student satisfaction with online learning (Septyarini & Cahya, 2021). A study conducted by Prasetya & Harjanto (2020) found that the quality of online learning influences student satisfaction and learning outcomes. That means, the factors that influence student satisfaction with online lectures are not single-track but multi-factor.

Even though this study found that students were relatively positive and satisfied with online lectures, we also found empirical evidence to contradict the results of this study. Utami (2021) found that in online lectures students tend to be

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dissatisfied and students are more enthusiastic about face-to-face lectures (offline) because online lectures are relatively wasteful of packet data (pulse). In line with that, Cahyawati & Gunarto (2020) revealed that only 15% of students agreed with online learning. Similarly, Napitupulu (2020) found that students were dissatisfied with online learning.

### Limitations and directions for future research

We have tried to reveal the attitudes and satisfaction of students in online courses in-depth, but we realize that this study has limitations. First, the satisfaction variable revealed in this study is limited to online lectures, while the life satisfaction variable in general is not investigated. We see that the life satisfaction variable will be a variable that helps explain the results of this study regarding satisfaction with online learning. As is known, the existence of COVID-19 has made people feel depressed or stressed because life has changed drastically (Mukhtar, 2020). Therefore, we consider it important to reveal aspects of general life satisfaction among respondents during the COVID-19 pandemic issue. Second, the analysis in this study is limited to descriptive analysis and is not followed by correlational or comparative analysis. Thus, information from the data obtained is limited to descriptive aspects. For these two limitations, we provide guidelines for future research to (1) use or add other relevant variables, for example, life satisfaction, involvement in lectures, and student learning outcomes so that research results become more comprehensive, and (2) the analysis should use various analysis techniques such as correlation, t-test, analysis of variance, and regression so that the data obtained is analysed more deeply.

## IV. CONCLUSIONS

The conclusions resulting from this research are (1) students have a relatively positive attitude toward online lectures during the COVID-19 pandemic. As many as 57.37% of students agreed with online lectures with the highest reason being that it was time to use online lectures, especially during a crisis like this, (2) the level of student satisfaction was relatively high in online lectures, namely with an average score of 14,69 with a standard deviation of 4.02. In a crisis condition caused by the spread of the virus and to maintain the health and safety of students, we consider online lectures to be a solution, even though we see problems in implementing them in practice, namely students often complain about wasting internet packages.

## ACKNOWLEDGMENT

The authors would like to thank the students who have participated in this study.

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## Object Control Abilities of Kindergarten Students: Impact of Eye-Hand Coordination, Nutritional Status, Gender



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**ABSTRACT:** This study aims to reveal the effect of exogenous variables directly, causally and simultaneously on endogenous variables. This research method is a quantitative method using an ex-post facto research design. The population in this study were 30 students at Padang Utara Kindergarten aged 5-6 years. Consists of 15 male students and 15 female students. Sampling was done by purposive sampling technique. The data analysis technique used was path analysis. Research results The results showed that 1) There was a direct effect of eye-hand coordination on the object control abilities of North Padang Kindergarten students. 2) There is a direct effect of nutritional status on the ability of object control students at North Padang Kindergarten. 3) There is no direct effect of gender on the ability of the control object of North Padang Kindergarten. 4) There is no indirect effect of eye-hand coordination on the ability of control objects through gender at North Padang Kindergarten. 5) There is no indirect effect of nutritional status on the ability of control objects through gender at North Padang Kindergarten. 6) There is a simultaneous effect of eye-hand coordination, nutritional status and gender on the object control ability of students at North Padang Kindergarten.

**KEYWORDS:** hand eye coordination, nutritional status, gender and control object ability

### I. INTRODUCTION

Previous research has revealed that object control abilities in kindergarten-aged children have an important role in cognitive and motor development. (Bardid et al., 2015; De Meester et al., 2020; Laukkanen et al., 2020). However, there are still aspects that are not fully understood, especially in terms of the relationship between eye-hand coordination, nutritional status, and gender to these abilities (Luz et al., 2017; Venetsanou & Kambas, 2016). Through an innovative approach, this research aims to broaden our understanding of the impact these factors have. By analyzing data from kindergarten students in specific areas, this study aims to provide new insights that can support the development of educational strategies that are more effective in improving object control skills in early childhood. (Gusril, 2008) Motor ability is the quality of a person's ability that can make it easier to perform movement skills. According to (Kiram, 2000).

Motion can be interpreted as a change in the place, position, and speed of the human body and body parts that occurs in a dimension of space, time, and can be observed objectively (Barnett et al., 2017; Blomqvist et al., 2019; Roth et al., 2010). Motor ability is the ability to look / perform a person which is influenced by factors of speed, strength, coordination and endurance thus will make it easier for someone to perform movement skills (Komaini, 2018; Aiman et al., 2016; Chung, 2018; Li et al., 2011).

Motor Development is the process of a child learning to skillfully move limbs. This motor development can provide stimulation / stimulus such as training dexterity, speed, strength, flexibility and accuracy of hand eye coordination. Developing children's motor skills is very necessary so that they can grow and develop optimally (Sit et al., 2019; J. J. Yu et al., 2021). There are three motor skills of children namely: Locomotor Skills such as running, gallop, walking, hops, leap, Non Locomotor Skills such as jumping, balance, coordination of movements, Manipulative Skills such as hand and foot movements (Noordstar et al., 2017; J. Yu et al., 2016).

Eye-hand coordination is the ability of the eyes and hands possessed by a person in performing a physical task at the same time (Wicks et al., 2015). These activities can be in the form of catching and throwing, if a child can do these activities flexibly without significant obstacles, then in general the child is considered to have good eye-hand coordination. This element of eye-

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hand coordination develops rapidly at the age of 4 to 6 years. The need for nutritional status is also very influential because rapid growth and development occur in this age group. Provision of balanced nutrition in this period is carried out to support its development optimally.

This period is irreversible, which means it cannot be corrected in the next phase of life and will affect outcomes in childhood and adulthood. Ideally, the development of the child is in line with growth. The complexity of the muscular tissue system, nervous system as well as the functioning system of body organs is in line with the process of physical maturation or growth. Malnutrition in early childhood has an impact on growth disorders that result in disruption of child development. (Sarah, 2020). Nutritional status factors, if the nutritional status of children is low, of course, they cannot move properly, the consequences are of course low motor skills of the child. Poor or poor nutrition in children can result in impaired physical growth and intelligence. If physical growth is stunted, then his physical and motor abilities will be difficult to develop.

Globally, the problem of early childhood nutrition based on height data on age is 95% said to be normal, 95-90% said mild malnutrition, 90-85% in katakana moderate malnutrition, and 85% in katakana severe malnutrition. Data based on weight to height are clarified 110-90% in normal katakana, 90-85 in mild malnourished katakana, 85-75% in moderate malnourished katakana and 75% in severe malnourished katakana. (Soetjningsih, 2015: 143-144). In addition to nutritional status, sex differences are also one of the factors that affect children's movement ability. Because there are differences in ability between men and women (Kim et al., 2022).

Boys have better motor skills than girls, both in terms of strength and accuracy of movement. Suppose in to accuracy and throwing speed is often used to investigate differences in quantitative characteristics of throwing movements. Gender differences in speed throwing have been identified from ages 6 to 13, boys performing better compared to girls of the same age. At a certain level of development, boys only improve their skills, while girls stagnate at their rate, or become worse.

Based on the researchers, see from North Padang Kindergarten the low development of basic movements in early childhood such as running, jumping, catching and going up and down stairs, the researcher wants to see if there is an effect on hand eye coordination affects the ability of North Padang kindergarten control objects, Nutritional Status affects the ability of North Padang kindergarten control objects, Gender affects the ability of kindergarten control objects North Padang. So the researcher is interested in reviewing this study with the title " Object Control Abilities of Kindergarten Students: Impact of Eye-Hand Coordination, Nutritional Status, Gender".

## II. MATERIAL AND METHODS

Research Research design is a plan and structure of investigation that is arranged in such a way that researchers will be able to get answers to their research questions. This type of research design is included in the ex-post facto. In the ex-post facto study there was no control group or pre-test activity. The cause and effect relationship between one subject and another subject is not manipulated, because ex-post facto research only reveals symptoms that exist or have occurred. The facts in this study are revealed as they are from the collected data. The population in this study was 30 North Padang kindergarten students aged 5-6 years. It consists of 15 male students and 15 female students. Sampling is carried out by purposive sampling technique. The data analysis technique used is path analysis.

## III. RESULTS AND DISCUSSION

### 1) Control Object Capabilities

Based on the frequency distribution table of control object capability data above, it can be seen that out of 30 students in North Padang Kindergarten, there is 1 student who is in the 5-6 interval class with the category "Very Less". In classifications 6-7, there are 8 students or 27% of North Padang Kindergarten with the category "Less". In interval classes 7-8 there are as many as 6 students or 20% of North Padang Kindergarten with the category "Enough". In interval classes 8-9 there were 2 students of North Padang Kindergarten with the category "Good". Furthermore, in the interval class 9-10 there were 13 students of North Padang Kindergarten with the category "Very Good". The frequency distribution of the results of the data on the ability of the North Padang TK control object can be seen in the table below.

**Table 1. Data Frequency Distribution of North Padang Kindergarten Control Objects.**

No	Interval Class	Frequency		Categories
		Absolut	Percent	
1	9,1-10	13	43%	Very Good

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2	8,1-9	2	7%	Good
3	7,1-8	6	20%	Enough
4	6,1-7	8	27%	Less
5	5,1-6	1	3%	Less Than Once

### 2) Hand Eye Coordination

Based on the frequency distribution table of eye-hand coordination data above, it can be seen that of the 30 students in North Padang Kindergarten, there are as many as 2 people or 7% of students who are in the 0-0.8 classification with the category "Less Once". In the classification of 0.9 – 1.6, there is not a single student in North Padang Kindergarten with the category "Less". In the interval class 1.7 – 2.4 there were 5 students or 17% of North Padaang Kindergarten with the category "Enough". In the interval class 2.5 – 3.2 there are as many as 6 students or 20% of North Padang Kindergarten with the category "Good". Furthermore, in interval classes 3.3 - 4 there were 17 students or 57% of North Padang Kindergarten with the category "Very Good". The frequency distribution of the results of the hand coordination data of the North Padang Kindergarten can be seen in the table below.

**Table 2. Frequency Distribution of Eye-Hand Coordination Data for North Padang Kindergarten Students**

No	Interval Class	Frequency		Categories
		Percent Absolut	Percent	
1	3,3-4	17	57%	Very Good
2	2,5-3,2	6	20%	Good
3	1,7-2,4	5	17%	Enough
4	0,9-1,6	0	0%	Less
5	0-0,8	2	7%	Less Than Once

### 3) Nutritional Status

Based on the frequency distribution table of BMI data above, it can be seen that out of 30 students in North Padang Kindergarten, there is not a single student who is in the classification of >2 elementary school with the category "Very Fat", >1 SD – 2 SD with the category "Fat" and -2 SD – 1 SD with the category "Normal". In the classification -3 elementary school - -2 elementary school there are 2 students or 6.7% in North Padang Kindergarten with the category "Kurus". In the <-3 interval class of elementary school, there were 28 students or 93.3% in North Padaang Kindergarten with the category "Very Thin". The frequency distribution of the results of the nutritional status data of North Padang Kindergarten can be seen in the table below

**Table 3. Frequency Distribution of Nutritional Status Data of North Padang Kindergarten Students**

No	Interval Class	Frequency		categories
		Percent Absolut	Percent	
1	<-3 SD	28	93,3%	Very Skinny
2	-3 SD - 2 SD	2	6,7%	Thin
3	-2 SD - 1 SD	0	0%	Usual
4	>1 SD - 2 SD	0	0%	Fat
5	>2 SD	0	0%	Very Fat

### 4). Gender

Based on the table above, it can be seen that the number of male students is the same as the number of female students in North Padang Kindergarten. The number of male and female students in North Padang Kindergarten is 15 students or 50% each. The frequency distribution of the results of the North Padang Kindergarten sex data can be seen in the table below.

**Table 4. Frequency Distribution of Gender Data of North Padang Kindergarten Students**

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No	Gender	Frequency Absolut	Frequency Relative
1	Man	15	50%
2	Women	15	50%
<b>Sum</b>		30	100%

### IV. DISCUSSION

#### 1. There is a direct influence of eye-hand coordination on the ability of the control object of North Padang Kindergarten

Coordination is the ability possessed by a person to perform movements or physical activities effectively and efficiently, showing how a movement can occur. Hand-eye coordination, also known as (hand-eye coordination), is the coordinated control of eye movements with hand movements, and the processing of visual information to achieve a person's ability to coordinate the eyes and hands into a complete, thorough and continuous series of movements precisely in a controlled rhythm of motion that elicits a feedback reaction. In simple terms, coordination between eyes and hands involves coordinated vision and hand gestures to carry out tasks (Anang, 2020).

Research that has been conducted found that there is a direct influence of eye-hand coordination on the ability of control objects of North Padang Kindergarten students is 19.5%. While the rest is influenced by other factors. The meaning of the direct influence of hand eye coordination on control objects is the coordination possessed by the sense of sight with the limbs, namely the hands work together to carry out an activity such as catching, throwing, kicking, bouncing the ball, and rolling the ball. Without coordination between the eyes and hands, it will be difficult to feel the ability of the control object to be carried out perfectly.

#### 2. There is a direct influence of nutritional status on the ability of the control object of North Padang Kindergarten

Nutritional Status is an expression of one or more aspects of an individual's nutrition in a variable (Hadi, 2019). Nutritional status is the state of the body which is the end result of the balance between nutrients that enter the body and their utilization (Waura, 2016). Nutritional status is the expression of a state of equilibrium in the form of a certain variable or the embodiment of nutrition in the form of a certain variable (Supariasa, 2016). The quality of life of an individual can be seen from his health. Health problems can occur at all ages, especially more susceptible in toddlers because the toddler's immune system is still in the process of development. Health problems that often occur in the world are the occurrence of nutritional problems both thin and fat nutrition (Yohana, 2021). Nutritional status is the state of the body as a result of food consumption and use of nutrients (Soetjningsih, 2015). Alnedral, (2019), Nutritional status is the state of the body which is the end result of the balance between nutrients that enter the body. The data collection method is carried out by means of students first measured TB and BB. To find the Body Mass Index by BB in kilograms divided by TB in meters squared. Then the results are matched with the reference Body Mass Index According to Age (BMI / U).

The results of research that researchers have conducted show that there is a direct influence of nutritional status on the ability of control objects of North Padang Kindergarten students. Nutritional status affects the ability of control objects of North Padang Kindergarten students is 21.9%. While the rest is influenced by other factors. The meaning of the direct influence of nutritional status on the ability of the control object, with good nutritional status, the ability of the control object of kindergarten students will also be good, so that kindergarten students can carry out activities without excessive fatigue to get various movement experiences.

#### 3. There is no direct influence of gender on the ability of the control objects of North Padang Kindergarten

In the calculation results of the path analysis, the direct influence of Gender (X3) on the Ability of the Control Object (Y) was found that  $H_0$  was rejected. This means that there is no direct influence of Gender on the Ability of Control Objects. In children who were not given movement training, between men and women had differences in basic movement skills. Boys have better basic movement skills when compared to girls. This situation is closely related to the selection of toys and play activities they do, such as running, jumping, throwing, hitting, catching and kicking. Without them realizing it, it turns out that this activity has trained their bodies in basic movement skills at an early level. Girls tend to do play activities that stay in one position only. While boys have a tendency to do physical activity with more movement intensity.

This has also been explained in several research results, previous research revealed that sex differences in children affect basic movement abilities (Judith & Walter, 2015). Boys do have better basic motion skills than girls, especially in object control skills

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(Barnett et al., 2017; Judith & Walter, 2015). That the relationship between age and gender can be interpreted as high age, the basic movement skills (object control) of children will be better. With this opinion explained that the sex of children aged 5-6 years has not determined whether or not the ability of object control, but to get a good object control determined age and experience of motion.

### **4. There was no indirect effect of eye-hand coordination on the ability of objects of control through sex in North Padang kindergarten**

Based on research conducted regarding the indirect influence of Hand Eye Coordination on the Ability of Control Objects Through Gender, it was found that  $H_0$  was rejected. That is, there is no direct influence between the Hand Eye Coordination and the Ability of Control Objects Through Gender. Delays are more often caused by a lack of opportunities to learn motor skills, excessive parental protection, or lack of motivation to learn them. Another factor is the lack of knowledge, experience and insight of ECCE teachers in teaching basic movement skills to children (Famelia, 2018). So far, ECCE teachers have only focused on teaching reading, writing, and ignoring motion-related learning. In fact, by teaching movement skills to children can stimulate their cognitive abilities (Johor, et al., 2020).

### **5. There was no indirect effect of nutritional status on the ability of control objects through sex in North Padang kindergarten**

Based on research conducted regarding the indirect influence of Nutritional Status on the Ability of Control Objects Through Gender, it was found that  $H_0$  was rejected. That is, there is no direct influence between Nutritional Status and the Ability of Control Objects Through Sex. Nutritional Status Ability is the expression of one or more aspects of an individual's nutrition in a variable (Hadi, 2019). Nutritional status is the state of the body which is the end result of the balance between nutrients that enter the body and their utilization (Waura, 2016). Nutritional status is the state of the body which is the end result of the balance between nutrients that enter the body and utilis Nutritional status is an expression of the state of balance in the form of certain variables or the embodiment of nutrients in the form of certain variables (Supariasa, 2016). The quality of life of an individual can be seen from his health. Health problems can occur at all ages, especially more susceptible in toddlers because the toddler's immune system is still in the process of development. Health problems that often occur in the world are the occurrence of nutritional problems both thin and fat nutrition (Yohana, 2021). Nutritional status is the state of the body as a result of food consumption and use of nutrients (Soetjningsih, 2015).

### **6. There is a simultaneous influence of eye-hand coordination, nutritional status and gender on the ability of the control objects of North Padang Kindergarten**

Object Control involves more hands and feet, but other parts of our body can also be used in these basic locomotion skills. Object manipulation is far superior to eye-foot and hand-eye coordination The forms of manipulative ability consist of: 1) Pushing motion (throwing, hitting, kicking). 2) The movement of receiving (grasping) objects is an important ability that can be taught using a ball made of rubber pads. 3) The movement of bouncing the ball or dribbling. According to (Setyo, 2019) Basic manipulative movements are motion manipulation movements using tools, which involve eye coordination, foot coordination, and hand coordination, or other body parts such as throwing, catching, kicking and so on.

The results showed that there was a direct influence of eye-hand coordination, nutritional status and sex together on the ability of control objects. This can be seen from the calculated value obtained that eye-hand coordination, nutritional status and gender to the ability of the control object amounted to 24.01% while the rest of the ability of the control object was influenced by other factors. The meaning of the influence of hand eye coordination, nutritional status and gender affects the ability of object control of kindergarten students.

## **V. CONCLUSION**

Based on data analysis and discussion in the previous chapter, the conclusions in this study are as follows: 1) There is no significant influence by learning motivation on students' physical fitness. 2) There is no significant effect by nutritional status on students' physical fitness. 3) There is no significant influence by learning motivation on student learning outcomes. 4) There is no significant effect by nutritional status on student learning outcomes. 5) There is no significant effect by physical fitness on student learning outcomes. 6) There is no indirect influence of learning motivation on learning outcomes through students' physical fitness. 7) There is no indirect influence of nutritional status on learning outcomes through students' physical fitness.

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## Translating Violence from Texts onto Screen: Violation of Human Rights



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**ABSTRACT:** The paper aims to explore the translation of violence from textual sources to the screen and its implications for human rights violations. The art forms we create are a product of our collective memories of experiences. Whereas many other forms of expression produce still images that need to be viewed, read or heard to get an impact and reaction. Cinema as a moving visual art brings together likeminded people to create visuals that immediately attract all segments of our society. The reactions are often generated instantly and spreads through various social media platforms, generating much debate and heat. The social imbalances between man and woman have been subjects of many novels and stories. The different power equations between different castes have also been focused at times. Despite making much progress – both in terms of social movements and legal provisions, domestic violence still persists in India. It is rather on the rise in India posing a great concern for the human rights activists. Whereas the verbal texts have had limited effects in raising our consciousness, once transferred into life-like visuals, women become visibly matters of objectification. Most stop at raising the gender issues as their critiques. The research utilizes a multimodal approach, considering both the visual and verbal elements of film texts. By understanding the significance of film as a medium and its impact on viewers, this study provides insights into the intersection of cinema, society, and human rights.

**KEYWORDS:** Domestic Violence, Human Rights, Cinema and Society, Social Issues and Films

### INTRODUCTION

The Indian cinema industry has a huge impact on society, producing numerous films each year that reflect social norms and attitudes. Although many films are translations of verbal texts depicting the prevailing social conditions, the reactions and interpretations on screen generate a chain effect – usually not visible after the story or novel is published in print. Like fictions touching various themes and genres, the films tell stories in a much more subtle and crafted manner, with a clear focus. This is because as a cultural medium, films reflect the ‘dominant’ attitudes. And when it’s about a discourse on gender, Indian films quite often support patriarchal views and reinforce the viewpoint of the women being the weaker sex. The tension could also go deep down to the experiences of various kinds – physical versus psychological or emotional. But as the printed texts get semiotically translated into films, they play a more important role in shaping the perceptions of readers/viewers. And violence against women continues to be perceived as an acceptable phenomenon. Some may pick and choose this theme in the name of depicting realism. But generally speaking, it has been a theme of many films and television series, and a great favourite amongst the contemporary film makers. Though there have been many such films, studies that look at it from the perspective of violation of human rights have been very few. While legal protestations and cases against works of fiction have not been many, such reactions against their film versions are a common phenomenon these days. This paper examines the role of films in translating violence from textual sources to the screen and its implications for human rights violations. By analyzing two Hindi films that portray domestic violence, the study aims to shed light on the intersection of cinema, violence, and human rights.

### MULTIMODALITY IN FILM TEXTS:

There are different perspectives of studying a film and it includes the medium, inherent sign systems and the manifestations of text. According to Borstnar et al., (2002) films can be studied from different perspectives, the medium used (including multimodals), its inherent sign system and the text as it ‘appears’. As a medium, film can be interpreted as a system of processing of information and signs or symbols. As a sign system, films can be seen as a coherent whole comprising of elements that are interdependent. According to Bordwell and Thompson (1997), the relationships between the whole and the interdependent

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constituent elements are driven by formal and functional principles concerning narrative construction. The textual aspect of films or cinema attributes it to a particular cohesive and coherent formation of signs from the films, which are connected to each other by particular actualisation of the formal and functional principles, and which are produced and exhibited by and received through the medium of film. Some amount of texts are stated, sometimes quite bluntly by dialogues or portrayals, but a lot of it may remain latent – waiting for further interpretations. Film text comprises of other sign systems like language, visual communication, body language, kinesics or proxemics. In other words, film or cinema generally utilizes all sign systems. So, film text arises out of a consolidation of meaningful aspects of other elements which are already equipped with meaning by being part of the semiotic system. The film as a multimodal text, combines visual and verbal elements to convey a meaning. The relationship between these elements, guided by formal and functional principles, add to the overall importance of the film. A film consists of many layers of meaning which are conveyed through audio visual, hence it's a multimodal text. Film texts are understood as integrated textual constructs, which starts with the premise that parts interact and affect each other in the formation of the whole. Two types of semiotic codes will be understood, the verbal (for the present purposes, the sound-image correlation in a film text encompasses verbal) and the visual. The correlation will be understood and will contribute to the meaning of the film text.

The concept of “grammar of visual representation” is roughly expressed in representational, interactional and information-organisational meanings in texts. Since both visual communication and language express meaning, there is a degree of convergence between the two semiotic texts and systems. In other words, the premise is that it allows a correlation of meanings conveyed by linguistic structures and the meanings accomplished by visual structure with the perspective to overarching communicative functions they server (Baumgarten, 2005).

Two layers of information comprise a film text, visual information, and verbal information. Both these layers are important and are intertwined as the audience understands the film as a combination of both. In film, the linguistic reference to the extra linguistic position engulfing the encompassing the participants in the communicative process, provides two actions: one, it functions in creating a relatable real-life communicative encounter. It makes an object in the extralinguistic context, the topic of discourse. Secondly, it singles out elements for the audiences' attention. Multimodality therefore is the defining attribute of film texts. Both visual and verbal meanings can be understood as being placed parallel which are combined in a definitive manner to form one text (with multiple layers).

### **CONSTRUCTING CRIME AND JUSTICE ON**

#### **FILM:**

Films often depict crime and justice in ways that may not accurately reflect reality. Media representations tend to emphasize predatory violence and revenge as dominant crime themes. The constant presence, or even expectation of revenge and a complete absence of restorative principles of justice from the cultural landscape reflects a trend of the media to conform to the belief that people have a basic need for justice in social exchanges (Darley & Pittman, 2003). According to Raney, (2005) research shows that audiences display an inclination for narratives that associates or links punishment with justice. Surette (2007) points out that media are a shared social space where people's attitudes, judgments are polished and mediated. The representation of violence in media can influence viewers to support conservative approaches to criminal justice or seek innovative resolutions.

Many researchers have articulated that films act as an important source of knowledge for crime and violence (Hickey,2006; Rafter,2006). This is based on the presupposition that audiences are “largely visual generation that more readily identify with images than printed text”, (Rothe and Ross, 2007) ]. They are able to relate themselves more and readily with the film versions. Therefore, opinions and views of audiences about a storyline are formed by the visual culture. Diverse research throws light on the argument that media representation of violence can lead audiences to back or support conservative ways to criminal justice response (Surette, 1998; Weitzer& Kubrin 2004), or even look for innovative resolutions

#### **MEDIA AND JUSTICE:**

According to Coyne and Archer (2004) revenge and torture for wrongdoing and the link with law and justice are oft repeated narratives in films and television. Films like Whether it was the blockbuster Sholay (1975) or Karz (1980), Agneepath (1990) or Ghajini (2008) or the Zakhmi Aurat (1998) or Kahaani (2012) popularized vigilante heroism. In fact, retaliation by the victim has been construed as a populist form of justice, given its demand by the audiences (Philips & Strobl, 2006). Scholars like Katz (1987) have interpreted the act of suffering itself as a form of social practice where shared values and morals are considered to be communicated to the criminals or perpetrators restoring the natural social order.

The retaliation of the victims in Hindi cinema also includes women who become victims of domestic violence. Domestic violence has been on the rise every year. Gender based violence according to the World Development Report (2017) is a prevalent phenomena and is experienced by one in three women in their lifetimes. With the world dealing with the corona virus (COVID-19)

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and many countries including India being under complete lockdown, brought unintended negative consequences, domestic violence against women being one. According to the statistics shared by National Commission for Women (NCW) in India in April 2020 there has been a 100% increase in complaints relating to domestic violence against women after the lockdown.

Violence against women cuts across all ages, caste, social class, economic status, education levels, employment status and geographical regions (Bhat & Ullman, 2013). It is put forth by some that because commercial Hindi cinema objectifies women, those that consume this entertainment, regard as contributing to patriarchal and negative attitudes towards women (Manohar & Kline, 2014). In this reference it's important to understand how violence on women in films inform and shape perceptions and attitudes in individuals. Of the many forms of violence that we see in films that women face, domestic violence or violence by intimate partner is by far the most debilitating. According to Menjivar et al (2002), though marital violence is rampant across the world irrespective of any factors, it is normalized and legitimized in some communities or groups, "as an inherent part of their cultural repertoire". In a country like India, where family relations are driven and controlled by codes of patriarchy and family hierarchies, this is widely prevalent. Men within the framework of society and home still occupy the privileged position of power. The use of power which results in violence is justified as normal and part of the cultural milieu we are part of. Women are expected to tolerate in silence, as standing up or questioning is viewed as going against the social norms and if one does it comes with a price.

A lot of debate has been around domestic violence as shown in films. Such depictions in cinema influences both perpetrators and sufferers. They question how acceptable is it becoming or what the course of action or reaction should be. It is of great concern among activists, social scientists, filmmakers and feminist organizations. With the pandemic and lockdown underway many agencies have brought our attention to domestic violence within the four walls of the victims being locked inside their homes with abusive partners. We consider domestic violence as shown in two films and the victim as acted out by two iconic Bollywood actresses. The two films are *Daman (2001)* and *Mehendi (1998)*.

*Daman (2001)* is a film featuring a de-glamorized Raveena Tandon as the protagonist, Durga who is victimized by her husband - Sanjay Saikia (Sayaji Shinde), an educated, affluent tea state owner. The torture meted out to her by her husband leads her to a saturation point and then she is forced to take an extreme step.

*Mehendi (1998)* is a film starring Rani Mukherjee, who is tortured and beaten by her husband *Niranjan (Farhaaz Khan)* and in-laws for dowry. To save her husband she spends a night with a photographer as he had the evidence that will prove him innocent. She is then thrown out of her house, and a divorce petition follows. Finally, she takes her revenge against her in-laws and her husband by eliminating them one by one.

Both these films have the backdrop of traditional Indian marriage and constant traditional values are reinforced and observed. Any aspect of her demeanor that goes against the status quo is considered as a serious breach. Patriarchy expects her to conform to the ways of her new household and violence against her is considered normal.

To comprehend the nature of any act of violence or abuse, it is necessary to analyze the complexities in the life and character of the victimizer or abuser. This can be done in the light of two major theoretical approaches developed by researchers in the study of domestic violence – the family violence approach and the feminist approach. According to the family violence perspective, marital abuse is attributed to the character flaws of either of the spouses or the pressures that affect the family. Stacey and Shupe (1983), in their book, *The Family Secret: Domestic Violence in America*, observe that the character flaws could occur due to factors like violent socialization during childhood, alcoholism, drug addiction, mental illness, extra-marital affairs or lack of self-control. The second approach, which is a feminist one, pinpoints the patriarchal values of society and the dominance of men in heterosexual relationships as the main reason for marital abuse. This approach attributes domestic violence to the "very same normative structure that defines women as inferior, reaffirms dominance and aggression as positive attributes in men, and under presents women in all spheres of social, economic and political life" (Abraham, "Ethnicity" 452-453).

A close look at the abusive spouses in the films mentioned is against the theoretical inferences, we see an overlapping of many of the factors highlighted in making the two characters what they are. Male superiority and patriarchal values is an accepted and common norm in the makeup of both the male protagonists in the respective films. If we look both the films closely with reference to some common parameters that stand out are, the theme within the film structure, the story and plot element, the issue of solving the issue.

The central theme within the film is the positioning of the good vs evil. The way the good vs evil is depicted in both the films, it's a divide between the genders. But how in both these films the protagonist is faced with the villainy of the man but is also able to resolve it with the support of a man. The films used the linear technique of narrative, and the narrative is seen through the women's perspective. And finally, the struggle between the man and the women and the society at large. Not only are the women mocked or subjugated by the society but finally she takes revenge and brings about a closure. The end of the cinematic narrative stands out and definitely has an effect or can be seen as a translated into the acceptable text of society. Taking law in their own hands,

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or revenge being the last resort. It is in this light that we need to understand the title of the paper, Translating violence from texts onto screen: violation of human rights.

According to Govt. of India (2005), "Domestic

Violence" is defined in The Protection of Women from Domestic Violence Act (India, 2005) as "any act of commission or omission or conduct resulting in physical, verbal, emotional, sexual and economic abuse" and this can range from calling names, insulting, humiliating, controlling behaviour, physical violence to sexual violence." According to the Amnesty International, Universal Declaration of Human Rights (UDHR) in article 1: "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." Women are included in this brotherhood, yet they continue to be subjected to sexual and domestic violence by intimate partners and other relatives.

### CONCLUSION

This research paper explores the translation of violence from textual sources to the screen and its implications for human rights violations, focusing on domestic violence in Hindi cinema. By analyzing the films "Daman" and "Mehendi," the study highlights the influence of cinema on societal perceptions and attitudes towards violence against women. The analysis of these films within the context of human rights provides valuable insights into the intersection of cinema, society, and gender issues.

Through a multimodal approach, considering both the visual and verbal elements of film texts, the research paper examines how cinematic representations contribute to the normalization of violence against women and the potential consequences for human rights. By recognizing the power of cinema as a medium and understanding its impact on viewers, this study aims to contribute to the ongoing discussions on the role of media in promoting social change and advocating for gender equality and human rights.

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## Mobile Number Portability in Bangladesh, A Threat to Customer Retention



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**SYNOPSIS:** The research intends to identify whether MNP should be considered a threat to current market leader in the telecom industry and why mobile subscribers accept this innovative service. The researcher studied the reasons for taking this service using the primary empirical research method using 385 samples selected through snowballing. The technology acceptance model is the theoretical basis. Regression and factor analysis results show that customers accept the innovative service due to their perceived value creation, which incurs purchase intention. Perceived usefulness, perceived cost, and perceived ease of getting this service have added value creation and influenced customers' purchase intention. Future studies could be done to identify post-purchase satisfaction of customers and also the steps taken by telecom companies in Bangladesh or any other country where it is recently introduced.

**Originality and value:** The concept of Mobile number portability is an innovation itself in Bangladesh. Significant studies have not been done on this concern; this research will put some clarity on the situation and future direction on this area of research. This research is solely conducted by the researcher and it is an original study.

**KEYWORDS:** Mobile Number Portability (MNP); Telecom Industry; Innovation, TAM, Switching cost; Value creation; Retention.

### INTRODUCTION

Bangladesh has an already grown telecom industry. Currently, four mobile operators are operating here- Grameen phone Ltd (GP), Banglalink Digital Communications Limited, Robi Axiata Limited (Robi), and Teletalk Bangladesh Ltd (Teletalk). The Grameen phone has the largest market share of 83.46 million subscribers out of **181.02** million. The telecom market has achieved massive growth since 2004, as soon as the mobile phone was introduced here. There was a 100% growth in the subscriber base in the year 2004, 137% in 2005, and 148% in 2006. But 2007, the growth rate started declining, and in 2010 it reduced to 10% (Kader & Salam, 2018). As a result, the total number of Mobile Phone subscribers reached 181.02 Million at the end of December 2021 (BTRC, 2021).

Mobile number portability (MNP) is the ability to change mobile operators without having to change existing numbers. MNP lessens the exit barrier for customers by eliminating one of the switching costs assumed by customers. MNP has been introduced in many countries in the world. It was initiated on October 1, 2018, in Bangladesh. Right after its introduction, mobile operators are experiencing a massive response among customers. Since its launch on October 1, 2018, within the 1st year, around 3 million users switched operators while retaining their 11-digit numbers. Mobile number portability opens a new horizon for marketers and customers. This service has been present in many countries. MNP was introduced in Singapore in 1997 and then in the UK, Netherlands, and Hong Kong two years later (Kutlu & Bogazici, 2013)

Bangladesh is the 72nd country to launch the service. Customers will be charged Tk. 50 plus a vat of 15 percent if regular porting time is used, which is 72 hours. If someone wants to do it in 24 hours, an additional BDT 100 is needed to be paid. The customers taking this service once must wait 90 days to switch again. Infozillion BD Teletech, which is a joint venture between a Bangladeshi firm and a Slovenian firm, has completed preparations for the launch (The Daily Star, 2021)

MNP covers only the Mobile Subscriber ISDN Numbers (MSISDN) number so it can affect services like SMS and MMS, outgoing and incoming calls, prepaid services, etc., as it does not change International Subscriber Mobile Identity (Siwach, 2011). However, it is important to note that with the advent of MNP, one cannot accurately identify a service provider by just knowing the mobile

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number. For example, In Bangladesh, before the implementation of MNP, GP numbers were used, to begin with, 017 or 013, Robi and Airtel with 018 or 016, Banglalink with 019, etc.

With MNP, switching costs (such as learning, transaction, or contract costs) are tremendously reduced for the end users. A natural consequence of this is that the end-user has more options. Since the customer has more options, competition between companies will increase. They will be forced to reduce service tariffs and improve their quality of service to maintain and improve their market share.

Similarly, MNP introduces more competition for the existing market share for the service providers. This competitiveness, in turn, will force MNOs to improve their quality of service in order to retain existing subscribers and attract new ones. Furthermore, the competition experienced as a result of MNP will ensure standard market rates / little variation in tariffs and therefore reduce entry barriers for new entrants.

All these will definitely make it easier for customers to switch between the service providers. With the hassle-free transfer of operators, customers can choose the service providers they feel comfortable with. However, the firms here need to consider this a challenge to keep customers from switching by increasing their loyalty through various strategies. They must understand why customers leave a firm and concentrate on increasing their loyalty programs and perceived service quality. It is also noted that additional services and pricing contribute a significant role in loyalty creation or termination.

**Research objectives:** The primary objective of the research is to identify the factors that initiate switching so that telecom companies may take preventive or corrective measures to tackle that.

### LITERATURE REVIEW

Mobile number portability (MNP) is an excellent opportunity for subscribers to switch between operators without changing numbers. It can be of three types- location portability, service portability, and operator portability (Sutherland, 2007). Initially, it was expected that mobile operators would focus on improving the quality of their service in order to create satisfied, loyal customers (Khan, 2010).

The MNP could either be donor-led or recipient-led. When the subscriber change operator through the permission of the existing operator, it is called donor-led Porting. Furthermore, in the case of the recipient-led porting, the recipient operator does everything (Ofcom, 2009). Because of the MNP opportunity, switching costs are reduced, allowing end users to make choices easily. This, in turn, forces operators to rethink their service tariffs and improve service quality (Ominike & Akpovi, 2016). Customers' switching costs are incurred while switching to a competitor's product or services, such as the opportunity costs of customers' time, effort, knowledge, services, or relationships. (Hess & Ricart, 2002). Moreover, Burnham, Frels, and Mahajan (2003) identified transaction costs, learning costs, and contractual costs as switching costs.

Though MNP reduces these switching costs, an increase in hardware and software infrastructure costs for initiating MNP happens. In addition, advertising and marketing costs also increase. (Boateng & Owusu, 2013)

It has been found that the switching cost, the interpersonal relationship, the alternatives' attractiveness, and the service's recovery affect customer retention by creating a switching barrier (M.K. Kim, Park, & Park, 2003). Other studies on customer retention have emphasized customer satisfaction and the switching barrier (e.g., Dick & Basu, 1994; Gerpott, Rams, & Schindler, 2001; Lee & Cunningham, 2001). Customers experiencing a high level of satisfaction are likely to remain with their existing providers and maintain their subscriptions. However, some found that customer satisfaction increases loyalty, but more is needed sometimes. In this context concept of the switching barrier was proposed (Jones, Mothersbaugh, & Betty, 2002). Customer satisfaction means customers' perception of the state of fulfillment and how they judge the fulfilled state (Oliver, 1997)(Moon Koo Kim, Park, & Jeong, 2004). Also, the finding that service quality is not as significant as switching cost predicts that customers may stay with their current service provider despite having low satisfaction (Habib et al., 2011; Shin, 2006).

The technology acceptance model (TAM), introduced by Davis in 1986, was based on the theory of reasoned action (Fishbein & Ajzen, 1975). The model has been designed to show how users come to accept and use technology. The theoretical basis is built on the premise that when there is a chance to use a new technology, three factors impact customers' decision regarding accepting it. The first determinant is the perceived usefulness (PU) of the new technology, the second one is the perceived ease of use (PE), and the third determinant is user attitude towards usage (PA). In case of mobile number portability, as it is a new technology in Bangladesh with its unique feature of having collaboration among the operators to coordinate and cooperate in providing more uniform service. For this, there is another thing that should be considered, and it is the cost factor associated with the use of MNP services.

## Mobile Number Portability in Bangladesh, A Threat to Customer Retention

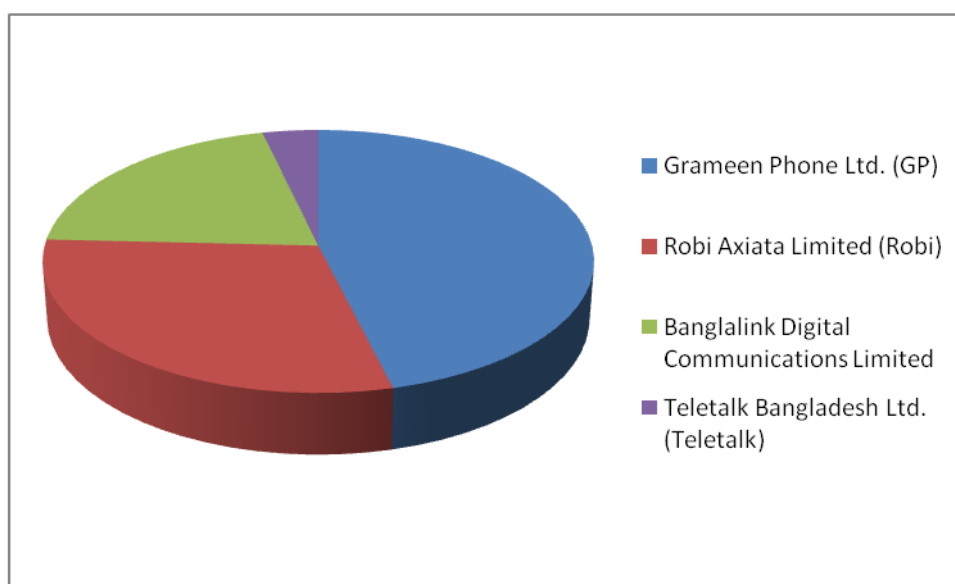
### Current status of Mobile Number Portability in Bangladesh:

After introducing Mobile number portability, it has gained significant responses among subscribers in Bangladesh. Table 1 shows the existing scenario of Bangladesh's telecom industry's market structure. Table 2, on the other hand, provides the statistics of customers who already used the service for changing their operator using MNP.

**Table 1: Mobile Operators and their market share in Bangladesh**

OPERATOR	SUBSCRIBER (IN MILLIONS)	Percentage
Grameen Phone Ltd. (GP)	83.46	46.12%
Robi Axiata Limited (Robi)	53.67	29.64%
Banglalink Digital Communications Limited	37.22	20.56%
Teletalk Bangladesh Ltd. (Teletalk)	6.67	3.68%
<b>Total</b>	<b>181.02</b>	<b>100</b>

Source: BTRC (BTRC, 2021)



**Figure 1: Telecom industry market share in Bangladesh**

**Table 2: statistics of customer switching from October 2018 to October 2019**

OPERATOR	Joined	Left	Net Gain/Loss
Robi Axiata Limited (Robi)	4.96 lakh	1.69 lakh	3.27 lakh
Grameen Phone Ltd. (GP)	1.26 lakh	2.74 lakh	-1.48 lakh
Banglalink Digital Communications Limited	68528	2.89 lakh	-2.20 lakh
Teletalk Bangladesh Ltd. (Teletalk)	4427	8101	-3694

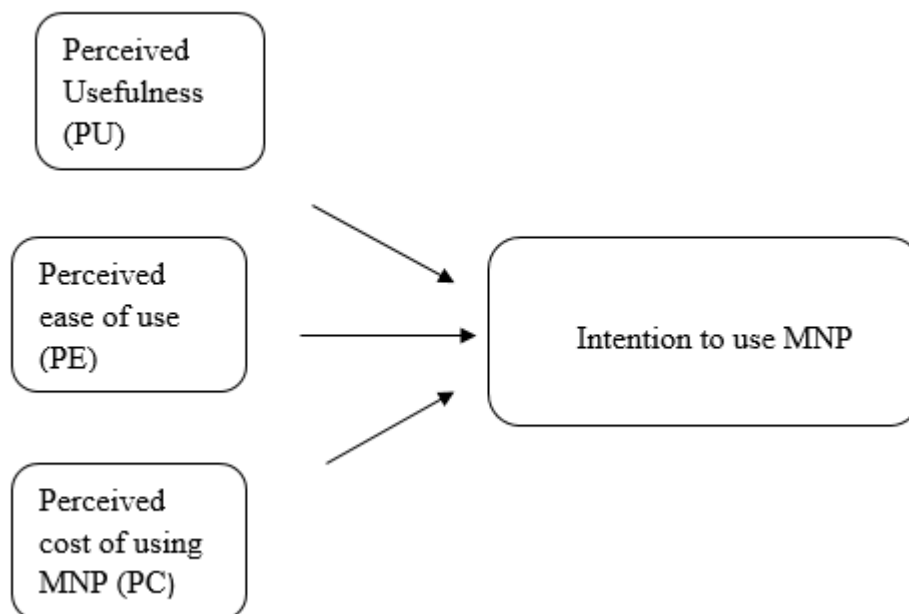
Source: Dailystar (The Daily Star, 2021)

After MNP was launched in 2018, within just one year time period, 6.944 lakh subscribers have used MNP to change their operator. Among those subscribers, 4.96 chose Robi switching from their previous operator. Alongside, 1.69 lakh customers left Robi. The net customer gain of Robi is 3.27 lakhs. This may indicate that there is a chance that GP might face a great challenge from Robi. It is found that, normally, the dominant GSM operator loses the most number of subscribers (Buehler et al., 2006; Samura, 2004; Levin, 2006).

## Mobile Number Portability in Bangladesh, A Threat to Customer Retention

### Conceptual Framework:

Based on the technology acceptance model introduced by Davis in 1989, we can prepare the following relationship of perceived usefulness and perceived ease of use along with the perceived cost of using the new technology toward the intention of using MNP service.



**Figure 2: Conceptual model for the research**

**Source:** Technology Acceptance Model (Adapted from Davis, Bagozzi, & Warsaw, 1989). Modified Technology Acceptance Model (Samuel, 2016).

### METHODOLOGY

The research aims at studying the prospects of number portability in Bangladesh. The researcher has conducted a survey that consists of 28 questions in total. A pilot survey was administered with five end-users to revise and complement survey questions. The survey is prepared in 2 parts. The first part contains questions to obtain the respondent's background data (age, education, gender, etc.), and the second part includes questions to determine the mobile usage (number of subscriptions, usage period) of the respondent. The data for this study are gathered through conducting a survey through face-to-face structured interviews and online via Google form. The questionnaire was designed to measure the perceived usefulness and ease of using MNP and the perceived cost for it so that the usage intention could be measured. The total population taken was 181.02 million subscribers as on December 2021. The sample size is 385, according to (Krejcie & Morgan, 1970). The sample was chosen via snowballing due to the inability to collect data face-to-face during the pandemic situation.

### DATA ANALYSIS AND FINDINGS

No.	Variables	Items	Reference
1	Perceived Usefulness	<p>MNP will provide more flexibility in trying several operators.</p> <p>MNP will enable me to stick to my previous number.</p> <p>MNP can enhance healthy competition among service providers.</p> <p>MNP induces better quality of service and reduced prices in the cost of calls.</p>	<p>Buehler &amp; Haucap (2004) ; Durukan, Bozaci, &amp; Dogan (2011)</p> <p>Park (2010)</p> <p>Shin ( 2006)</p>



## Mobile Number Portability in Bangladesh, A Threat to Customer Retention

2	Perceived ease of using MNP service	With MNP, it takes minimal formality to port from one operator to another. Easy for anyone to use the service Switching process is easy to understand	Davis (1989) and Grefen et al. (2003) Adams, Nelson & Todd, (1992).
3	Perceived cost for using MNP	Changing operator takes minimal time Switching charge in Bangladesh is low The perceived quality of switching is very good	Olaru et al, (2008, 556)) Voss et al. (1998)
4	Intention to use MNP	I will use MNP to avail better service will port if I am dissatisfied with the current operator I will recommend others to use MNP	Roos (1999) Kim and Yoon (2004)

**Table 3: Reliability analysis**

Factor	Number of Items	Cronbach's Alpha Value
Perceived Usefulness	4	0.827
Perceived ease of using MNP service	3	0.800
Perceived cost for using MNP	3	0.743
Intention to use MNP	3	0.720

The first step in this analysis is to assess the reliability of the survey using Cronbach's Alpha test (Table 3). A value greater than 0.7 shows that the reliability of the questionnaire is high (Griethuijsen et al., 2014). For each set of items, the reliability of the questionnaire is greater than the acceptable range. The reliability assures the acceptability of the samples and questionnaire construction.

**Table 4. Background Data of the Respondents (n=385)**

Descriptive Statistics of Respondents	Frequencies			
	Gender	Male		Female
	<b>210</b>		<b>175</b>	
Age Level	18 to 28 years	28 to 38 years	38 to 48 years	Above 48 years
	<b>44</b>	<b>142</b>	<b>136</b>	<b>63</b>
Education Level	Less than or at least Undergraduate	Graduate		Postgraduate or Higher
	<b>122</b>	<b>130</b>		<b>133</b>
Awareness about MNP	Aware		Not Aware	
	<b>319</b>		<b>66</b>	

**Table 5: Regression Results**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507 <sup>a</sup>	.257	.237	2.012

Predictors: (Constant), Perceived Cost, Perceived Usefulness, Perceived Ease

The regression results show that the predictors explain around 50% variation in the dependent variable, which is the intention to adopt MNP.

**Table 6: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	524.327	10	52.433	12.948	.000 <sup>b</sup>
	Residual	1514.462	374	4.049		
	Total	2038.790	384			

## Mobile Number Portability in Bangladesh, A Threat to Customer Retention

a. Dependent Variable: Intention to use MNP

Predictors: (Constant), Perceived Cost, Perceived Usefulness, and Perceived Ease

We know that for 10 degrees of freedom, the critical value of F is less than 1.91, which is less than the calculated value 12.498 found here. So we may infer that it is prominent that perceived cost, usefulness and ease of use have significant influence on purchase intention.

**Table 7: Factor Analysis**

	Component		
	1	2	3
Flexibility	<b>.841</b>	.000	.135
Opportunity to Use current number	<b>.818</b>	-.050	.057
Competitive offers	<b>.793</b>	-.060	-.081
Better service quality	.752	.009	-.288
Minimal formality	.049	<b>.841</b>	-.009
Possible for anyone	.051	<b>.875</b>	.039
Easy to adopt	-.240	<b>.725</b>	.228
Low porting charge	-.050	.481	<b>.637</b>
Option to switch back to the former operator	-.066	-.065	<b>.795</b>
Minimal time required to initiate	.019	.124	<b>.792</b>

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

According to the factor analysis, flexibility, opportunity to use the current number, and competitive offers are the first group of components to affect the intention to use MNP. On the other hand, minimal formality, possible for anyone, and easy adoption belong to the second group. The third group of components is low cost to avail the service, switching back, and minimal time requirement.

## CONCLUSION

Mobile number portability, though quite new in the context of Bangladesh, can really arise as an important threat to prominent telecom service providers here. The opportunity that it creates for switching in and out of the current service provider is actually making it very attractive to the customer. Whenever a customer feels dissatisfied, he or she may decide to take up this service, and this will make companies struggle harder to retain existing customers. The bright side is that MNP can make it necessary for firms to compete in identifying and stressing service innovation in the telecom industry of Bangladesh (Buehler & Haucap, 2004); (Durukan et al., 2011). However, Shin (Shin, 2006) also MNP aids in creating an equal playing field and encourages the entry of new mobile operators. Existing firms like Grameen phone Bd or Robi can use this MNP as a necessitating service not only for getting new customers but also to look into identifying gaps in their service to avoid customer switching. They can identify new services or offers that might engage customers more positively toward their brand and services. MNP offering offers that can outrun the competitors can keep current customers as well as get new ones (Boateng & Owusu, 2013). Future studies can be attempted to assess the customer satisfaction of MNP and also the issues faced by the telecom industry regarding this.

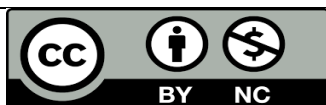
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## The Influence of Volleyball on the Tradition of Rasulan in Saban Hamlet, Karangwuni Village, Gunungkidul Regency



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**ABSTRACT:** This study entitled “The Influence of Volleyball on The Tradition of Rasulan in Saban Hamlet, Karangwuni Village, Gunungkidul Regency” aims to describe and analyze the relationship between volleyball and rasulan tradition, especially in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency. This research is a qualitative descriptive study that describes how the influence of volleyball on rasulan tradition in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency. The subjects in this study were a Village Head, a Hamlet Head, a person from youth organization, and a sportsman. Data were collected through interviews, observation, and documentation. Data analysis techniques used in this study were data reduction techniques and data display. The results showed that volleyball has a considerable influence and appeal in implementing rasulan activities, and the role of the village government and the community is also quite good. In addition, the youth organization there (*Karang Taruna*), who has a role as the committee, has been able to show good performance in its implementation.

**KEYWORDS:** Volleyball, Rasulan Tradition

### I. INTRODUCTION

Most Javanese people live in an agrarian environment, so most of them rely on the needs of their lives in the agricultural sector. Therefore, this community tries to have an inner relationship with the land that is the source of its livelihood in various ways, including holding traditional ceremonial rituals. This traditional ceremony has its characteristics in each region. Traditional ceremonies, according to Suyono in (Herawati, 2004: 115), are traditional party activities regulated according to customary or legal procedures that apply to the community to commemorate important events or others with the relevant customary provisions. The traditional ceremony carried out is the clean village ceremony or popular with the term ‘rasulan’. This ceremony is celebrated once a year after the harvest period. This ritual is a tradition carried out by the community in Gunungkidul.

In the era of globalization, this rasulan ceremony is a local culture or characteristic owned by Gunungkidul Regency. Local culture can be a source of local wisdom in facing the growing culture of globalization. Therefore, the government and the community consider the rasulan tradition in the Gunungkidul area because, in the rasulan tradition, there are elements of a regional characteristic. There is also a sports tradition when a rasulan culture runs. The purpose of this rasulan tradition is so that the upcoming harvest (next year) is not reduced and that areas that carry out this tradition avoid disasters or calamities.

In its implementation, the timing of the implementation of the rasulan activities depends on the agreement of the residents of each hamlet and usually lasts for several days. The activities begin with devotional work or cleaning the environment around the hamlet. Furthermore, the rasulan tradition is also enlivened by various other activities, such as sports. One of the sports that is carried out is volleyball. The reason for choosing volleyball as one of the series of events is because it entertains the community and the preparation in conducting volleyball matches is also easy. In addition, it also utilizes the volleyball field owned by each hamlet in Karangwuni Village, with the existence of sports activities that have been integrated into the rasulan tradition. The author focuses on volleyball’s influence on rasulan tradition in Rongkop District, Gunungkidul Regency.

### II. MATERIALS AND METHOD

This is a qualitative approach research that uses descriptive research methods. Sugiyono (2018: 9) asserts that qualitative research is a research approach based on the philosophy of postpositivism, used to examine the condition of natural subjects (as opposed to experiments) where researchers are key instruments, data collection techniques are triangulated (combined), data analysis is inductive/qualitative, and the results of qualitative research emphasize meaning more than generalization.

## **The Influence of Volleyball on The Tradition of Rasulan in Saban Hamlet, Karangwuni Village, Gunungkidul Regency**

The method used to conduct this research is a descriptive method. Prastowo (2011: 203) suggests that the descriptive method is a research method that seeks to uncover the facts of an event, object, activity, process, and human being "as is" at present or period that is still possible in the memory of the respondent in which there is no treatment or manipulation of the research object. Based on this explanation, researcher conducted this study by digging or searching for data on the Development of the Tradition of Rasulan with Volleyball in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency. This study describes the circumstances and facts of the object or subject. Data collected through interviews, observations, documentation, and field records are then analyzed using qualitative descriptive methods. Through this technique, the author will describe, elaborate and interpret the data collected to obtain a general and comprehensive picture of the influence of volleyball on rasulan culture in Karangwuni Village, Rongkop District, Gunungkidul Regency. Based on the results of research that has been obtained in Karangwuni Village, Kecamatan Rongkop, Gunungkidul Regency about the effect of volleyball on rasulan tradition, the following results were obtained:

### **a. The Meaning of Rasulan in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency**

Rasulan activities are hereditary traditions from ancestors that are still preserved in Gunungkidul. Rasulan is interpreted as an expression of the farmers' gratitude to the God for the abundance of crops for a year. This expression of gratitude is realized by carrying out tumpengan and clean village activities or mutual cooperation. It aims to strengthen the relation and also the cohesiveness among residents.

### **b. The Determination of Rasulan in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency**

In carrying out rasulan tradition, *padukuhan* or *padukuhan* groups conduct deliberations with village elders to discuss about the day of rasulan. The deliberation was conducted at hamlet hall and is conducted one month before the implementation of the rasulan. The implementation of rasulan itself is usually on the giant moon or before Eid al-Adha.

### **c. Village Government Efforts in Supporting Rasulan Activities in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency**

Implementing rasulan activities is usually enlivened by other activities such as art performances, volleyball matches, and others. In supporting these activities, the village government provides support in the form of materials. Also, it provides facilities, such as sand, to renovate the village gate, fix the road, repair talus (fortification), and fix field facilities that will be used to organize a series of rasulan activities.

### **d. The Role of the Community in Rasulan Activities in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency**

The community has a considerable role in the implementation of rasulan activities. Before rasulan is held, the committee of its activity is usually formed to facilitate coordination with the community. The rasulan committee is formed through deliberations with the village head and the youth organization. In this case, youth organization, as a young generation, has a considerable role in implementing rasulan activities.

### **e. The Influence of Volleyball on Rasulan Activities in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency**

Volleyball is one of the sports that are in demand by many people, including most in Gunungkidul. In the village of Karangwuni, volleyball became one of the most popular sports in the community; this is evidenced by the volleyball field owned by each hamlet, including in the hamlet of Saban. The existence of volleyball in a series of rasulan activities can increase friendship between residents and also foster a sense of togetherness and mutual belonging among the villagers.

## **III. DISCUSSION**

The focus of discussion in this study is the influence of volleyball on the rasulan tradition in Saban Hamlet, Karangwuni Village, Rongkop District, Gunungkidul Regency.

### **1. The Meaning of Rasulan Tradition**

Rasulan tradition is a clean village tradition, often called '*merti*' village, which has been carried out for hereditary generation by the people of Gunungkidul, especially the people of Saban Hamlet. Rasulan can be interpreted as the expression of religious values, and it can be seen from the essence of rasulan itself, which is an expression of gratitude to the Life Giver, God. The people of Saban Hamlet interpret the rasulan other than as an expression of gratitude to the Life Giver is also interpreted as strengthening

## **The Influence of Volleyball on The Tradition of Rasulan in Saban Hamlet, Karangwuni Village, Gunungkidul Regency**

the relationship or friendship between residents. Activities carried out in enlivening the rallies strengthen the friendship, because the community directly participates in a series of activities held in rasulan.

### **2. The Determination of Rasulan in Saban hamlet**

In determining the date of the implementation of rasulan, the padukuhan or padukuhan group conducts a joint consultation at the dukuh hall. The deliberation was conducted with the village elders and also representatives from the community. Rasulan in Saban hamlet is held once every year, but in the hamlet and other villages, rasulan is implemented twice a year. Rasulan that is carried out twice a year is carried out before the farmers sow rice seeds, called the 'rasul gede'. This tradition is usually done by the people of Saban village every year.

### **3. Village Government Efforts in Supporting Rasulan Activities**

The village government has an essential role in the implementation of the rasulan. Karangwuni village government fully supports the implementation of rasulan in each village. The support provided by the village government in the form of materials and the provision of facilities is realized by providing costs to each hamlet to improve the facilities that need to be repaired. In addition, the facilities in question provide a field to carry out a series of regular activities.

### **4. The Role of Society in Rasulan Activities**

The success of rasulan is determined by how much community participation. In implementing rasulan activities, a committee is formed to facilitate coordination and smooth implementation. The rasulan committee is formed with the village head, hamlet head, youth organization, and community representatives. This committee has the task of making a plan for the rasulan activities. Establishing a committee of rasulan is usually done one month before the implementation of rasulan itself. In forming this committee, of course, the community must participate in the smooth implementation of the rasulan activities. This committee has the task of preparing all the needs of the event to enliven the event.

### **5. The Influence of Volleyball on Rasulan Tradition**

The volleyball is one of the sports in great demand by the community, and it is no exception to the community in Gunungkidul. Implementing the volleyball during rasulan is exciting to many people, either participating in sports activities or just watching. In addition, volleyball in a series of rasulan activities has an impact on the surrounding community where the activity is carried out, in this case, the community of Saban Hamlet. The volleyball tournament increases the income of the surrounding community because many residents sell during the activity.

The volleyball tournament is usually done in the afternoon after the event, but it depends on the agreement of the citizens and also the committee. The volleyball, in addition, being one of the activities that enliven the community, also aims to strengthen the friendship among residents of Saban Hamlet and other villagers. Although it is a competition, people do not see it as competition. The philosophy that can be gleaned from the existence of volleyball activities in the rasulan tradition is to train sportsmanship, hard work and team work.

## **IV. CONCLUSION**

Based on the results of the study through observations, interviews, and documentation that have been reduced and displayed and also based on the discussion carried out, it can be concluded that:

1. Rasulan, as the original culture of the Gunungkidul community, is a community tradition that has its own uniqueness and is a characteristic of the farming community, where the relationship between humans and nature is an inseparable bond. Gunungkidul community, in this case, is the community of Saban Hamlet. Most of its residents work as farmers causing elements of culture related to agriculture to develop in their community, one of which is Rasulan tradition.

The people of Saban village carry out rasulan as a form of gratitude to God described by humans with respect for their natural products. For them, this rasulan tradition has a positive value as a guardian of harmony in community relations, namely togetherness, solidarity, and harmony. The people of Saban Hamlet no longer think that the tradition of rasulan is only to serve God, but they are also aware that this tradition can increase social solidarity among the community.

2. In the determination of the date of the implementation of the Rasulan, deliberation is carried out with the village elders and representatives of the residents. The series of rasulan events began with tumpengan, which was then continued with other activities such as art performances and sports. The sport that is often held when racing is volleyball. Volleyball is a sport that is favored by the majority of people in Karangwuni village, especially the people of Saban Hamlet.

## The Influence of Volleyball on The Tradition of Rasulan in Saban Hamlet, Karangwuni Village, Gunungkidul Regency

In relation to the meaning of rasulan, the volleyball has a relationship with the implementation of rasulan activities. The relationship between the volleyball and rasulan can be seen from the purpose and benefits of these activities. With volleyball in a series of rasulan activities, further strengthens the relations between residents, fostering a sense of solidarity and also togetherness between residents. Therefore, the existence of volleyball is also one of the factors that encourage the preservation of rasulan activities.

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## An Evaluation of Selo Kencono Futsal Club (SKNFC) Kebumen Coaching Program



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**ABSTRACT:** This study aims to evaluate the futsal club program using the CIPP model (context, input process & product) with a qualitative approach and an interactive analysis model from Miles & Huberman. This research uses a descriptive qualitative approach method. The object of evaluation is SKN FC Kebumen. Six participants were deliberately selected as interview participants. Data collection was carried out as follows: (1) making indirect observations; observing news about the object of evaluation, direct observation; observing activities in the mess and team exercises (2) conducting documentation, (3) conducting interviews with six participants. The instrument was validated by using 'expert judgment'. Success criteria evaluate each CIPP variable with three categories: good, fair, and poor. With the CIPP analysis combined with a comprehensive approach, the evaluation results in terms of context include vision and mission and the club's goals in living the league is included in the "fair" category. In terms of input, which includes recruiting players and coaches is in the "good" category. Regarding the process, which includes implementing training programs, provision, use, maintenance of facilities and infrastructure, and funding is included in the "fair" category. In terms of products, which include positive and negative results, alignment of goals with costs and achievements generated, program success, and programs that can be continued is in the "good" category.

**KEYWORDS:** CIPP Evaluation, Coaching, Futsal

### I. INTRODUCTION

The system of coaching influences the development of the sport. Sports coaching is one of the critical factors in improving sports performance. If the construction system is carried out well, the development of the sport will also be good. Fulfilling and developing every sports branch would require hard work and extra attention from various parties. Several factors must be considered concerning the coaching of sports achievements. According to Triyasari (2016:2), the goals of coaching are systematic training programs, training materials, appropriate training methods, and evaluations that can measure the success of the coaching process itself. Success in any arena is sometimes the result of planning, hard work, commitment, and no exception to athlete training (Bompa and Carrera, 2015:1). In addition, it needs to be considered in athletes, namely the characteristics of athletes who are fostered both psychologically and physically, the ability of coaches, facilities and infrastructure, and the condition of the coaching environment. Langbein and Felbinger in Setyoko, Tunas, and Sunaryo (2016), explain that program evaluation "is the application of empirical social science research methods to the process of judging the effectiveness of public policies, programs, or projects, as well as their management and implementation, for decision-making purposes". According to the National Study Committee on Evaluation from UCLA in Widyoko (2013:4), "evaluation is the process of ascertaining the decision of concern, selecting appropriate information, and collecting and analyzing information in order to report summary data useful to decision makers in selection among alternatives". It means that evaluation is a process of analysis, collection, selection, and presentation of information presented as the basis for decision-making and the preparation of subsequent programs.

Program evaluation is an action to judge the value of a particular program or some elements in it (Anguera & Chacon in Moscoso, Vidal, & Argilaga, 2012). Norris. J. M (2016:105) asserts that the value of evaluation is primarily determined by how it helps specific people understand how and to what ends programs are functioning and by the degree to which that understanding is put to use. "The value of evaluation is then broadly determined in part by the extent to which it helps certain people understand how and what program ends up functioning, and the extent to which that understanding is used". It means evaluation is a process carried out on a program which is divided into three stages; the first can be further divided into needs assessment, objective evaluation, and design evaluation, while the second refers to implementation evaluation, and the third is critical elements of results. Muryadi in Mustofa A. A. (2020:17) says that the program evaluation is oriented around the attention of the policymakers



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of the funders to characteristically include questions about the causes of which the program has achieved the desired goals. A program is a series of carefully designed activities, and their implementation takes place continuously and occurs in an organization involving many people. In addition, Sukardi (2014:47) added that program evaluation is a method to determine and assess a program's effectiveness by comparing the predetermined criteria or goals to be achieved with the results achieved.

One of the competitive sports that have been popular in recent years is futsal. Futsal, if it is seen from the principle of the game, is same as other team sports which use ball, such as football, basketball, handball, and hockey (Duarte et al. 2009); namely, players work together to achieve a common goal of scoring when the team has the ball and prevent the score from the opposing team (Travassos., et al., 2011). In Central Java, especially Kebumen Regency, futsal has recently experienced relatively rapid development. It can be seen from many futsal field facilities that have sprung up, ranging from field rental services to futsal field facilities in schools to universities. It can also be seen from the existence of many futsal clubs, one of which is SKN FC Kebumen. SKN FC Kebumen is a professional futsal club which was found on the 5<sup>th</sup> of July 2017. SKN FC Kebumen is Indonesia's highest-level professional futsal league competition club, or the Professional Futsal League (PFL).

SKN FC Kebumen has also participated in the national futsal championship with an age limit of 20 years old, where the championship is an annual agenda of the Indonesian Futsal Federation (FFI). On the other hand, the players who participate in the competition were still lack of players who come from the the region. The selection of athletes of the age group of 20 years and senior team athletes is carried out openly followed by prospective athletes from various regions of Kebumen such as Jakarta, Bandung, Yogyakarta, Surabaya. Looking at previous studies, it has been said that the coaching and identification of athletes from an early age contributes to sports achievement at a higher level (Ie Gall, Carling, Williams, & Reilly, 2010; Meylan, Cronin, Oliver, & Hughes, 2010; Unnithan, White, Georgiou, Iga, & Drust, 2012).

The involvement of SKN FC Kebumen in the Indonesian professional futsal league already has achievements at the national level in 2018 which went to final match and got a runner-up position. Then, at the international level, SKN FC Kebumen was as Indonesia's representative in the Southeast Asian futsal championship. SKN FC Kebumen entered the semi-finals in AFF Futsal and got fourth place. However, based on researchers' observations, SKN FC club has yet to show optimal results as the champion desired by club owner, H.M. Tursino. Judging from the last results of the Indonesian professional futsal league in 2019, they could only finish in third place. There are no results that match the expectations of the club management of SKN FC Kebumen. On the other hand, the management has incurred costs that are not small. Certain factors could be the cause and obstacles to coaching achievements from this year. A comprehensive and innovative effort is needed; one of the implementations of these efforts is to conduct evaluation research using context, input, process, and product (CIPP) models. Evaluation activities must be carried out comprehensively so that the results or products can later be used to determine a program's quality. This statement explains that the evaluation is used in depth to assess the supporting elements of a program. With the CIPP model, evaluation research is carried out according to program objectives, comprehensively to understand program activities until results are found after the program is run (Wiyanto, 2017: 883). The implementation of the CIPP model in the research world is synonymous with organizational planning programs because the focus is on administrative decisions and provides a theoretical framework that can guide the determination of the quality and benefits of the overall program (Klenowski, 2010: 337; Lippe & Carter, 2018:9). For this reason, a comprehensive study is needed, and the results of this study are expected to provide input and improvement. Researchers want to trace a case through the Evaluation of the SKN FC Futsal Sports Coaching Program in Kebumen Regency, which will later be used as an improvement of the coaching program.

## **II. MATERIALS AND METHOD**

The researcher used an evaluation of the type of program evaluation with a descriptive-evaluative method approach. Program evaluation identifies the source variations in program results from within and outside the program while determining whether the sources of variation or the results themselves are desirable or undesirable (Frye & Hemmer, 2012: 289). The descriptive method means that this study was conducted to describe the SKN FC Kebumen coaching program in conducting Indonesian futsal professional league competitions related to preparation, implementation, and results on the field. This evaluation study was conducted intending to see the extent to which the exercise results have produced a desired product (athlete achievement). Collecting data and presenting accurate and objective information about futsal sports coaching at SKN FC Kebumen in Central Java Province. Based on the accuracy and objectivity of the information obtained, can further determine the value or success rate of the program so that it helps problem-solve and consider whether the program needs to be continued or modified. This research method uses qualitative research. Qualitative research can help provide basic information about context and subjects, serve as a source of hypotheses, and aid in scale construction (Brannen, 2005). The logical arguments from the background of the selection of this approach are (1) the instrument for collecting data in the form of in-depth and focused interview sheets, therefore the

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researcher himself as a human instrument, (2) the data collected in the form of several documents encountered and verbal information from the answers of the participants and (3) the accountability of the results of the interview using data triangulation techniques. The researcher hopes this model can comprehensively evaluate the SKN FC Kebumen coaching program in conducting Indonesian professional futsal league competitions. The CIPP model is a model that is expected to carry out comprehensive evaluation activities; the results of the CIPP model can provide sustainable information to policymakers (Alkin, in Sumarno 2019:91).

The CIPP model is used because it is more suitable to evaluate the implementation of programs that are expected to provide input to parties related to the SKN FC Kebumen coaching implementation. This research was conducted at SKN FC Kebumen, one of the futsal clubs considered to meet this study's criteria. Thus, the primary location of this study was two club training sites located on the futsal field 3 Score, Jl. Raya Sokka No. 135, Pejagoan, Kebumen, Central Java and Planet Futsal Sleman Yogyakarta, on Jl. North Ringroad No.168, Condongcatur, Sleman Regency, Yogyakarta. Other places included in the data collection location in this study were the offices of PT. SKN Group Kebumen and GOR (sports hall) Yogyakarta State University, during the Indonesian futsal professional league match. The population of this study is partly (internal stakeholders) registered to follow the Indonesian futsal professional league at SKN FC Kebumen. Participants as a source to obtain data are the central part selected from the existing environment at SKN FC Kebumen. In addition to the athlete's target group, data were obtained from coaches, management staff, and club chairs. Participants/respondents were determined based on specific considerations (purposive). With the purposive/purposeful method, the sample or selected respondents can provide the best information on the studied research problem (Creswell, 2015:207).

As a consequence of the descriptive-qualitative approach, asking 'how' or 'why' questions, the group was included in the study, either as an interviewee or as part of an observation; the documents found can be data for researchers during the study.

The results of the research conducted at SKN FC Kebumen, which was sampled, were divided into four aspects, namely context, input, process, and product; the results were as follows:

### **1. Results of Context Evaluation**

#### **a. Vision and Mission**

SKN FC Kebumen has a vision and mission to lift Indonesian futsal, especially Central Java futsal, to be better and support native Central Java players to be able to become quality players, especially professional leagues, and can become a mainstay in the Indonesian Futsal National Team. As stated by the participant (W/01):

What is clear is that our vision-mission is to lift futsal, especially in Central Java, towards futsal Central Java for the better."

Several genuine Central Java players on the SKN FC Kebumen list reinforced this statement. SKN FC directly seeks to bring talented players in the Central Java area by providing a place for local Central Java players. On the vision and mission of the assistant coach, the SKN FC also has the vision to help the original players from Kebumen. Participant (W/02), as an assistant coach, said:

"If the vision is certain to develop futsal in Indonesia more advanced, continue to develop also the potential of Kebumen players to be able to play in the national and international arena, and the target must have...can have national team players, both from Kebumen and Central Java itself generally."

With the explanation above, it is concluded that the vision of SKN FC Kebumen is to advance Indonesian futsal through SKN FC by sending players from Central Java and Kebumen itself to become professional players to defend the national team.

#### **b. Purpose of the program**

As a newly formed futsal club, SKN FC's first goal is to advance Central Java and Indonesian futsal. Then the next goal is to become a champion in the Indonesian professional futsal league. As revealed by the participants (W/06):

"Goal of Champions first. Then play in the international because playing in the international must be champion first.

Best of luck to FC. "

At the beginning of the club's formation, following the league was to become a champion by equipping the team's strength with national team players. However, the goal has yet to be achieved.

### **2. Input Evaluation Results**

In preparing the team framework to face the competition, the club carried out a player recruitment program; SKN FC contacted many players from the alums of the national futsal team age group of 20 years. For the data obtained during interviews regarding player recruitment, participants (W/05 ) said:

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"Entering the SKN maybe from the beginning I was the U20 national futsal team yesterday in 2019. I played in the U20 national team there I entered the top 4 then I was invited to join the owner offered the same owner skn to play in the skn in the professional futsal league in 2020 directly in contact with Bos Seno."

While the management and the rules of the Indonesian futsal federation emphasize the coach's background and experience. As stated by the participant (W/04):

"I used to study at UNJ for my current level 1 AFC license. If from abroad or foreign coaches must be level Pro AFC while from Indonesia at least level 1 AFC."

### **3. Process Evaluation Results**

#### **a. Implementing Exercising Program**

Planning an exercise program is made like in general. The head coach makes a daily program. It is done because it prepares the ability and needs of players from SKN FC Kebumen. It was stated by the participants (W/04):

"We have a week of practice on Monday morning, Tuesday afternoon and morning. There is a Wednesday morning player off only the goalkeeper who practices afternoon training again Thursday morning we gym the next morning afternoon in the field Friday morning free but in the afternoon we exercise. On Saturday, we have a video session continues to be held with training as well or usually internal games because in this rich situation we are very worried if for example we test with an outside team."

Before creating the Lathan program, the head coach and the staff integrate the analysis of each player partly as a reference in forming a training program. In addition to physical analysis of players, the coaching team also uses HR to analyze training videos and SKN FC matches to know their game process.

From the previous question, and supported by observations made by researchers while the team was conducting exercises, it can be understood that planning a training program at SKN FC uses a tactical approach that is adjusted to the resources and time owned. Furthermore, with analysis through video, the coaches try to analyze the shortcomings of their players and map out the opponents' strengths to be faced.

#### **b. Facilities and Infrastructure**

Because the SKN FC originates from Kebumen Regency, the training facilities move around, starting from Purwokerto and Yogyakarta. Data from the field (observations and interviews) are most often used in the field in Yogyakarta. SKN FC in the Indonesian professional futsal league must be a "traveler" because Kebumen Regency does not yet have standard futsal field facilities. Participant 03, when interviewed, said that SKN FC uses the training field and is still moving around to rent:

"The first year was in Purwokerto Score, the second year in Jogokaryan Jogja continued to the third year in the planet field if in the first year of the season. The second year is also seasonal, the third year is also equally per-season. Just in the first year we have cooperation with the field, first in the score in Purwokerto we...yes cooperation, maybe a cut of the funding problem, and they asked for it, taped the logo on the shirt."

The same opinion expressed by Participant 03, Participant 01 said:

"Oh, the training ground, our TC in Jogjakarta. We're working with Planet Futsal. Jogjakarta: And so. So because we are an official club, we have a lot of training intensity so we have a special price, so at the moment we don't have our own TC place, we are still working with the second party. Planet Futsal Jogjakarta."

Regarding salaries and bonuses given to players, participants (W/06) said that salaries it is feasible and able to meet the needs: "Yes, like a pro team. Yes, everything has facilities. There is a good place to live. Good food is guaranteed. Good overall."

As for the bonus of each critical match, the participant (W/06) continued:

"Winning every bonus, winning every victory, winning every victory from the boss, that's because it's not the responsibility of the management, it's just the way the boss gives credit for the struggles of the players. Each club's love in Indonesia but different nominal because once again it is not in the contract purely from the owner."

#### **c. Funding**

The needs of professional futsal clubs in undergoing Indonesian professional futsal leagues include finance/funding, a clear organizational structure, meeting the HR requirements applied by Indonesian futsal federation regulations consisting of player requirements (number and contract), coach license certificates, and other relevant HR in professional futsal clubs.

Funding becomes an absolute necessity for a club participating in the league to undergo the competition and the professional class. Field data from Participant 01 provide information that funding with a large enough nominal is needed to participate in one season of Indonesian professional futsal league competition. The management staff is aware that this funding is the most needed factor in this factor. From the results of interviews in the field, participants (W/01) said:

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“To manage a Professional club in one season, we can spend about 5 billion, Sir. 5 billion. And so. For all, for salaries, operations, when we go home or away to various cities in Indonesia that require the cost of airplanes, tickets, hotels and so on, one season we run out of five billion.”

### 4. Product evaluation Results

Positive results were received by SKN FC Kebumen during the first professional league in Indonesia in 2020. They were able to go to the final. However, the results have not won the championship. Starting the competition season with a number of injured players, the maximum SKN FC Kebumen won the final. Following what the participants expressed (W/02), one of the maximum results, even though it has not met the target in the 2020 Indonesian professional futsal league.

“Previously this season, only because of the pandemic, finally the target was as effortless as possible. Yes. The boss wants to be a champion.”

### III. DISCUSSION

Based on the results of the evaluation study using the CIPP model on the SKN FC Kebumen futsal club coaching program with a comprehensive approach in undergoing the Indonesian professional futsal league, namely:

From the point of view of context evaluation, the club's vision, mission, and objectives have been representative with the situation and conditions of the club in running the league and are the main foundation of the club management system. The original Central Java player is still slightly different from the vision and mission of a champion Central Java club. The achievement of SKN FC players as national team players is one of the goals of the club's program, even though it has not reached the club's target of champions. This description and the results of the assessment of the success criteria show that it belongs to the category of “fair”

From the point of view of input evaluation, recruiting players and coaches based on experience and achievements with other clubs has previously become a benchmark for recruitment criteria. All those in the SKN FC coaching staff already have official certificates and licenses under the rules of the Indonesian Futsal Federation to follow the Indonesian professional futsal league. This description and the results of the assessment of the success criteria are included in the category of “good”.

In terms of process evaluation, training programs made by foreign trainers have decent facilities and infrastructure, such as having their own buses and eight-standard training but still rent fields from private parties then funding which has a very royal owner who spends his money from the description the results of the assessment are included in category of “fair”.

From the point of view of product evaluation, although it has not won first place in the Indonesian professional futsal league, SKN FC Kebumen club has experience as an Indonesian representative team for the AFF International Cup (Southeast Asian Cup); from the description of the results of the assessment are included in the “good” category.

### IV. CONCLUSION

Success criteria evaluate each CIPP variable with three categories: good, fair, and poor. With the CIPP analysis combined with a comprehensive approach, the evaluation results in terms of context include; vision and mission, the club's goals in living the league, it is included in “fair” category. In terms of input, which includes the system of recruiting players and coaches, it is included in “good” category. Regarding the process, which includes implementing training programs, provision, use, and maintenance of facilities and infrastructure, and funding, it is included in “fair” category. In terms of products, which include positive and negative results, alignment of goals with costs and achievements generated, program success, and programs that can be continued is included in “good” category.

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## Sociodemographic Factors Associated With Wife Beating in Bangladesh: Evidence from a Bangladesh Demographic and Health Survey, 2017–2018



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**ABSTRACT:** Wife beating is one of the most important global health concerns, not only in developing countries but also in developed countries. The prevalence of wife beating is more common in Bangladesh, which is a major health-related problem among reproductive-aged women. For this reason, the aim of this paper was to investigate sociodemographic factors associated with wife beating among women in Bangladesh. We used the most recent Bangladesh Demographic and Health Survey 2017–18 data. A total of 20,127 women were included in this study. Descriptive statistics and the chi-square test were used. Binary logistic regression was used to assess factors associated with wife beating among reproductive-aged women. The study's findings demonstrated that, in binary logistic regression, women's education, exposure to the media, residence, and religion were very significant predictors of violence against women. Significant correlates of violence against women were also found to include the occupation, division, size of the household, and wealth index of women. We might be able to lessen wife beating in Bangladesh by concentrating on women's education, occupation, place of residence, division, wealth index, household size, exposure to mass media, and religion.

**KEYWORDS:** Wife beating, odds ratio, binary logistic regression, Bangladesh

### INTRODUCTION

Physical, sexual, emotional, and mental abuse of women by intimate partners is one of the most prevalent health-related problems (Andarge et al., 2021; M. N. Khan & Islam, 2018). Although the frequency of its occurrences varies around the globe, it affects all socioeconomic categories. In general, young, low-income, and uneducated couples are more likely to experience it (Akmatov et al., 2008). Although it takes into account the rights of the husband and is accepted by many low- and middle-income countries, it is widely acknowledged as a social problem. Wife beating is an extended form of intimate partner violence (IPV) that hinders the attainment of gender equality and a peaceful, prosperous, and sustainable world (Gurmu & Endale, 2017). Additionally, especially in low- and middle-income nations, it is believed that men have the right to claim dominance over women and that all decisions are made without consulting them (Zegeye et al., 2021). Intimate partner violence is one of the most serious forms of domestic violence among reproductive-aged women in both developed and developing countries. It is responsible for dangerous outcomes in women's lives such as acute morbidity, gynecological problems, sexually transmitted infections, and depression. The health of women, particularly their sexual and reproductive health, is significantly affected by intimate partner violence (Sinha et al., 2012). This has a negative impact on women's efficiency, freedom, and standard of living (Semahegn et al., 2013), as well as the national economy (Lasong et al., 2020). Their rights and well-being are harmed, and it is challenging for them to engage in social, economic, religious, and cultural communities (Arefaynie et al., 2021). According to the World Health Organization, 30% of women worldwide have experienced physical and/or sexual abuse at the hands of an intimate partner (Putra et al., 2019). The prevalence of intimate partner violence was estimated at about 42% and 30% in South Asia and worldwide, respectively (Hossain et al., 2022). Getting rid of domestic abuse can benefit women, families, and society at large (Tu & Lou, 2017).

In Bangladesh, wife beating is a very prevalent and well-articulated societal problem that is seen as a serious public health issue. Despite the fact that the country's economy is expanding day by day, many women in Bangladesh are threatened with violence,

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including dowry killings, rape, sexual harassment, acid assaults, physical and emotional torture, and sex trafficking. The prevalence of wife beating is still high in Bangladesh. About 28% of women in Bangladesh suffer beatings from their intimate partner, which has a dangerous impact on their physical, emotional, and sexual health (Seidu et al., 2021). Rates of wife beating ranged from 39 to 79 percent (A. Khan, 2017), and 53 percent of rural women reported experiencing physical and sexual abuse at the hands of their intimate partners (Schuler et al., 2013). At least once in their lives, 72.6 percent of women have been victims of domestic violence committed by an intimate partner (M. Islam et al., 2021), and 49 percent of household deaths have taken place due to severe wife beatings (Rashid et al., 2014). Despite this evidence, very few studies have been conducted to analyze factors associated with women's beatings in Bangladesh. As a result, there is a lack of comprehensive knowledge regarding factors associated with women's beatings. For this reason, the specific factors linked to the wife's beating in Bangladesh need to be tested. To address this knowledge gap, an attempt has been made to explore the causes of domestic violence against Bangladeshi women committed by their husbands. This study was aimed at estimating sociodemographic factors associated with wife beating among reproductive-aged women in Bangladesh.

### DATA AND METHODOLOGY

The data for this study were taken from the most recent Bangladesh Demographic and Health Survey (BDHS) 2017–18. The survey was conducted by the National Institute of Population Research and Training (NIPORT). This was a cross-sectional study of 20,127 ever-married women of reproductive age (15–49 years). Descriptive statistics involving percentages and a 95 percent confidence interval were computed to describe the findings. The chi-square test was used to assess the primary association between wife beating and explanatory variables. Multivariate analysis using binary logistic regression was carried out to assess the relationship between wife-beating and socio-demographic factors. The odds ratio with a 95 percent confidence interval (CI) was estimated to assess the significance of associations between the outcome variable and the explanatory variables. In this study, descriptive statistics and binary logistic regression analysis are conducted using the STATA 13 version.

### RESULTS

Table 1 displays a sample of the sociodemographic characteristics of the study participants. The independent variables associated with sociodemographic characteristics were women's age, women's education, women's occupation, partner's occupation, division, place of residence, household size, wealth index, exposure to mass media, age at marriage, and religion. Around 37.0 percent of women were aged 35–49 years, and about 28.0 percent of women were younger than 25 years. The majority of women (39.62%) completed their secondary education, and about 16.0% of women had no education. Almost 50.0 percent of women were unemployed, and most of their partners (46.05%) were physical workers. About 25.0 percent of women resided in Dhaka division, and the majority (71.54%) of women lived in rural areas. More than half of women's households (64.13%) had fewer than six members. Around 41.0% of women came from the richest wealth index; the majority of the women (65.98%) exposed themselves to mass media; and almost 75.0% of women married at an early age, i.e., before 18 years. Most of the women (90.68%) followed Muslims.

**Table 1. Percentage distribution of selected characteristics, Bangladesh Demographic and Health Survey, 2017-18**

Covariates	Percentage	Confidence Interval	
		Lower	Upper
<b>Women's age</b>			
<25 years	27.92	27.16	28.68
25-34 years	35.02	34.22	35.83
35-49 years	37.06	36.28	37.85
<b>Women's education</b>			
No education	16.56	15.72	17.44
Primary	31.25	30.32	32.19
Secondary	39.62	38.59	40.65
Higher Secondary	12.57	11.8	13.39
<b>Women's occupation</b>			
Agricultural worker	13.96	12.94	15.05

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Physical worker	1.85	1.63	2.09
Service	32.4	30.69	34.16
Business	49.91	48.08	51.74
Unemployed			
<b>Partner's occupation</b>			
Agricultural worker	23.99	22.71	25.32
Physical worker	46.05	44.78	47.32
Service	5.51	5.02	6.06
Business	22.03	21.05	23.05
Others	2.41	2.15	2.71
<b>Division</b>			
Barisal	5.59	5.28	5.92
Chittagong	17.99	17.33	18.68
Dhaka	25.46	24.61	26.32
Khulna	11.61	11.17	12.06
Mymensingh	7.68	7.17	8.22
Rajshahi	13.92	13.34	14.53
Rangpur	11.83	11.27	12.4
Sylhet	5.92	5.65	6.21
<b>Place of residence</b>			
Urban	28.46	27.64	29.3
Rural	71.54	70.7	72.36
<b>Household size</b>			
<6	64.13	62.91	65.33
>=6	35.87	34.67	37.09
<b>Wealth index</b>			
Poorest	38.26	36.38	40.17
Middle	20.17	19.14	21.23
Richest	41.57	39.75	43.42
<b>Exposure to mass media</b>			
No	34.02	32.19	35.91
Yes	65.98	64.09	67.81
<b>Age at marriage</b>			
<18	75.35	74.29	76.38
>=18	24.65	23.62	25.71
<b>Religion</b>			
Muslim	90.68	88.85	92.23
Non-muslim	9.32	7.77	11.15

Table 2 displays a bivariate analysis of wife beating. A significant association between wife beating and socio-demographic covariates was found using the p-value. Women's age, women's education, women's occupation, partner's occupation, division, place of residence, household size, wealth index, exposure to mass media, age at marriage, and religion were significantly associated with wife beating. The result showed that wife beating decreased monotonically with education. Women with no formal education (26.45%) were more likely to be victims of violence by their husbands than women with a secondary or higher level of education. Violence against women in the poorest group (23.80%) is observed more than violence against women in the richest group. Wife beating was also significantly higher among women who were aged 35–49 years (21.59%), belonged to agricultural workers (23.69%), were residing in Barisal division (24.84%), were living in rural areas (21.48%), had less than six members (20.18%), were not exposed to mass media (24.54%), married early (21.27%), and practiced Islam (20.32%).



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Table 2. Bivariate association of controlled variables with selected indicators based on BDHS 2017-18

Categories	Wife-Beating	
	Yes (%)	No (%)
<b>Women's age</b>		
<25	17.77***	82.23
25-34	18.82	81.18
35-49	21.59	78.41
<b>Women's education</b>		
No education	26.45***	73.55
Primary	23.39	76.61
Secondary	17.75	82.25
Higher Secondary	8.29	91.71
<b>Women's occupation</b>		
Agricultural worker	23.69***	76.31
Physical worker	19.64	80.36
Service	5.80	94.20
Business	22.22	77.78
Unemployed	18.32	81.68
<b>Partner's occupation</b>		
Agricultural worker	22.88***	77.12
Physical worker	20.11	79.89
Service	9.70	90.30
Business	18.57	81.43
Others	19.83	80.17
<b>Division</b>		
Barisal	24.84***	75.16
Chittagong	19.86	80.14
Dhaka	18.02	81.98
Khulna	19.96	80.04
Mymensingh	17.07	82.93
Rajshahi	20.38	79.62
Rangpur	18.66	81.34
Sylhet	18.35	81.65
<b>Place of residence</b>		
Urban	16.31***	83.69
Rural	21.48	78.52
<b>Household size</b>		
<6 member	20.18***	79.82
>=6 member	18.57	81.43
<b>Wealth index</b>		
Poorest	23.80***	76.20
Middle	20.68	79.32
Richest	15.33	84.67
<b>Exposure to mass media</b>		
Yes	16.95***	83.05
No	24.54	75.46
<b>Age at marriage</b>		
<18 years	21.27***	78.73
≥18 years	14.84	85.16

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### Religion

Muslim	20.32***	79.68
Non-Muslim	12.86	87.14

**Note:** \*\*\*P ≤ 0.001 (based on Chi-square test for independence).

The results of the binary logistic regression are displayed in Table 3. Women's education, women's occupation, division, place of residence, household size, wealth index, exposure to mass media, and religion were significantly associated with wife-beating. Results suggested that education had a highly significant effect on the likelihood of justifying wife beatings. Women with higher educational qualifications had 66.0 percent lower chances of justifying wife-beating than women with no educational qualifications. Women who lived in Khulna and Chittagong divisions had 24 percent and 27 percent lower chances of justifying wife beatings than women who lived in Barisal. The place of residence was significantly associated with the wife's beating. Rural women were 1.22 times more likely to justify wife-beating compared to urban women. Women in the richest wealth quintal had 11 percent lower chances of justifying wife beatings than women who belonged to the poorest wealth quintal. Women who were exposed to mass media were 17 percent less likely to justify wife-beating than women who were not exposed to mass media. Non-Muslim women had 42 percent lower chances of justifying wife-beating than Muslim women.

**Table 3: Result of binary logistic regression model on Wife-Beating**

Categories	Wife-Beating
	Odds Ratio (OR)
<b>Women's age</b>	
<25	1.00
25-34	1.01 (0.92-1.11)
35-49	1.03 (0.92-1.14)
<b>Women's education</b>	
No education	1.00
Primary	0.86 (0.77-0.95) ***
Secondary	0.64 (0.57-0.72) ***
Higher Secondary	0.34 (0.28-0.42) ***
<b>Women's occupation</b>	
Agricultural worker	1.00
Physical worker	0.88 (0.64-1.20)
Service	0.58 (0.34-0.98) **
Business	0.89 (0.66-1.19)
Unemployed	0.86 (0.64-1.16)
<b>Partner's occupation</b>	
Agricultural worker	1.00
Physical worker	1.05 (0.96-1.17)
Service	0.88 (0.70-1.11)
Business	1.03 (0.92-1.15)
Others	0.95 (0.74-1.21)
<b>Division</b>	
Barisal	1.00
Chittagong	0.83 (0.72-0.96) **
Dhaka	0.76 (0.65-0.88) ***
Khulna	0.86 (0.74-1.00) **
Mymensingh	0.58 (0.49-0.68) ***
Rajshahi	0.78 (0.67-0.90) ***
Rangpur	0.69 (0.59-0.80) ***
Sylhet	0.68 (0.58-0.80) ***

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<b>Place of residence</b>	
Urban	1.00
Rural	1.22 (1.11-1.33) ***
<b>Household size</b>	
<6 member	1.00
≥6 member	0.92 (0.85-1.00) **
<b>Wealth index</b>	
Poorest	1.00
Middle	0.94 (0.85-1.05)
Richest	0.89 (0.80-0.99) **
<b>Exposure to mass media</b>	
No	1.00
Yes	0.83 (0.76-0.91) ***
<b>Age at marriage</b>	
<18 years	1.00
≥18 years	0.92 (0.84-1.02)
<b>Religion</b>	
Muslim	1.00
Non-Muslim	0.58 (0.50-0.68) ***

**Note:** \*\*\*P ≤ 0.001; \*\*P ≤ 0.01; \*P < 0.05

### DISCUSSION

This study tried to explain sociodemographic factors associated with wife beating among reproductive-aged women in Bangladesh. Wife beating is a serious global health problem in developing countries like Bangladesh. Older women were more likely to experience intimate partner violence than younger women. But another study showed that older women were less likely to expose violence by their husbands in Bangladesh than younger women (T. M. Islam et al., 2014). Women's education was highly significant with wife-beating. Violence against women significantly decreased as women's education levels rose. It was one of the most influential factors in eliminating violence against women. Previous studies in different countries, including Bangladesh, Turkey, and Pakistan, showed similar findings (Inal et al., 2020; Nasrullah et al., 2017; Stake et al., 2020). Women's occupational opportunities may hold up women's perceptions of wife beating. Women with a lower level of employment status were more likely to justify wife-beating than women with a higher level of employment status. Women who were involved in service occupations showed significant variations in wife beating. It is a crucial finding for this study. Regional variation was highly significant for violence against women. A number of previous studies also showed geographical variation in the prevalence of wife beating (M. N. Khan & Islam, 2018). Place of residence was one of the most influential factors in justifying women's beatings. Women residing in rural areas were more likely to justify intimate partner violence compared to women residing in urban areas. Another study conducted in Benin showed an association between intimate partner violence and place of residence (Chung-Ya et al., 2021). There was a trend towards violent altercations with increasing household size. Women living in households with fewer than six members were more likely to justify wife-beating compared to women living in households with more than or equal to six members. But another study showed that there was no convincing association between women's beatings and household size (Andersson et al., 2007). The wealth index was another element that influenced the justification of women's beatings. The richest women were less likely to justify violence against women than other groups. On the contrary, research conducted in Bangladesh revealed that the wealth index had no influence on intimate partner violence among reproductive-aged women (Stake et al., 2020). The impact of mass media was highly significant in justifying women's beatings. It can play a vital role in reducing intimate partner violence among reproductive-aged women in Bangladesh. Women who were exposed to mass media were less likely to justify women's beatings than women who were not exposed to mass media. Another study showed that one type of mass media, including TV, had a significant impact on the justification of women beating (Jesmin & Amin, 2017). Another factor, religion, was significantly associated with the justification of wife beatings. Muslim women were more likely to justify violence against women compared to women of other religions. Another study explored the fact that there was a deep association between violence against women and religion that played a vital role in influencing the justification of women's beatings (Al-Tawil, 2012).

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### CONCLUSION

Wife beating is still high in Bangladesh. It is one of the most serious global health problems, both in developed and developing countries. The study recommended that attention to women's education, women's occupation, division, place of residence, household size, wealth index, exposure to mass media, and religion might help reduce violence against women in Bangladesh.

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## Green Finance and Bank Performance: Evidence from Bangladesh



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**ABSTRACT:** The severe repercussions of the global climate catastrophe are being felt all across the world. Each industrialized and developing country must take action in response to the consequences of global climate change that endanger life on our planet. This study looks into how green finance has affected Bangladeshi private commercial banks' financial performance. For eight years, from 2014 to 2021, all private commercial banks are surveyed quarterly for secondary data. The performance of the banks is evaluated using return on assets, return on equity, net interest margin, and net non-performing loan to total loan ratios, whereas green finance is used as an independent variable. The study uses linear regression and questionnaire analysis to determine the impact of green finance on a bank's financial performance. According to the study, at a 10% significance level, green finance has a negligible positive effect on return on assets but a significant positive impact on return on equity, net interest margin, and net non-performing loans to total loan ratio. The questionnaire analysis also demonstrates green finance's significant impact on banks' performance. This study can be used as a starting point for policy discussions with practitioners, governments, decision-makers, academics, and future researchers.

**KEYWORDS:** Green Finance; Financial Performance; Banks; Regression; Questionnaire Analysis

### 1. INTRODUCTION

The importance of green finance to our long-term sustainability is enormous. Stakeholders are now aware of the significant benefits of sustainable business practices. Bangladesh Bank gave a definition of green finance in 2009. It stated that investments made by pre-approved banks and financial institutions (FIs) and recorded in accordance with the BSEC Rules of 2015 for environmentally friendly areas/targets producing fields of resource and power efficiency, renewable energy, misuse administration and treatment, climate-friendly transport, etc. are regarded as green finance. Additionally, Bangladesh Bank's green banking initiatives include effective regulatory measures, more stringent regulation of banks' and NBFIs' green banking operations, refinancing assistance for a range of green goods, sectors, projects, and initiatives, as well as the ambitions of Bangladesh Bank for environmental management. Banks can play a significant role in ensuring environmental sustainability and inclusive economic growth due to their connections to the majority of industries as a source of financing.

Private commercial banks have expressed very little spontaneous interest in adopting green finance strategies although Hossain et al. (2022), Chen & Ma (2021), Zhang (2018), Mengyao (2018), Hossain & Kalince (2014), Awino (2014), and others found that green finance significantly effect the banks' profitability. In general, bank is a corporate entity that mainly seeks profit. And, if green finance significantly effect the banks' profitability, then banks must have spontaneous participation in green financing. Julia and Kassim (2020) stated that both conventional and non conventional banks were not fully meet the requirements of green/sustainable policy. Moreover several studies on Bangladesh found mixed results. Hoque and Roy (2018), Mamun and Rana (2020), and Hossain et al. (2020) discovered a sizable positive relationship between green finance and firm performance, whereas Hoque, Masum, and Babu (2022), Cui et al. (2018), and Rajput, Arrora & Khanna (2013) found no significant correlation between green finance and firm performance. Additionally, Julia and Kassim (2016) discovered that asset utilization, return on assets, and return on deposit all had meaningful positive relationships with green financing, but return on equity did not. Thus the study's aims to find out how green finance affects banks' performance. This study distincts from other

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studies in that it evaluates banks' financial performance over a longer time period and all private commercial banks of Bangladesh are included in the study.

### 1.1 Research Significance

Green financing are crucial for steering the economy in a sustainable direction. By providing green financing, banks improve the economic and environmental performance of a nation. Additionally, lowering costs is a crucial step in improving any organization's financial performance. Green financing is increasingly important globally, particularly in developing nations like Bangladesh. According to economists' theories, financial performance and green financing are positively correlated. By participating in green finance, banks can take an active part in the renovation process for a greener economy in addition to their operational activities. Moreover, this study may serve as appropriate guidelines for bank regulators and can be used as a starting point for policy discussions with practitioners, governments, decision-makers, and future researchers.

### 1.2 Research Objective

This study aims to investigate the impact of green financing on banks' performance.

### 1.3 Research Questions

The study answers the following questions

- a) What effect does green financing have on return on asset?
- b) What effect does green financing have on return on equity?
- c) What effect does green financing have on net interest margin?
- d) What effect does green financing have on net non-performing loan to total Loans?

### 1.4 Research Hypothesis

To answer the above research questions this study use the following hypothesizes

- $H_1$  Green financing has no discernible effect on return on assets.
- $H_2$  Green financing has no discernible effect on return on equity.
- $H_3$  Green financing has no discernible effect on net interest margin.
- $H_4$  Green financing has no discernible effect on net non-performing loan to total loans.

## 2. LITERATURE REVIEW

Few pieces of research illuminate the impact of green financing on banks' financial performance in Bangladesh, whereas several pieces of research illuminate the connection between green financing and banks' profitability on other countries. Most studies found a significant positive relationship between green finance and firm's performance. Some studies also found no relationship between green financing and firm's performance, whereas others found different result for different performance measure variables.

To determine the connection between green financing and financial performance, Molina-Azorin et al. (2009) reviewed 32 literatures and revealed conflicting findings, with a positive environmental impact on financial performance being predominant. Furthermore, on the basis of information on the top 500 publicly traded companies in the world, Chen, Ngniatedema, and Li (2017) compared green initiatives, green performance, and financial performance across countries. The study discovered a positive relationship among green initiatives, green performance, and financial performance. Again, in a three-year study from 2011 to 2013, Awino (2014) investigated the connection between green banking and the financial performance of Kenyan commercial banks. The study found a significant positive relationship between financial performance and green banking initiatives using regression analysis. Hossain and Kalince (2014) investigated the connection between green banking and banks' performance. The

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study discovered a statistically significant positive relationship between green banking and banks' loan and profit after tax using regression analysis, the Granger F Test, and VAR Model. For seven years, from 2012 to 2018, Mengyao (2018) examined the effects of green credit on small and medium-sized commercial banks. Green loan and total loan were used as independent variables, whereas return on assets was used as a dependent variable. Using regression analysis, the study discovered that green credit had a favorable effect on small and medium joint-stock commercial banks. Zhang (2018) demonstrated how green credit affected commercial banks financial results from 2015 to 2017. The financial performance was gauged by return on assets, and the industrial bank's green credit was quantified by the amount of green credit. The study discovered a beneficial effect of green credit on bank financial performance using regression analysis. Wang and Chang (2022) confirmed the existence of co-integration relationships between these variables by examining the relationships between environmental performance, green finance, and green innovation in 57 developing countries from 2002 to 2016. Rahman, Hoque and Roy (2018) investigated the effects of green financing on bank profitability over a three-year period, from 2013 to 2015 in Bangladesh. Return on investment, total assets, green financing, and total financing were used to gauge the banks' performance and involvement in green financing. The study discovered that the green financing had a significant favorable impact on the banks' profitability using correlation and regression analysis. Furthermore, Mamun and Rana (2020) in their study of the relationship between green banking practices and commercial banks' profitability in Bangladesh from 2012 to 2019, used return on assets as a dependent variable and green finance as an independent variable. The study conveyed a favorable relationship between green finance and firm profitability using correlation and simple regression methods. Additionally, Hossain, et al. (2020) looked at the impact of green banking practices on the financial performance of Bangladesh's listed banks from 2011 to 2020. The study used green cost and volume of the risk management committee to measure the green banking practices, and return on asset, return on equity, and market value to measure banks' performance. Green banking practices and financial performance were found to have a positive relationship using panel regression analysis.

On the other hand, some studies found no significant relationship between green financing and firms' performance. Rajput, Arora, and Khanna (2013) conducted an empirical study over a seven-year period, from 1997 to 2013, on the impact of the environment on the financial performance in the Indian banking sector. The study discovered that there was no meaningful connection between the adoption of green banking and the bank's profitability using panel regression analysis. Furthermore, the effect of green lending on credit risk in China over a seven-year period from 2009 to 2015 was demonstrated by Cui et al. (2018). Green credit ratio was used as an independent variable, and the non-performing loan ratio (NPL ratio) was used as a dependent variable. The study also found no connection between the proportion of green loans in a bank's total loan portfolio and its non-performing loan ratio using random-effect panel regression. Additionally, Hoque, Masum, and Babu (2022) investigated the effect of green banking disclosures on the caliber of financial performance of over thirty listed banks of the Dhaka Stock Exchange over the course of four years from 2014 to 2017. Using multivariate analysis, the study found that there was no significant relationship between liquidity ratio, and debt to asset ratio and green banking spending, but green banking disclosures significantly positively impact return on assets. Additionally, from 2012 to 2014, Julia and Kassim (2016) conducted a three-year study in Bangladesh on the effects of green financing on bank profitability. Use of green finance by banks was used to measure the involvement of the bank in green financing, whereas performance was measured by return on equity, return on asset, asset utilization, and return on deposit. The study found that return on asset, asset utilizing, and return on deposit had significant positive relationships with green financing, whereas the return on equity showed no significant relationship with green financing using one way ANOVA and Pearson correlation analysis. Again, Julia and Kassim (2020) examined the green banking performance of conventional and non-conventional banks in Bangladesh. According to the study, neither bank fully complied with green/sustainable policy requirements.

### 3.0 Research Methodology

Research methodology includes data and variables, sources of data, banking sectors of Bangladesh and research design.



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### 3.1 Data and Variables

The secondary data collected from all private commercial bank for eight years from 2014 to 2021 on quarter basis. All variables and their measurement methods are shown below:

**Table 1:** Variables

Variable	Symbol	Measure
Return on Asset	ROA	Efficiency of utilizing assets to generate revenues.
Return on Equity	ROE	How effectively investor's money is being employed.
Net Interest Margin	NIM	Expansion and profitability of the bank.
Net Non-performing Loan to Total Loan	NPLNTL	The ratio demonstrates the asset quality.
Green Finance	GF	It measures the total green finance (Direct and Indirect) that ensure a better environmental outcome.

### 3.2 Sources of Data

The primary data collected through questionnaire from 350 employees of banks. Data also collected from the following secondary sources:

- Annual reports of Bangladesh Bank.
- Sustainable Finance Department, Bangladesh Bank.
- Annual reports of private commercial banks.
- Academic journals.
- Books and Newspaper.

### 3.3 Banking sector of Bangladesh

Banking sector of Bangladesh comprise of state owned, specialized, private and foreign commercial banks. There are six state-owned, three specialized, forty three private commercial and nine foreign commercial banks in Bangladesh. Banking sector can also be classified as conventional and non-convention banks. There are thirty three (33) conventional and ten (10) non-conventional banks in Bangladesh. Bangladesh Bank is the central bank in Bangladesh. Bangladesh Bank, which has the authority to do so under the Bank Company Act of 1991 and the Bangladesh Bank Order of 1972, fully controls and supervises all scheduled banks in Bangladesh. The following table represents banking sector of Bangladesh.

**Table 2:** Banks in Bangladesh

Sl. No.	Category of Bank	No.	Definition
01	State Owned Bank	06	Owned entirely or primarily by the government of Bangladesh.
02	Specialized Bank	03	Owned entirely or primarily by the government of Bangladesh and operating for specific objectives.
03	Private Commercial Bank	43	Individuals/the private entities hold majority share.
04	Foreign Commercial Bank	09	Banks incorporated in abroad.

Note: the data collected from Sustainable Finance Department, Bangladesh Bank.

### 3.4 Research Design of the Study

Chen & Ma (2021), Mamun & Rana (2020), Hossain & Kalince (2014), Rahman et al. (2018), Mengyao (2018), Zhang (2018), and Awino (2014) used regression analysis to show the impact of green finance on firms' performance. Thus, the study uses linear regression to understand the impact of the green financing on banks' financial performance. Moreover, the study also does questionnaire analysis to understand the impact.

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### 4.0 Results and Discussion

#### 4.1 Descriptive statistics and correlation analysis

Return on asset of private commercial banks has a mean value of .9167 with std. deviations of .0983, compared to the return on equity which has 11.0667 mean value with std. deviations of .5573. The range value of return on assets and return on equity are .20 and 1.70, respectively. On the other hand, net interest margin has a mean value of 3.74 with a std. deviation of .2467, compared to the lowest positive mean (.3333), and std. deviation (.33267) of net non-performing loan to total loan. The mean of green financing of private commercial banks is 84883.40, with a std. deviation of 103127.68.

**Table 3:** Statistical analysis and correlation analysis

Variables	GF	ROA	ROE	NIM	NPLNTL
GF	1				
ROA	.208	1			
ROE	.669**	.389	1		
NIM	.602*	.857*	.771*	1	
NPLNTL	.590*	.530	.672	.680	1
VIF	1.000				
Range	269706.2	0.2	1.70	.59	.90
Mean	84883.41	.9167	11.0667	3.7400	.3333
Std. Deviation	103127.68	.09832	.55737	.24674	.33267

Note: \*\*\*, \*\* and \* indicate significance at 1%, 5% and 10% levels of significance based on t-statistics

The direction and degree of link between the variables are shown by correlation (Anwaar, M. 2016). Between return on asset and net interest margin, there is the maximum significant positive correlation (85.70%), whereas there is no significant correlation (.208) between green financing and return on asset at 10% level of significance. The correlation coefficient between green financing and return on equity is .669, which means that return on equity is 66.90% significantly positively correlated with green financing at 5% level of significance. Moreover, green financing and net interest margin have a correlation coefficient of .602, indicating that net interest margin is 60.20% significantly positively linked with green financing at 10% level of significance. A significant positive association (59%) also presents between net non-performing loan to total loan and green financing. The study use one independent variable. The VIF test indicates that there is no multicollinearity issues.

#### 4.2 Regression Analysis

All data except return on assets are normally distributed because of the Sig. value of the Shapiro-Wilk Test for all variables except return on assets are greater than 0.05. After log transformation, the resulted normality test given below shows the normality of the data of return on assets.

**Table 4:** Regression output of PCB

Variables	Sig.	Regression Analysis					
	Shapiro-Wilk	Dependent Variables	Unstandardized coefficients		R square	P-value	Durbin-Watson test
			GF_Ln	Constant			
GF	.399						
ROA_In	.065	ROA	.215	.116	.620	.205	1.897
ROE	.733	ROE	.314	14.486	.813	.005	1.799
NIM	.168	NIM	.081	2.854	.707	.090	2.173
NPLNTL	.955	NPLNTL	.129	1.065	.747	.063	1.239

Note: \*\*\*, \*\* and \* indicate significance at 1%, 5% and 10% levels of significance based on t-statistics

## Green Finance and Bank Performance: Evidence from Bangladesh

The green finance of private commercial banks has a insignificant positive impact on return on asset at a 10% level of significance ( $P=.205$ ) with a coefficient value of .215, which indicates that one unit increase (decrease) in green finance will result in .314 times increase (decrease) in return on assets. The value of R-squared indicates that this model explains 62% of the variation in the response variable around its mean. Moreover, the value of the Durbin-Watson test indicates the absence of autocorrelation.

The study accepts  $H_1$  hypothesis indicates that green financing insignificantly impact the return on assets.

Green financing significantly positively impact the return on equity at a 1% level of significance ( $P=.005$ ) with a coefficient value of .314, which indicates that one unit increase (decrease) in green finance will result in .314 times increase (decrease) in return on equity. The value of R-squared is .813 indicates that this model explains 81.3% of the variation in the response variable around its mean. Moreover, the value of the Durbin-Watson test for this Model (1.897) lies between 1.5 and 2.5 indicates the absence of autocorrelation. The study concludes that the  $H_2$  hypothesis is rejected indicates green financing significantly impact the return on equity of the banks.

Likewise, The green finance has a significant positive impact on net interest margin and net non-performing loan to total loan at a 10% level of significance with a coefficient value of .081 and .129 respectively. Additionally, the regression analysis interprets that one unit increase (decrease) in green finance will result in .081 times increase (decrease) in net interest margin and .129 times increase (decrease) in net non-performing loan to total loan. The value of R-squared for net interest margin and net non-performing loan to total loan are .707 and .747 respectively. Both models explain about 75% of the variation in the response variable around its mean. Moreover, the value of the Durbin-Watson test for this Model lies between 1.5 and 2.5

indicates the absence of autocorrelation. The study rejects  $H_3$  and  $H_4$  hypothesis indicates that green financing significantly impact the net interest margin and net non-performing loan to total loan. Overall the study finds that green financing significantly impact the banks' performance of Bangladesh.

### 4.3 Questionnaire analysis

The primary data collected through questionnaire from 350 employee of banks. Ninety percent (90%) of the respondents (315) agreed that green finance impact the banks' performance, whereas the remaining ten percent (10%) respondent (35) conveyed no relation between green finance and banks' performance. the ninety percent respondents mentioned that the following points of green financing played significant role to improve the banks' performance.

#### 4.3.1 Financial and non financial support from the Government

Eighty percent (80%) of the total respondent agreed that banks doing green financing activities are getting financial and non-financial support from the government. Moreover, if the commercial banks and financial institutions can achieve a better rating from Bangladesh Bank concerning sustainable banking practices then they will get financial and advisory support from the government, which is vital to success in the competitive market.

#### 4.3.2 Electronic Banking Facilities

Seventy five percent (75%) of total respondents agreed that electronic banking facilitates banking services using electronic equipment, such as online banking, ATM and debit card services, phone banking, SMS banking, electronic alert, mobile banking, fund transfer services and point of sales banking. Due to the electronic banking innovation, now all clients can access banking services from anywhere around the country. ATM and Fast Track reduce time, energy, paper and money cost for both the customer and the banks. Similarly, plastic money, POS, Rocket, and mobile banking are also the examples of green banking facilities provided by commercial banks. Due to these green banking facilities, the number of customers is increased significantly. Electronic banking facilities also created immense goodwill and expand the market. Moreover, the government not only provides permission and guideline for doing the banking through the ATM, Fast Track and POS but also helps the bank to ensure the security on online banking services for both parties (customer and banker).

## **Green Finance and Bank Performance: Evidence from Bangladesh**

### **4.3.3 Solar power based Branch, ATMs and Fast Tracks**

Only thirty five percent (35%) conveyed that solar power based branch, ATMs and Fast Tracks improve the banks' performance. There is no constant reliable electricity in some Bangladesh's rural areas, where solar-powered ATMs and Fast Track cab provide limited banking services. Additionally, it enables the bank to continue offering its clients cutting-edge banking services.

### **4.3.4 Building positive image and attract young customer**

Seventy eight percent (78%) of all respondents agreed that green financing build positive image of the company and attract new customers. The involvement in the green activities of the banks attracts young entrepreneurs, businessmen and depositors to do their business and personal transactions with that particular commercial bank. Additionally, green finance facilitates financial institutions with an opportunity to increase their market share, profits, and customer loyalty through new products, employee satisfaction and retention. Moreover green finance enhance brand image, positive media attention, improved operating licenses from governments, and relationships and partnerships with external sustainable stakeholders.

### **4.3.5 Publish report on non-performing loans and carbon emissions**

Sixty percent (60%) of the respondents agreed that publishing report on non-performing loans for environmental reasons and carbon emissions helps in improving banks' performance. As a proxy measure to estimate the financial effects of environmental risks, Bangladesh Bank also required banks and financial institutions to publish an annual list of non-performing loans for environmental reasons. This enables the bank's policymakers to make smart choices that improve the banks' financial performance and profitability. Commercial banks are also required to disclose their carbon emissions. If commercial banks disclose their carbon emissions, market participants will have access to higher levels of quantitative and qualitative information. All of the aforementioned activities were carried out by banks as green financing initiatives to increase their profitability.

### **4.3.6 Green finance helps firm to deal with pandemic**

Eighty five percent (85%) of total respondents agreed that businesses that have better access to green and social finance are better able to withstand the COVID-19 pandemic than other businesses. Data from 60 nations covering all of the major economies in the world support this evidence. As opposed to traditional banking, banks that operate electronic banking were able to offer banking services to their clients during the pandemic.

### **4.3.7 Others**

Ten percent (10%) of the respondents agreed that businesses were able to issue new bonds to finance their operations if they involved in green activities. Due to their involvement in green finance, banks have been given permission by the Bangladesh Securities and Exchange Commission (BSEC) to issue an unsecured non-convertible subordinated bond.

On the other hand ten percent (10%) of total respondents agreed that green finance have no influence in improving banks' financial performance. Seven percent (7%) of the total respondents believe that green finance is a new concept in our country. It will take time for green finance to exert significant influence on banks' performance. About four (4%) of total respondents believe that illiteracy of the bankers and illiteracy of the customers are also responsible for no influence of green finance on banks' performance.

## **5. CONCLUSION**

By providing green finance and launching green costs in the community's various sectors, green banking practice helps to improve the environment and the economy. It also plays a crucial role in improving an organization's financial performance by reducing costs. Green financing is increasingly important on a global scale, particularly in developing nations like Bangladesh. This study examines, using a sample of all private commercial banks, the effects of green finance on bank profitability over the course of eight years on a quarter basis, from 2014 to 2021. In order to perform linear regression, this study used one independent variable (green financing) and four dependent variables (return on assets, return on equity, net interest margin, and net non-performing loan to total loan ratio). Overall, the study finds that green financing significantly impact the firms' performance. Furthermore, the research supports the hypothesis that green financing has a negligible impact on asset returns. But at a

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1% level of significance, green financing has a significant positive impact on return on equity, and at a 10% level of significance, it has a significant positive impact on net interest margin and net non-performing loan to total loan. The absence of autocorrelation is indicated by all models' Durbin-Watson test values, which range from 1.5 to 2.5. The study's overall conclusion is that Bangladesh's banks' performance is significantly impacted by green financing. Through creative financial mechanisms and by encouraging investments in projects with obvious and sustainable externalities, green finance foretells the financial industry's impending collapse. The study's findings may serve as an appropriate direction for bank regulators as they make decisions about environmental concerns and contribute to society. Additionally, this study can be used as a starting point for policy discussions with practitioners, governments, decision-makers, and future researchers.

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## Effect of Marketing Strategies on Post-Harvest Loss of Fruits in Osun State, Nigeria



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**ABSTRACT:** Fruits are essential part of human diets but are highly perishable, and the post-harvest loss is on the rise in Nigeria, with consequent food insecurity. To achieve zero hunger (SDG II) and responsible consumption and production (SDG XII), a lot needs to be done to reduce the menace of post-harvest loss. One of such is the adoption of proper marketing strategies by fruit farmers and marketers. The study assessed the effect of various marketing strategies adopted by fruit farmers and marketers on post-harvest loss. Multistage sampling procedure was used to select 120 farmers and 60 marketers for this study. Data were collected through structured interview schedule.

Farmers had; mean income of ₦236,333±90,320.93, average fruit farm size of 1.51±0.58 hectares, while marketers had mean income of ₦497,200±266561.07, with some (48.4%) of them belonging to market association. Respondents had very little access to extension services, as their main sources of information were; fellow farmers marketers ( $\bar{x}$  = 0.81 for farmers and  $\bar{x}$  = 0.37 for marketers) and friends, families, Neighbours ( $\bar{x}$  = 0.62 for farmers and  $\bar{x}$  = 0.95 for marketers). Majority of the farmers (53.3%) and marketers (61.7%) recorded low fruit loss, and selling fruits by major roads ( $\bar{x}$  = 1.82) and selling on market days ( $\bar{x}$  = 1.82) were found to be very effective amongst fruit farmers, while Hawking ( $\bar{x}$  = 1.95) and Peeling and cutting of fruits ( $\bar{x}$  = 1.95) were the effective strategies among marketers. Effectiveness of marketing strategies ( $r = 0.97$ ,  $r = 0.55$ ,  $p < 0.05$ ) was significantly related to level of postharvest loss of farmers and marketers.

The study concluded that the respondents made low income from fruits sales, they both used various marketing strategies thus, albeit, conventional ones, and recorded low level of fruit post-harvest loss. It is recommended that, extension workers should be empowered to train fruit farmers and marketers regularly on improved marketing strategies and value addition. Also, cottage fruit processing firms should be established across the federation to further reduce level of postharvest loss and achieve Sustainable Development Goals II & XII.

**KEY WORDS:** Post-harvest, Post-harvest Loss, Marketing strategies, Perishability of fruits, Effectiveness

### 1. INTRODUCTION

#### 1.1 Background

Fruits form an important feature of Nigerians' diet that a traditional meal without it is usually assumed to be incomplete and they form part of meals at many traditional ceremonies all over the country (Agbarevo and Obinne, 2010). Fruits are known to be high in vitamins and essential minerals and eating adequate quantity and good quality of fruits gives lots of benefits to the body, from lowering blood pressure, to reducing risk of heart disease and prevention of some types of cancer. A wide variety of fruits are produced in Nigeria's diverse agro-ecological zones, which ranges from humid in the south, to sub-humid in the middle belt and semi-arid/arid in the north. Some of these fruits include; bananas, plantain, pineapples, Mangoes, Cashew, Oranges, etc.

Fresh fruits are inherently more liable to deterioration under tropical conditions which is usually characterized by high ambient temperatures and humidity and high incidence of pests and diseases. This is a big problem in a country like Nigeria and results in lots of wastages and post-harvest losses. The loss affects farmers' income and ultimately negatively affects food production and food security in the country. Busari, Idri-Adeniyi and Lawal (2015) reported that post-harvest losses of fruits are extremely high in Nigeria (30-50%). According to the authors, the situation is exacerbated by poor marketing, distribution (transportation),

## Effect of Marketing Strategies on Post-Harvest Loss of Fruits in Osun State, Nigeria

processing/packaging and storage facilities. A closer look at agriculture in Nigeria will reveal that Nigerian agriculture is still plagued with use of crude tools and implements, illiteracy, poor technical knowhow, inadequate and inefficient marketing. Similarly, other issues like; mechanical damage to produce as a result of impact bruising, compression and vibration during transportation, and poor transport conditions, including bad roads cause post-harvest loss. All these account for large proportion of post-harvest losses of fruits experienced in Nigeria. Marketing strategy refers to a business's overall game plan for reaching prospective consumers and turning them into customers of their products and services (Barone, 2022). It involves any process employed to create and render value through products or services, to a consumer, with the goal of making profit. Marketing strategies involve any approach which a producer or marketer can use to keep business going and this includes everything the business owner does to sell their products. In the context of this study, marketing strategies are those methods adopted by fruit farmers and marketers to sell fruits to consumers. Agricultural marketing, rather than production has great potential to drive the agricultural sector of Nigeria, if adequately looked into by governments at all levels, policy makers and all other stakeholders in the sector. Post-harvest loss can be described as the degradation of quality and quantity of a farm produce between the time of harvest and consumption. A report by FAO noted that the rate of fruit loss at post-harvest stages in some African countries is estimated at 50 percent (FAO, 2011). This shows that many of the existing marketing strategies being used for fruits are highly inefficient. Great losses are still recorded on daily basis across the country. The inefficiency of the marketing strategies may be in terms of: time taken before fruits are sold out, the extra cost incurred on the produce from harvest to point of sale; the state of freshness of the produce at the point of sale and the prices they attract during sales. Hence, there is a need for farmers and marketers to improve on the conventional marketing strategies and adopt new marketing strategies to reduce post-harvest loss. There is therefore need to investigate the effectiveness of these marketing strategies in reducing post-harvest loss.

### 1.2 Purpose of the study

The main objective of the study was to examine the effectiveness of different marketing strategies on post-harvest loss of fruits in Osun state, Nigeria. This is important as major researches on PHL have focused on the relationship between post-harvest handling, transportation, storage, etc. on PHL, and not many have considered the marketing strategies employed. The specific objectives were to: investigate the enterprise characteristics of fruit farmers and marketers in Osun State.

- i. identify respondents source of information on the marketing strategies
- ii. determine the effectiveness of marketing strategies used by respondents in the study area.
- iii. determine the level of post-harvest loss of fruits incurred in the study area.

### 1.3 Hypotheses of the study

HO1: There is no significant relationship between the effect of the marketing strategies and the level of post-harvest loss of fruits.

## 2. METHODOLOGY

The study was carried out in Osun state, Nigeria. The State is located in the rain forest zone of Southwestern Nigeria. It covers an area of 14,875 square kilometers and lies between latitude 70 30' 0" N and longitude 40 30' 0" E. The State is made up of 30 Local Government Areas (LGAs), with a population of 3,432,535 (2006, population census). A large majority of the people of Osun State engage in agriculture and produce food and cash crops like maize, cassava, yam, pepper, tomato, vegetables, oil palm, cocoa, cola nut, etc. for domestic consumption, as inputs for agro allied industries and for export.

The population of the study includes all fruits farmers and marketers in Osun state (using orange, pineapple, water melon and banana as case study). A multistage sampling procedure was used to select respondents. For farmers; the first stage involved randomly selecting 4 Local Governments Areas (LGAs) from each of the 3 federal senatorial districts of the State. Two rural communities were purposively selected from each of the LGAs based on their farming involvement fruit cultivation, in the second stage, making 12 communities. The third stage involved another purposive selection of ten (10) fruits farmers per community because of their involvement in fruit farming. Hence, a total of 120 farmers were selected. While for fruit marketers; 12 LGAs headquarters with large population were purposively selected in the first stage and the second stage involved random selection of 5 fruit marketers from each of the towns, to give 60 marketers.

Information from the respondents were elicited with the aid of interview schedules validated by experts in the field of agricultural extension, and contained both open and close-ended questions. To identify the sources of information on marketing strategies, respondents were provided with a list of various information sources to pick from the one applied to them. This was measured on a



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three-point scale of often (2), occasional (1) and never (0). The percentage score of the sources was computed. The effectiveness of the marketing strategies was determined by using the Likert type scale of very effective = 2, Effective = 1 and not effective = 0. The values obtained were added up and divided by three to get a mean value of 1, which was used to rank the strategies according to their effectiveness for reducing PHL amongst the respondents.

In determining the level of Post-Harvest Loss, the mean value of the PHL recorded by farmers and marketers were computed, using the formula;

For farmers; Loss (post-harvest) =  $Q_p - (Q_s + Q_c + Q_g)$

For marketers; Loss (post-harvest) =  $Q_b - (Q_s + Q_c + Q_g)$

And converted to percentage thus; Percentage loss (post-harvest) =  $\frac{Q_L}{Q_{b/p}} * 100$

Where,  $Q_p$  = quantity produced,  $Q_b$  = quantity bought,  $Q_s$  = quantity sold,  
 $Q_c$  = quantity consumed,  $Q_g$  = quantity given out  
 $Q_L$  = quantity lost,  $Q_{b/p}$  = quantity produced or quantity bought

The mean values were then used to categorise the levels of PHL into high and low. Data collected were subjected to both descriptive and inferential statistics.

The descriptive statistics include frequencies, percentages and means. The inferential statistics adopted for this study included Pearson Product Moment Correlation Coefficient (PPMC), t-test and Multiple regression analysis. The hypotheses were tested for significance at 0.05 level. The independent variables for the multiple regression analysis used to determine the effect of marketing strategies on post-harvest loss included the different strategies listed below, while the dependent variable was the level of PHL.

Multiple regression function used is expressed thus;

$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{15}, X_{16}, X_{17}, et)$

Where, Y is the level of postharvest loss of fruits.  $X_1$  = selling before harvest,

$X_2$  = selling at farm market,  $X_3$  = selling on market days,  $X_4$  = selling by major roads,

$X_5$  = peeling and cutting of fruits,  $X_6$  = hawking of fruits,

$X_7$  = selling on farm daily,

$X_8$  = selling to friends and family,  $X_9$  = Selling to malls,

$X_{10}$  = Selling to eateries,  $X_{11}$  = Selling to hospitals,  $X_{12}$  = Selling to schools,  $X_{13}$  = Making fruit salad,

$X_{14}$  = Processing fruit juice,

$X_{15}$  = Selling to food processing industries,  $X_{16}$  = Online marketing,

$X_{17}$  = Exporting

et represents the stochastic error term

### 3. RESULTS AND DISCUSSIONS

#### 3.1 Enterprise characteristics of the respondents

The result in Table 1 shows the distribution of the respondents according to their enterprise characteristics. The mean farm size and fruit farm size of the fruit farmers were 10 and 4 acres respectively; also the mean years of farming and marketing experience of the respondents were 33 and 16 years respectively, with a large majority (27.5%) of farmers having 31-40 years of experience. This result is in tandem with Muhammad, Hionu and Olayemi (2012), who reported that 30% of farmers in fruits and vegetables in Garun Mallam LGA of Kano state, Nigeria have 31-40 years of experience the farmers. This proves that the fruit farmers have good fruits farming experience, and as such, they would have developed and learnt various methods of reducing PHL.

The result further reveals that more marketers (48.4%) belong to fruit marketers' association than farmers (6.7%) belong to farmers' association. This implies that it is easier to engage marketers in trainings related to PHL than farmers. The result also shows that fruit marketers made more money annually with average income of ₦497,200.00 as against ₦236,333.00 made by the farmers annually. These are meager amounts to earn and wouldn't be able to sustain a normal family size in the country. The result however, agrees with Ladapo (2010), who reported that plantain wholesalers make more income than farmers in South west Nigeria.

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Table 1: Distribution of Respondents According to Their Enterprise Characteristics

Enterprise characteristics	Fruit Farmers			Fruit Markers		
	freq	%	Mean	freq	%	Mean
<b>Total Farm size</b>						
1-7	51	42.5		-	-	
8-14	42	35.0		-	-	
15-21	22	18.3	9.94 ±5.91	-	-	
22-28	4	3.3		-	-	
> 28	1	0.8		-	-	
<b>Fruit farm size</b>						
0.1-3	62	51.7		-	-	
04-Jul	49	40.8		-	-	
08-Nov	7	5.8	3.81± 2.58	-	-	
Dec-15	1	0.8		-	-	
> 15	1	0.8		-	-	
<b>Farming/market experience</b>						
<11	18	15		27	45.0	
11-20	19	15.8		19	31.7	
21-30	19	15.8	32.73±18.36	9	15.0	15.53±13.04
31-40	33	27.5		2	3.3	
41-50	13	10.8		1	1.7	
> 50	18	15		2	3.3	
<b>Farmers/market association</b>						
Non member	112	93.3		31	51.7	
Member	8	6.7		29	8.4	
<b>Fruit annual income</b>						
100000-200000	64	53.3		2	3.3	
200001-300000	38	31.7	236,333±90,32	10	16.7	497,200±266,561
300001-400000	11	9.2		16	26.7	
400001-500000	7	5.8		15	25.0	
> 500000	0	0		17	28.3	

Source: Field Survey, 2018

### 3.2 Sources of information about marketing strategies

Table 2 below shows that farmers got information on marketing strategies mostly through their fellow farmers ( $\bar{x} = 0.81$ ), friends, families, Neighbours ( $\bar{x} = 0.62$ ) and through farmers corporative ( $\bar{x} = 0.24$ ) which rank 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> respectively. This implies that information about how to market their products mainly comes from the interactions with people within their communities, which means they have very little access to information from outside the community which may include innovations on improved seeds, methods of packaging and better marketing strategies. Information from Extension agents ( $\bar{x} = 0.12$ ) was ranked 5<sup>th</sup>. Extension agents have the responsibility of informing farmers about innovations and new developments which include improved market.

Table 2 also reveals result for sources of information on fruit marketing strategies by marketers. Friends, family members, neighbours ( $\bar{x} = 0.95$ ) were the first source of marketing information available to fruit marketers. Fellow marketers ( $\bar{x} = 0.37$ ) and

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market corporative/association ( $\bar{x}=0.20$ ) were the 2<sup>nd</sup>, and 3<sup>rd</sup> marketing information sources respectively. This indicates that fruit marketers also got information from their circle and therefore are not exposed to up to date relevant information on marketing strategies. This may hamper their sales and increase fruit loss.

This result agrees Akinagbe and Ipinmoye (2022) with who reported that a large majority of farmers have not had contact with an extension agent. This will have severe impacts on the level of PHL incurred by respondents

**Table 2: Distribution of Farmers and Marketers According to Sources of Information on Fruit Marketing**

Marketing strategy	Oft	O	N	$\mu$	R	Oft	O	N	$\mu$	R	
<b>Farmer (n=120)</b>						<b>Marketers (n=60)</b>					
Radio	0%	22.5%	77.5%	0.23	4 <sup>th</sup>	0%	16.7%	83.3%	0.17	4 <sup>th</sup>	
Television	0%	5.0%	95%	0.05	6 <sup>th</sup>	0%	1.7%	98.3%	0.02	3 <sup>rd</sup>	
Fellow farmers/marketer	21.7%	37.5%	40.8%	0.81	1 <sup>st</sup>	5.0%	26.7%	68.3%	0.37	2 <sup>nd</sup>	
Cooperative	6.7	10.8%	82.5%	0.24	3 <sup>rd</sup>	3.3%	13.3%	83.3%	0.20	3 <sup>rd</sup>	
Extension Agents	0%	11.7%	88.3%	0.12	5 <sup>th</sup>	0%	0%	0%	0	-	
Research Institutions	0%	0%	100%	0	-	0%	0%	100%	0	-	
Newspaper/Magazine	0%	0.8%	99.2%	0.02	9 <sup>th</sup>	0%	0%	100%	0	.h	
Friends & Families	5.8%	50.8%	43.3%	0.62	2 <sup>nd</sup>	21.7	38.3	26.7%	0.95	1 <sup>st</sup>	
Mobile phones	0.8%	3.3%	95.8%	0.05	6 <sup>th</sup>	0%	0%	100%	0	-	
Internet	0.8%	2.5%	96.7%	0.04	8 <sup>th</sup>	0%	1.7%	98.3%	0.02	5 <sup>th</sup>	

Source: Field Survey, 2018

\* Multiple responses

### 3.3 Effectiveness of the marketing strategies

Table 3 reveals the effectiveness of marketing strategies used by the respondents. Among the marketing strategies used, selling fruits by major roads ( $\bar{x} = 1.82$ ), selling on market days ( $\bar{x} = 1.82$ ), selling of fruits before harvest ( $\bar{x} = 1.80$ ) and selling on farm daily ( $\bar{x} = 1.76$ ) were found to be effective marketing strategies amongst fruit farmers; while hawking ( $\bar{x} = 1.95$ ) and peeling and cutting of fruits ( $\bar{x} = 1.95$ ), Selling by major roads ( $\bar{x} = 1.75$ ), selling of fruits in stalls & malls ( $\bar{x} = 1.73$ ) and selling on market days ( $\bar{x} = 1.68$ ) were the effective strategies among marketers. This indicates that only the conventional marketing strategies were seen as more effective by the farmers. It is therefore necessary to encourage farmers to try new methods of marketing, so that they can identify the difference in loss reduction by the various methods.

**Table 3: Distribution of Respondents Based on the Effectiveness of Fruits Marketing Strategies (%)**

Marketing strategy	VE	E	NE	$\mu$	R	VE	E	NE	$\mu$	R
<b>Farmer (n=120)</b>						<b>Marketers (n=60)</b>				
Selling on market days	80.8	19.2	0	1.81	2 <sup>nd</sup>	70.0	28.3	1.7	1.68	5 <sup>th</sup>
Selling by major roads	81.7	18.3	0	1.82	1 <sup>st</sup>	76.7	21.7	1.7	1.75	3 <sup>rd</sup>
Peeling and cutting offruits	43.3	56.7	0	1.43	7 <sup>th</sup>	95.0	5.0	0	1.95	1 <sup>st</sup>

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Hawking	46.7	53.3	0	1.47	6 <sup>th</sup>	95.0	5.0	0	1.95	1 <sup>st</sup>
Selling to malls	22.5	72.5	5.0	1.17	11 <sup>th</sup>	15.0	80.0	5.0	1.10	14 <sup>th</sup>
Selling to eateries	25.0	70.8	4.2	1.21	10 <sup>th</sup>	30.0	66.7	3.3	1.27	10 <sup>th</sup>
Selling to hospitals	17.5	75.0	7.5	1.10	13 <sup>th</sup>	30.0	63.3	6.7	1.23	11 <sup>th</sup>
Selling to schools	42.2	53.3	4.2	1.38	8 <sup>th</sup>	56.7	38.3	5.0	1.52	7 <sup>th</sup>
Making fruits salad	32.5	60.0	7.5	1.25	9 <sup>th</sup>	46.7	50.0	3.3	1.43	8 <sup>th</sup>
Making fruit juice	15.0	76.7	8.3	1.07	14 <sup>th</sup>	11.7	83.3	5.0	1.07	14 <sup>th</sup>
Selling to food processing industries	81.7	17.5	0.8	1.81	2 <sup>nd</sup>	41.7	58.3	0	1.42	9 <sup>th</sup>
Online marketing	32.5	55.8	11.7	1.21	10 <sup>th</sup>	40.0	38.3	21.7	1.18	12 <sup>th</sup>
Exporting	83.3	13.3	3.3	1.80	3 <sup>rd</sup>	70.0	26.7	3.3	1.67	6 <sup>th</sup>
Selling of fruits before harvest	82.5	15.0	2.5	1.80	3 <sup>rd</sup>	-	-	-	-	-
Selling at farmers market	51.7	47.5	0.8	1.51	5 <sup>th</sup>	-	-	-	-	-
Selling on farm daily	5.8	24.2	0	1.76	4 <sup>th</sup>	-	-	-	-	-
Selling to friends and family	19.2	73.3	7.5	1.12	12 <sup>th</sup>	-	-	-	-	-
Home delivery	-	-	-	-	-	33.3	46.7	20.0	1.13	13 <sup>th</sup>
Selling in fruits stalls	-	-	-	-	-	73.3	26.7	0	1.73	4 <sup>th</sup>

Source: Field Survey, 2018

\*Multiple responses VE = Very effective E = effective NE = not effective R = Rank

### 3.4 Level of post-harvest loss of respondents

Table 4 revealed that, 40 percent of the fruit farmers recorded loss less than 100 kg, while only 2.5 percent had losses above 500 kg. Some (36.7%) of the fruit marketers recorded fruit loss between 20.0 and 30 kilograms, and only 3.3 percent of the fruit marketers had more than 50 kg loss. The mean loss of fruit farmers and marketers in kg was 163.2 kg and 26.74 kg respectively. The result also shows that the level of PHL incurred by farmers (53.3%) and marketers (61.7%) in the study area was low. The result is in agreement with Adebooye and Farinde (2015), who estimated the postharvest loss of fruits and leafy vegetables between 20 and 40%. However, this finding might also be as a result of the inability of respondents to adequately quantify their losses, similar to Porata, Licgter, Terry, Harker and Buzby (2018)'s assertion that, consumer surveys in the United Kingdom indicated that majority of consumers are not conscious of the amounts of food they waste.

Table 4 below also shows the percentage loss of fruits incurred by respondents. The result also reveals that majority (61.7%) of fruit farmers and more than half (53.3%) of fruit marketers recorded low percentage of fruit loss. The result is also similar to the findings of Yigzaw *et al* (2016), who reported that the postharvest loss of pineapple, sweet orange, and guava were below the overall average loss in Ethiopia. This implies that fruit respondents were either able to sell large part of their produce/product or were able to preserve them for longer period, despite the challenges associated with post-harvest handling. Despite this, it is still very important to bring the loss to a barest minimum.

Invariably, percentage loss amongst fruit marketers is a bit higher than that of farmers, this may be because farmers get to sell their produce in bulk and faster (cheaper) unlike marketers who intent to make some margin on sales and wouldn't sell unless the price is good.

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**Table 4: Distribution of Respondents by Level of Post-Harvest Loss Incurred**

Loss incurred (kg)	Freq	%	Loss incurred (kg)	Freq	%
<b>Farmers</b>			<b>Marketers</b>		
<b>All</b>					
<100	48	40.0	<10	1	1.7
100.01-200	28	23.3	10-20	17	28.3
200.01-300	29	24.2	20.01-30	22	36.7
300.01-400	7	5.8	30.01-40	13	21.7
400.01-500	5	4.2	40.01-50	5	8.3
>500	3	2.5	>50	2	3.3
Mean	163.21±23.90		26.7±11.0		
<163.1812	64	53.3	<26.7378	37	61.7
>163.1812	56	46.7	>26.7378	23	38.3
<b>Loss incurred in percentage</b>					
5.0-10.0	73	60.8		8	13.3
10.1-15.0	37	30.8		38	63.3
15.1-20.0	5	4.2		14	23.4
>20.0	5	4.2		0	0
<b>Level</b>					
Low (< mean)	74	61.7		32	53.3
High (> mean)	46	38.3		28	46.7
Minimum	4.30			5.68	
Maximum	23.69			19.16	
Mean	9.6671			12.8955	
Std Dev.	3.16483			3.08992	

Source: Field Survey, 2018

### 3.5 Hypothesis testing

Table 5 reveals the relationship between effectiveness of marketing strategies and level of post-harvest loss of fruits (PPMC). The effectiveness of marketing strategies ( $r = 0.97, p < 0.05$ ) was significantly related to level of post-harvest loss of farmers. Similarly, there was significant relationship between effectiveness of marketing strategies ( $r = 0.55, p < 0.05$ ) and level of post-harvest loss of fruits by marketers. The result means that the effectiveness of marketing strategies adopted by the respondents had a direct impact on reducing post-harvest loss.

**Table 5: Relationship between Perceived Effectiveness of Marketing Strategies and Post-Harvest Loss**

Variables	r-value	p-value	Decision
Effectiveness of the marketing strategies used by farmers against level PHL	0.97	0.004	Significant
Effectiveness of the marketing strategies used by marketers against level PHL	0.55	0.08	Significant

Source: Field Survey, 2018

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### 3.6 Effect of marketing strategies on post-harvest loss

Table 7 and 8 below shows multiple regression analysis of the effect which various marketing strategies had on post-harvest loss incurred by farmers and marketers. The Marketing strategies used by farmers which had effect on post-harvest loss were, selling on market days (0.015), hawking of fruits (0.057), selling on farm daily (0.024) and online marketing (0.074), while hawking of fruits (0.038), exporting of fruits (0.099) and home delivery (0.083) for fruit marketers. This implies that these marketing strategies best helped farmers and marketers in the study area reduce fruit loss when they are used. Invariably, hawking of fruits, online marketing, exporting, home delivery selling on farm daily and on market days were the strategies that sold more fruits, hence, caused more fruit loss reduction. Farmers and marketers should therefore be encouraged to make use of these strategies and trained on improved marketing strategies in order to reduce fruit loss and make more income.

The  $R^2$  values for farmers (0.17) and marketers (0.23) means that 17% and 23% of the variability in the level of post-harvest loss is explained by the perceived effectiveness of marketing strategies by farmers and marketers respectively.

**Table 7:** Multiple Regression Analysis of the Effect of Marketing Strategies of Fruit Farmers on Post-Harvest Losses

Marketing strategies	Unstandardised Coefficient		Standard Coefficient	t	Sig
	B	Std. Error	Beta		
Constant	-94.022	112.594		-0.835	0.406
Selling before harvest	4.190	26.681	0.016	0.157	0.876
Selling at farm market	-42.554	26.900	-0.178	-1.582	0.117
Selling on market days	83.880	33.912	0.268	2.473	0.015*
Selling by major roads	7.227	35.049	0.023	0.206	0.837
Peeling and cutting of fruits	44.790	30.318	0.180	1.477	0.143
Hawking of fruits	-56.842	29.515	-0.230	-1.926	0.057*
Selling on farm daily	73.248	31.980	0.254	2.290	0.024*
Selling to friends and family	35.342	29.041	0.144	1.217	0.226
Selling to malls	-19.771	41.075	-0.079	-0.481	0.631
Selling to eateries	-45.167	37.308	-0.182	-1.211	0.229
Selling to hospitals	59.385	44.759	0.236	1.327	0.188
Selling to schools	24.694	29.927	0.113	0.825	0.411
Making fruit salad	-10.063	35.485	-0.047	-0.284	0.777
Processing fruit juice	-34.561	50.712	-0.134	-0.682	0.497
Selling to processing industries	8.491	35.808	0.029	0.237	0.813
Online marketing	-44.654	24.738	-.228	-1.805	0.074*
Exporting	36.840	28.060	0.142	1.313	0.192

#### ANOVA<sup>a</sup>

Model	Sum of squares	df	Mean square	Sig.
Regression	312128.660	17	18360.509	0.251 <sup>b</sup>
Residual	1514654.314	102	14849.552	
Total	1826782.974	119		

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**Table 8:** Multiple Regression Analysis of the Effect of Marketing Strategies of Fruit Marketerson Post-Harvest Losses

Marketing strategies	Unstandardised		Standard	t	Sig.
	Coefficient		Coefficient		
	B	Std. Error	Beta		
Constant	6.075	5.095		1.192	0.240
Selling of fruits in stalls	-0.501	1.523	-0.072	-.329	0.744
Selling on market days	0.138	1.999	0.022	0.69	0.945
Hawking of fruits	6.848	3.204	0.487	2.137	0.038*
Peeling and cutting of fruits	-3.368	3.342	-0.240	-	0.319
				1.008	
Selling by major roads	1.589	1.473	0.244	1.079	0.287
Selling to Malls	0.242	1.535	0.034	0.158	0.875
Selling to Hotels and Eateries	-0.622	1.541	-0.104	-	0.689
				0.403	
Selling at Hospitals	-0.033	1.583	-0.006	-	0.983
				0.021	
Selling at Schools	-1.078	1.112	-0.208	-	0.338
				0.969	
Making fruits salad	0.110	1.153	0.020	0.095	0.924
Making fruit juice	0.811	1.473	0.107	0.551	0.585
Selling to food processing industries	0.284	1.034	0.046	0.274	0.785
Online marketing	-0.259	1.121	-0.064	-.231	0.819
Exporting	-1.836	1.089	-0.322	-	0.099*
				1.686	
Home delivery	1.791	1.011	0.420	1.773	0.083*

\* = Significant variables

Source: Field Survey, 2018

### ANOVA<sup>a</sup>

Model	Sum of squares	Df	Mean square	Sig.
Regression	134.762	15	8.984	0.547 <sup>b</sup>
Residual Total	428.547	44	9.740	
	563.309	59		

## 4. CONCLUSION AND RECOMMENDATION

The study concluded that, average annual income of fruit farmers and marketers was little and respondents were not exposed to relevant sources of information on improved marketing strategies. The level of post-harvest loss experienced by both farmers and marketers was low, however, efforts should be made to lower the level of PHL. It is also concluded that there was a significant relationship between the effectiveness of marketing strategies and the level of post-harvest loss of fruits, and further concluded that selling on market days, hawking of fruits, selling on farm daily and online marketing were found to have effect on post-harvest loss incurred by fruit farmers while hawking of fruits, exporting of fruits and home delivery had effect on post-harvest loss of fruit marketers.

Based on the findings of this study, it is recommended that; Extension service in Osun state and Nigeria in general should be revamped, so as to allow employment of qualified extension workers and adequate provision of needed resources, which will lead to better

## Effect of Marketing Strategies on Post-Harvest Loss of Fruits in Osun State, Nigeria

service delivery that will be of benefit in empowering relevant stakeholders about curtailing losses. Individuals, corporate bodies and government at various levels should be encouraged to establish cottage fruits processing factories to ensure fruits are converted to various forms which will reduce PHL. Also, trainings on value addition should also be introduced to farmers and marketers, where new and improved marketing strategies will be identified and learnt. These will significantly reduce PHL and put the state and nation on the track to achieving; no poverty, zero hunger and good health & well-being for all.

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## Conceptualizing Indigenous Identity: Negotiation of Internal and External Factors for Indigenization



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**ABSTRACT:** This paper discussed the concept of the Indigenous Peoples based on the cultural concept of ethnolinguistics group in the Philippines that are in the level of endangerment. The objectives of this study are the following: to identify who are the indigenous of the Philippines by highlighting distinct cultures and practices of indigenous peoples such as hunting, family, rituals, and other cultural aspects; to enumerate the specific terms used by indigenous peoples related to their indigenous ways and practices; to analyze how their indigenous system and practices significant to their assertion as indigenous peoples; and to explore the issues and challenges faced by indigenous peoples in the country. The development of the identity and concept of indigenous peoples is anchored on the internal and external experiences of the community. External factors refer to social norms, standards, and policies that affect the assertion of the indigenous peoples in the country, while internal factors refer to the lens or perspective of indigenous peoples based on their organic culture and indigenous narratives. External factors include the Republic Act No. 8371 also known as Indigenous Peoples Right Act of 1997 (IPRA 1997) and other government policies, while community assertions and indigenous cultures are used as an internal basis for understanding the concept of "indigenous." The negotiation of two factors is essential to understand the concept of Indigenous Peoples. In relation community assertion and indigenous cultures, this study presented some terminologies of the unique cultures and indigenous knowledge of the Dumagat-Bulos from Sierra Mountain range of Doña Remedios Trinidad, Bulacan, Philippines.

**KEYWORDS:** Endangered Languages, Indigenous Peoples, IPRA, Indigenous Identity.

### INTRODUCTION

The topic on indigenous peoples (Ips) or Indigenous Cultural Communities (ICCs) is vast and diverse, it includes language, kinship, political systems, livelihood, health, religion or beliefs, practices and identity. The issue of identity is a complex one, it encompasses political and cultural perspectives that both separate and connect individuals and communities. Identity reflects one's sense of belonging to a place, community, culture, and self. In the concept of indigenous peoples, the unique culture and practices of a serve as a concrete basis for their distinct identity. A holistic view of culture is essential since it covers various dimensions such as language, products, practices, perspectives, people, and community (Moran, 2001). In the Philippines, some indigenous people groups have similar practices and beliefs even though they have different names or assertion. For example, the Dumagat group in Central Luzon, the word Dumagat is collective term for indigenous people with dark skin and curly hair residing in the Sierra Madre Mountain range in Central Luzon region, Philippines. Dumagat people normally have black skin, kinky hair, and small physique. Even they are known by the lowlanders as one tribe because of their physical appearance, Dumagats in Central Luzon were consist various groups such as Alta, Alta Kabulowa, Bulos, Umiray, and Remontando. Despite of their different ethnolinguistic affiliations—they share the same belief in the great creator, whom they call *Makedepat*. Having a common belief in supreme being is not surprising, since Philippine languages are related and have their roots in the Austronesian language (Scheerer, 1918 cited in Reid, 2017).

The rich culture of indigenous peoples in the country shapes their identity, serving as the internal basis of their indigenous concept. In addition, this study will feature data on the concept of Indigenous People, drawing from existing policies, laws, and societal norms, which form the external basis. Therefore, the identification of indigenous identity in the Philippines is not solely based on the individual (internal), but also on the societal context (external) (Burke, 2004). By comparing these two bases, we can demonstrate how the concept of being indigenous in the Philippines is formed.

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The meaning and concept of the term "indigenous People" according to the Indigenous Peoples Right Act of 1997 is the connection and agreement with the unique and organic culture of indigenous peoples as proof of the convergence of the internal and external aspects of the term. The agreement or disagreement of policies and laws on indigenous practices, perspectives, and traditions has significant implications on maintaining the identity of indigenous peoples in the country. The negative implications of changes in the culture of indigenous peoples may result in the endangerment of their language. The endangered languages status of a language (ethnolinguistic group) that is on the verge of extinction is a widespread term used to describe it in the linguistics field (Drude, 2013).

According to the Commission on Filipino Language (2016), an estimated 36 languages in the Philippines are at risk of disappearing due to the decreasing number of speakers. The primary reason for this is changes in their culture brought about by intermarriage and the adoption of the language, perspectives, and traditions of other ethnolinguistic groups. Moreover, government policies in areas such as education, religion, and language regulations within communities under their jurisdiction also contribute to the cultural shifts impacting indigenous groups.

In terms of the number of indigenous groups in the country, it cannot be said with certainty how many indigenous people there are in the Philippines. Many scholars and linguists have attempted to determine the number of groups, but the results vary according to the anthropological and linguistic methods used for validation. The primary basis for identifying indigenous groups in the country is their native language. Culture is reflected in language as it serves as a repository of the representation and meaning of their identity. The material and non-material culture of an ethnolinguistic group can be observed in their existing language or dialect. The differences between the languages of each group in the country show its separation from other groups. Based on studies, there are at least one hundred indigenous groups in the Philippines. McFarland (1984) found more than 110 languages/indigenous groups in the Philippines, while Lawrence Reid (2000) found more than 150 languages/indigenous groups. Jesus Peralta (2000) identified 78 indigenous groups in the Philippines, while Thomas Headland (2003) estimated 100-150 languages/indigenous groups in the country. According to NCIP (2009), there are 109 indigenous groups in the Philippines. According to the data of the Commission on the Filipino Language (2015), there are 130 indigenous languages/groups in the Philippines, and according to the data of the Summer Institute of Linguistics Ethnologue (SIL, 2020), there are 186 indigenous languages/groups in the Philippines. Although the results differ, it is clear from the data from various studies that there are many indigenous groups in the country. According to NCIP (2009) data, the number of indigenous groups in the Philippines, including subgroups, is estimated to be between 70-140. Indigenous peoples comprise about 12-15 million or 15% of the country's total population. More than 33% of the total number reside in Luzon, 6% in the Visayas, and 66% in Mindanao. Indigenous communities are found in 65 out of 81 provinces in the country, scattered throughout the entire archipelago - mainland Luzon, Palawan, Mindoro, Visayas, and Mindanao. Indigenous communities are typically located in forests, mountains, and coastal areas, while some live in urban areas. Examples include the Igorot in the Cordillera region; Agta in Northern Luzon and the Bicol Region; Dumagat and Ayta in Central Luzon; indigenous groups in Palawan on the island of Palawan; Mangyan in Mindoro; Ati and Tumandok in the Visayas; and Manobo and Non-Christian IP in Mindanao.

The different cultures, politics, population, locations, languages, and people of the indigenous groups in the Philippines demonstrate how diverse the country is when it comes to studying identity. It is clear from the aforementioned studies and literature that the issue of identity regarding the concept of indigenous people is complex. From this, the researcher was challenged on how the concepts of "indigenous communities" or being indigenous should be formed from their internal and external experiences and perspectives.

### Objectives of the Study:

In general, the purpose of this paper is to identify the so-called indigenous groups in the Philippines by featuring some of the cultures of specific indigenous groups in the Philippines. Specifically, the following are aimed:

1. to identify the various terms used for the indigenous Dumagat group;
2. to learn about their assertion in considering themselves as indigenous; and
3. to analyze the issues/challenges faced by the Dumagat indigenous group which may also be experienced by other indigenous groups in the country.

### METHODOLOGY

This study is based on Indigenous Research design or Indigenous Research Methodology (IRM). Indigenous Research Methodology is divided into four (4) aspects (Wilson, 2001): Ontology - the study and understanding of the nature of reality or realities; Epistemology - the study of the nature of knowledge, how reality is perceived; Methodology - how the methods of looking at reality (epistemology) are used to gather additional knowledge about the said reality; Axiology - a set of ethics or

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moral standards in conducting research. Indigenous Research Methodology is a belief that is suitable for indigenous research work. It aims to consider cultural standards, values, and ways of thinking as an important part of conducting research. The showcasing of their indigenous knowledge and terminology is given meaning and concept based on their indigenous perspective. This method can be considered as Indigenist Research Methodology, which not only highlights but also gives a voice to the indigenous peoples as partners in research allows the lens of the indigenous peoples to be emphasized, giving them a voice as a marginalized sector.

### **METHODS**

In gathering specific data related to the concept of Indigenous People such as hunting, family, and other related cultures of indigenous groups in the Philippines, the researcher used an ethnographic approach in this research to immerse themselves in the community where the fieldwork was conducted. Ethnographic approach or ethnography is the study of relationships and social interactions, and the culture of a group - these groups can refer to the larger society, community, organization, or group (Reeves, S., et al., 2013). The central concept of ethnography is to develop a rich, holistic view of people's perspectives and behaviors, as well as the nature of their lives (Hughes 1992). The primary methods used in this approach are interviews, participant observation, guided discussions, and documents. After gathering the indigenous terms, they were analyzed based on the meaning given by the Indigenous Peoples' Rights Act of 1997 (RA 8371) to align with the internal experiences of indigenous peoples in the country and to develop a concrete discussion on the concept of "indigenous" in the Philippines.

### **LIMITATIONS**

The primary focus of this research is the indigenous knowledge and culture of the Dumagat particular the tribe of Dumagat-Bulos that residing in the Sierra Madre mountains of Central Luzon region. It highlights the various terms used by the Dumagat to refer to themselves as indigenous; related indigenous knowledge about hunting, religion, and family; as well as the challenges faced by the Dumagat that may affect their culture and perspective.

### **RESULTS AND DISCUSSIONS**

#### **Ascription based on Internal and external labeling.**

According to existing laws, an individual or group may be considered indigenous if they qualify or meet the definition and standards set by the Republic Act No. 8371 also known as Indigenous Peoples Right Act of 1997 (IPRA 1997). According to Sec 3h of RA 8371, the term "katutubo" (indigenous peoples) or "katutubong pamayanan" (indigenous cultural communities) refer to a group of people or homogenous societies identified by self-ascription and ascription by others, who have continuously lived as organized community on communally bounded and defined territory, and who have, under claims of ownership since time immemorial, occupied, possessed and utilized such territories, sharing common bonds of language, customs, traditions and other distinctive cultural traits, or who have, through resistance to political, social and cultural inroads of colonization, non-indigenous religions and cultures, became historically differentiated from the majority of Filipinos. ICCs/IPs shall likewise include peoples who are regarded as indigenous on account of their descent from the populations which inhabited the country, at the time of conquest or colonization, or at the time of inroads of non-indigenous religions and cultures, or the establishment of present state boundaries, who retain some or all of their own social, economic, cultural and political institutions, but who may have been displaced from their traditional domains or who may have resettled outside their ancestral domains. The definition of indigenous people is very holistic. It encompasses all domains of the Indigenous Cultural Community concept. As per stated, some of the description considered for being indigenous in the country include having a name or terminology(ies) based on the community's internal language (endonym) or terminology(ies) from outside the community (exonym), as well as a broad concept of culture from ancient times (pre-colonialism), colonization period, and up to the present.

As stated by the law, Indigenous Peoples are better known as such, often also referred to as Indigenous Cultural Communities due to their collective view of their identity and culture. In some studies, they are also called tribes (Wolf, 1982); minorities (Eder and McKenna, 2008); marginalized sector; and ethnic group. These terms were coined by different scholars and law-makers. These are different from terms coined by non-indigenous people, and internal or self-ascriptions of indigenous people. For example, the Dumagat Indigenous people in Bulacan call themselves "Bulos," which means "river flow." This ascription clearly reflects their way of life and culture since the time of their ancestors who lived along the river. The Dumagat often build their homes by the river and obtain their food from it. Thus, the word "bulos" which means "river flow" is significant for the Dumagat as it is intertwined with their story as indigenous people in Bulacan province. On the other hand, the term

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"Dumagat" is considered by the Dumagat people as a term coined by the "abyang"<sup>1</sup> (non-indigenous people) to refer to their group. In a sense, "bulos" is the term used internally for themselves, while "Dumagat" is the term used by non-indigenous people. In addition to their personal term, the Dumagat also use the word "bulos" as a term in their indigenous language. Although "Dumagat" is the collective name of most of the indigenous people who reside in the Sierra Madre mountains in the Central Luzon region of the Philippines, each Dumagat still assert that they are different to other Dumagat because of having different languages. This can be seen in the simple illustration below.

Indigenous Cultural Communities	Language	Endonym	Exonym <sup>2</sup>	Location
Dumagat Bulos	Bulos	Dumagat, Tagibulos, Bulos	dumagat, baluga, itim,	Bulacan
Dumagat Remontado	Hatangkaye	Dumagat Remontado	negrito, ayta, baluga,	Rizal
Dumagat Umiray	Dumagat Umiray	Dumagat Umiray	kabalat, agta, katutubo,	Rizal and Bulacan,
Alta Kabulawan	Kabulowan	Dumagat, Alta Kabulowan, Kabulowan/Kabulowen	Pugot	Aurora and Bulacan
Alta	Alta	Dumagat, Alta, Edimala		Aurora

The presence of numerous indigenous terms in the Central Luzon region is a rich reflection of their history, dating back to the time when they lived solely among themselves until they had interactions with outsiders or non-indigenous communities. These terms exemplify the dynamic nature of their way of life. The existence of diverse terms among the Dumagat themselves also signifies clear distinctions, particularly in terms of language and culture. Despite variations in transcription and nomenclature, it cannot be denied that they are derived from the same language family - the Austronesian, Malayo-Polynesian, and Greater Central Philippine languages (Eberhard et al., 2022) - as evident in their spoken language, which shares similar forms and concepts.

### Indigenous Terminologies on their Indigenous Concept.

This part refers to their internal bases. In addition to naming or labeling the Dumagat of Bulacan, here are some concepts of their indigenous identity that respond to RA 8371 (Indigenous Peoples' Rights Act) regarding their Ancestral Domain or territory, Political Structure, Indigenous Knowledge System and Practices (IKSP), Indigenous Language, Customs and Traditions, and other related concepts. The Dumagat-Bulos indigenous people live in the mountainous region of the Sierra Madre in the Central Luzon region, particularly in the provinces of Bulacan, Nueva Ecija, and some parts of Rizal in CALABARZON Region. Initially, they call themselves as Bulos which means "river flow" while non-indigenous people refer to them as Baluga, and Kabalat, sometimes they refer as Ayta, Agta, Ita, Negro or Negrito. The Dumagat people are not far different from other group of Negrito such as Agta and Ayta when it comes to physical appearance. They have dark skin, curly hair, and typically stand at 4-5 feet tall (pure Dumagat). Their native language is also called Bulos, which is the same as the name of their group. The political structure of the Dumagat is only divided into two—the tribal chieftain and the tribal elders. They call their tribal chieftain "gangot", who is characterized as brave and well-respected member of the community that capable of facing other people, especially non-indigenous people. The term tribal chieftain is a term that originated from NCIP. The main function of gangot is to serve as representative of the community in any external events and matters such as meeting with the NCIP, barangay, and to other non-government agencies. Tribal elder are called "lupon." They were normally grandparents or oldest family members. Lupon can also address as "gupad" which describe elderly women and "laki" for elderly men. The lupon is responsible for making decisions and settling disputes within the community. The lupon has the power to recommend who among the community members

<sup>1</sup> The indigenous Dumagat-Bulos people use the term "abyang" to refer to Tagalogs or those who are not part of their group

<sup>2</sup> The words "baluga," "Ita," "Ayta," "kabalat," and "katutubo" are derogatory or insulting terms for the Dumagat-Bulos because they have negative connotations that are not appropriate for their group. Like "Ayta" or "Ita," they do not accept these terms as labels for themselves because they do not live in Pampanga. The term "kabalat" is a derogatory term for them because it is used by Tagalog speakers with a mocking tone. The word "baluga" is also an insult to them because it is not registered in their language. Meanwhile, for the Dumagat-Bulos, the term "katutubo" is only appropriate for indigenous people in Pampanga and Zambales because for them, the term "katutubo" refers to people who live near Pinatubo.

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could be the next tribal chieftain. In the culture of the Dumagat, the elders are the ones who have more say in the decision-making process for the community than the chieftain. Their experience and age within the community are considered as the main basis for cultural adherence.

In terms of traditions and belief, even before Christianity was introduced to their group, the Dumagat already had their own belief in the great creator, which they call "Makidepat." They believe that Makidepat provides blessings and protection to their group. Apart from Makidepat, the Dumagat-Bulos also have belief to unseen forest elements which they refer to as "Agta de Bokod." Dumagat considered these elements as forest guardians. They believed that Agta de Bokod led the wild animals to their traps or snares, so that they can have food to eat. They also believed that their ancestors who have long passed on are also became guardians of nature.

In terms of cultural practices, the Dumagat do not embalm their deceased loved ones; they usually wrap them in a blanket or a santol leaf, and the lips are pinched together with bamboo. The funeral typically lasts up to three days, during which time the bereaved family members sleep next to the deceased as a final act of love. Afterward, the deceased are buried near the river where they often build their "tinupi"<sup>3</sup> homes. Tinupi is a type of temporary shelter made of stacked leaves and wood, held together with rattan and *nitò*<sup>4</sup>. The Dumagat are not known for farming, and instead rely on hunting, fishing, and gathering rootcrops and fruits for their livelihood (Headland et al., 1989). Even though hunting and fishing are common among indigenous groups in the country, the methods and terminologies for catching vary. For example, "ge-ikag" refers to hunting in the Dumagat-Bulos, while "pangayam" is the term used by the Ata—other negrito group in Negros Occidental. Some groups use traps to catch animals, while others use dogs or hunting tools like improvised guns, bows, and spears. A significant part of culture of the Dumagat involves offering sacrifices as a way of thanking Makidepat and Agta de Bokod for providing food and keeping them safe. The culture of the Dumagat is truly rich and unique because it is grounded in their own way of life, meaning, and language.

Here are some other indigenous terms in various domains used by the Dumagat-Bulos people residing in DRT, Bulacan:

- **adéw** - refers to monkey (*Macaca philippinensis philippinensis*) is one of the animals commonly caught by the Dumagat when they go hunting.
- **aklóp** - refers to the roof/peak or the highest part of the house. The roof structure in Dumagat dwellings is typically made of layered branches and leaves.
- **alálang** - part of the body that refers to chest.
- **amâ** - father or paternal figure in the Dumagat family.
- **awóng** - refers to grandmother or grandfather.
- **gepánusû** - gathering of river snails (class Gastro-poda).
- **getanúm** - planting activity (any type of plants)
- **gesalád** - river spearfishing.
- **geduláng** - gold panning.
- **mettának** - refers to the family or unit commonly composed of parents and children.
- **biyakúd** - refers to the fence or barrier that surrounds a house. It can also refer to an enclosure for domestic animals.
- **biyalóy** - house structure where Dumagats dwell.
- **Guramót** - refers to fingers.
- **guróy** - waterfalls or Refers to water that flows from a higher point to a lower point
- **ibít** - lips or part of the face at the opening of the mouth, used for speaking, eating, and expressing emotions
- **inâ** - mother or maternal figure in the Dumagat family.
- **káksan** - bone or rigid organ that forms the skeleton of vertebrate animals, providing support and protection for the body and enabling movement.
- **katát ni kew** - bark of a tree
- **kumót** - part of the body that refers to hand.

<sup>3</sup> "Tinupi" is similar to the form used by Ayta, Alta, and Agta tribes in Luzon where they usually lift and position the "atip" (a type of shelter) where it can receive sunlight and wind.

<sup>4</sup> This refers to a type of vines (*Ligodium circinnatum*) that the Dumagat people use as a tie or cordage. It is also often used in making hats and other handmade products.

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- **lángges** - It refers to sand that normally found along riverbanks and is commonly used as the foundation for their traditional folded or native dwellings called "tinupi."
- **lubí** - The mature fruit of the coconut tree (*Cocos nucifera*).
- **mániwang** - slim or a person who has a thin and muscular physique

The enumerated Dumagat terms above are just a few of the rich indigenous words of the Dumagat-Bulos. Having own terminologies for various concepts related to family, region, nature, architecture, anatomy, and other disciplines clearly aligns with the provisions of RA 8371, which recognizes the Dumagats' distinct culture, traditions, and indigenous knowledge embedded in the Dumagat-Bulos language.

### Issues/challenges faced by the Dumagat indigenous people that may also be experienced by other indigenous groups in the country.

The presence of rich and large numbers of indigenous communities in the country also entails a great responsibility to maintain and support the culture and traditions of each ethno-linguistic group in the country, not just by the government but also by the community itself. It is a complex issue and concern, whether viewed from a cultural or socio-economic perspective. For example, it is difficult to access or travel to communities in remote areas; limited opportunities in education, health, and even employment. There is also a prevailing condescending attitude towards indigenous communities among many Filipinos, especially those belonging to dominant ethnolinguistic groups in the country. The evidence of this can be found in the discourse frequently heard by the researcher from acquaintances, students, and even individuals encountered during fieldwork, who do not belong to indigenous communities—such as indigenous peoples having crooked or flat noses; being poor because they live in the mountains or being rich because they have vast lands; all indigenous people wears loincloths or traditional clothing; they having unique physical features (especially if referring to indigenous peoples with dark skin and curly hair); and they have amusing language or dialects. The prevailing colonial and inferior view of indigenous peoples in the Philippines is noticeable due to their complex experiences and orientation to the hands of colonizers, capitalist-fascists, feudal lords, and foreigners who continue to encroach on their ancestral lands. In the dissertation of Prof. Mary Jane Rodriguez-Tatel (2021), she mentioned that the problems and challenges faced by indigenous groups are always related to land issues. Like the issue of ancestral lands and being employed as workers or laborers on their own lands.

## CONCLUSION

Out of the many indigenous communities in the country, Dumagat-Bulos is one of the few ICCs that shows unique culture and customs. Like other indigenous groups in the country, the culture, history, and practices of the Dumagat reflect the overall concept of their identity and being as native settlers of the country. Culture is not just limited to the practices, products, language, and traditions of a person or group, it encompasses the entire concept of the individual and society that shapes their identity. While the Agta, Ayta, and Dumagat may share physical similarities, such as being often considered related due to their linguistic characteristics or similar appearances and clothing, it is difficult to make assumptions about their similarities due to differences in their language, practices, and beliefs. Just like what former Commissioner Dominador Gomez<sup>5</sup> of the National Commission on Indigenous Peoples (NCIP) mentioned, although the ethnolinguistic groups in the country are believed to be related due to the close characteristics of their languages or almost identical appearances and clothing, they still have unique characteristics, especially in terms of values, traditions, practices, and beliefs. The differences in the culture of the indigenous communities in the country set each indigenous group apart.

Various institutions, particularly those in the field of education, will play a significant role in increasing the awareness and sensitivity of every Filipino towards the situation and culture of indigenous peoples in the country. Responding to the issues faced by indigenous peoples and creating programs and projects will help to strengthen and improve the views on indigenous communities. Providing equal opportunities and privileges that come from outside (the state) will help the internal perspective of indigenous peoples' value and take pride in their own history, identity, and culture.

## Recommendation

In relation to possible research studies, the researcher respectfully recommends the following:

1. The researcher suggests to focus on other aspects and domains of indigenous identity, such as the challenges and issues in their socio-economic condition, as this can contribute to a broader understanding of indigenous communities in the present context.

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<sup>5</sup> From my interview with Comrade Gomez of the NCIP regarding the validation of the Higaonon language in Impasug-ong, Bukidnon on November 24, 2018.

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2. For future researchers, conduct similar research but with a specific focus on different indigenous groups in the Philippines, particularly those residing in urban areas or in coastal regions.
3. The researcher recommends to undertake a comparative study between indigenous communities living in the mountains and those residing by the coast, with a specific focus on their indigenous traditions and knowledge, in order to further strengthen the concept of indigenous identity in accordance with Republic Act 8371.

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- 2) Rogelio Bihasa, Dumagat-Bulos, October 26, 2021, Sitio Basyo, Barangay Kalawakan, DRT, Bulacan. Personal interview
- 3) Dominador Gomez, Higaonon & Commissioner NCIP, November, 24, 2019, Impasug-ong, Bukidnon, Personal interview

## Implementation of Supervisors as Agents of Change in Islamic Education in Indonesia (Case Study of Islamic Religious Education Supervisors in Kuningan Regency)



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**ABSTRACT:** This article aims to reveal the implementation of the supervisor's role as an agent of Islamic education change in Indonesia and the impact of implementing supervision on teachers' performance. This research is field research using the method of observation, interviews, and documentation. The results showed that the role of Islamic religious education supervisors in Kuningan Regency was good, although it could have been better. The indicator is in carrying out the guidance for religious teachers, as expected. The relationship between implementing supervision by guiding teachers at schools is good, but it has yet to be optimal. It is due to the situation and condition of the school. Besides, many schools are fostered to be supervised, and the implementation of supervision significantly impacts the performance of Islamic religious education teachers. This is reflected in the implementation of teaching and learning activities carried out by the teacher and the current administration, and this indicates that the teacher has been able to feel the maximum guidance from the supervisor. The impact shown between the implementation of supervision on teacher performance is positive. With the more widespread discussion about improving the quality of education, this research will be a valuable input for existing regulations. Due to the limitations of this study, it is hoped that other studies will explore the aspects that have yet to be discussed in this study. The process of implementing teacher professionalism in the form of self-evaluation through teacher performance assessments is a new finding by the author on Islamic religious education supervisors in Kuningan regency, which has positive values in carrying out supervisory duties, so it will change the paradigm of supervisors in improving teacher competence, especially Islamic religious education teachers in Kuningan regency.

**KEYWORDS:** The role of supervisors, implementation of supervision, the impact of supervision

### I. INTRODUCTION

Supervision means seeing or reviewing from above or observing and assessing what is done by superiors (people with advantages) to embody subordinates' activities and work results (Fitriyani, 2018). Related to education, supervision is a professional activity by school supervisors to assist school principals, teachers, and education staff in improving the effectiveness and quality of education and learning (Karim et al., 2021; Wahyu, 2020).

Development and assessment of Islamic religious education (PAI) teachers through supervision activities are necessary (Nilda et al., 2020; Tonta et al., 2019). These activities contain coaching elements without looking for faults so that deficiencies found can be corrected to achieve better learning activities. This coaching can be done by giving directions, guidance, examples, and suggestions for implementing PAI learning in schools (Posangi, 2021; Suradi, 2018).

Supervisors related to work results that have been achieved in terms of quality and quantity, which will impact improving the quality of education (Miran & Sumampouw, 2023; Renata et al., 2018). Efforts to improve the quality of education require planning and a long process (Djubaedi et al., 2023; Hidayat et al., 2022; Maghfiroh, 2018). Improving the quality of education requires designing what to improve, choosing which parts need to be improved, and how to produce superior output among existing schools. Improving the quality of education requires high commitment, discipline, and joint responsibility from all components that drive the school (Masrullah & Ghufron, 2020; Retnasari et al., 2023).

In Indonesia, in the Kuningan regency, there are 25 PAI supervisors, consisting of 13 PAI supervisors at the TK/SD/SDLB level, with a total of 228 TK and 658 SD, 9 PAI supervisors at the SMP/SMPLB level, with a total of 93 schools. 3



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SMA/SMALB/SMK supervisors with 27 SMA and 35 SMK. This number includes two provincial PAI Disdik supervisors. Kuningan regency, which has a vast area, even with a geographical location that is primarily mountainous, is an obstacle in terms of transportation.

Implementation is a process of ideas, policies, and innovations in an appropriate action to impact the realized values and attitudes (Dalimunthe, 2019; Fatimah et al., 2022). Implementation in education is actions by individuals, government, or private groups to achieve the goals outlined in policy decisions (Yuliah, 2020). Implementation boils down to activities, actions, or the mechanism of a system. Implementation is not just an activity but an activity that is planned to achieve the objectives of the activity (Isya, 2022). In education, the implementation is not alone but is influenced by the next object, namely the curriculum.

Supervision is all activities carried out by managers to ensure that actual results follow planned results (Djadjuli, 2018). Supervision relates to comparisons between actual implementers of plans and initial steps for corrective action against significant deviations from plans.

Mukhtar (2013) suggests several elements of supervision activities. First, supervision consists of observing the facts regarding the implementation of the work or activity being observed. Second, this fact is material for formulating supervisory actions that guarantee that work is under predetermined plans. Third, supervision is more emphasized on work in progress and work that has been completed. Fourth, supervision is a systematic effort to set implementation standards to plan, design information systems, provide feedback, compare actual activities with standards, determine, measure deviations, and take corrective actions to ensure activities achieve goals effectively and efficiently. Fifth, supervision is constructive, does not find fault, but is more directed at the time, funds, materials, methods, and personnel efficiency by minimizing deviations.

A supervisor is a person who is professional when carrying out supervisory duties (Caras & Sandu, 2014). He acts normatively and based on scientific principles to improve the quality of education. To carry out supervision requires expertise that can see carefully the problems of improving the quality of education. Therefore, educational supervision activities cannot be carried out by people with supervisory disciplines; moreover, the person needs to prepare to be projected to become a supervisor (Marhawati, 2018).

The task of the school supervisor is to carry out coaching, technical evaluation, and educational administration at the school for which he is responsible (Rahmah, 2018). This task is carried out through monitoring, supervision, evaluation, reporting, and follow-up on the supervision results. Supervision that school supervisors should carry out consists of academic supervision, which is related to aspects of the learning process, as well as managerial supervision, which is related to aspects of school management and administration (Rohmatika, 2016).

According to Danim & Khairil (2015), supervisory functions are as follows:

- a. As an intermediary in conveying the interests of students, parents, and school programs to the government and other competent bodies.
- b. Monitor the use and results of learning resources.
- c. Planning educational programs for the next generation.
- d. Choose innovations that are consistent with the future.

School supervisors must have several competencies to ensure quality. According to Selamet (2017), these competencies are personality competencies, academic supervision competencies, managerial supervision competencies, educational evaluation competencies, research and development competencies, and social competencies.

In Indonesia, PAI (Islamic Religious Education) supervisors in schools, as stated in article 5 paragraph 4 of the Republic of Indonesia Minister of Religion number 23 of 2013 states that PAI supervisors have the authority to:

- 1) Provide input, advice, and guidance in the preparation, implementation, and evaluation of education and/or learning of Islamic religious education to school principals and agencies in charge of education affairs in districts/cities;
- 2) Monitor and assess the performance of PAI teachers and formulate follow-up suggestions needed;
- 3) Conduct training for PAI teachers;
- 4) Consider in assessing the implementation of the duties of the PAI teacher to the authorized official; And
- 5) Consider in assessing the implementation of tasks and placement of PAI teachers to school principals and authorized officials.

## **II. METHODOLOGY**

This research is field research using qualitative analysis. Therefore, the data collected in this study is in the form of information in the form of statements and not in the form of numbers. Qualitative analysis is considered more appropriate in this study because it is expected to make it more possible to develop this research to gain an in-depth understanding. The aim is to understand social phenomena from the participants' perspective.

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The research site is in Kuningan regency, Indonesia. The primary data sources for this research are 1. Supervisors of elementary Islamic religious education at schools in Kuningan regency. 2. Elementary Islamic religious education teacher, 3. Principal of the school.

### **III. RESULTS AND DISCUSSION**

#### **A. Supervisors as an Agent of Change**

An agent of change is a person who influences clients to accept innovation according to their goals (Iskandar & Zulela, 2021). Change agents are tasked with creating a link between the innovation entrepreneur (source of innovation) and the client system (target) (Agusta et al., 2021; Djubaedi et al., 2022). Agents of change help communities or groups plan development or reform goals, focus on problems, seek possible solutions, organize assistance, plan actions intended to improve situations, overcome difficulties, and evaluate the results of planned efforts. People or parties who can become agents of change can come from within (internal agents) or outside the organization (external agents). Internal agents include managers and exceptional staff within the organization, while external agents include consultants or people who are indeed experts at leading organizational change in certain areas (Kodir et al., 2023; Tohirin et al., 2018).

The success of the change agent in changing the attitude and behavior of the change target social community depends on how far the change agent approaches the target community. The following are the keys to successful change agents (Anwar & Utama, 2013).

1. Change agent work ethic and effort
2. Orientation of the social community of change targets
3. Innovation compatibility with the needs of the social community of innovation targets or public policies
4. Change agent empathy

Various theories about change state that change cannot be avoided, and making changes requires strong commitment and effort from all components of the organization (school). The change will only occur functionally with awareness and understanding of the change itself. Fullan (2015) argues, "One cannot expect teachers to take ownership of change at the beginning of the change process - before they understand all of the implications, and before the change has shown positive effects."

According to Tushman & O'Reilly (1996), there are two categories of change: 1. Evolutionary change. This change is gradual, but constant efforts for improvement and adjustment to the new environment exist. 2. Revolutionary change. This rapid and dramatic change results in a radical shift towards new ideas and structures. A change agent must have four characteristics (Djubaedi et al., 2022): 1. Have interpersonal communication skills; 2. Having problem-solving capability; 3. Have educational skills; 4. Have self-awareness. It is not easy for a supervisor to become an agent of change. However, the abovementioned criteria are not impossible with good preparation through cadre, education, training, and selection.

#### **B. The role of PAI supervisors in schools**

The supervisor's role in this study is the function and primary task of the PAI supervisor in improving the quality of education and the preparation of educational programs by the supervisor on the quality of education in Kuningan Regency.

Several statements from informants show that PAI supervisors have had the role expected of teachers in schools. Namely: educational partners, innovators, consultants, and motivators. The teacher's success in the academic aspect is also not spared from the supervision activities carried out by the supervisor. This can be seen from the frequency of supervisor visits and the presence of school supervisors to carry out supervision or coaching in the KKG, which is good because, in one semester, supervisors can make 2-3 visits.

#### **C. Implementation of Supervision in Schools**

The findings show a good link between implementing supervision and coaching teachers in schools. Several statements from the interview results show that PAI supervisors have carried out the role expected of the assisted teachers in schools. The teacher's success in the academic aspect is also not spared from the supervision activities carried out by the supervisor. This can be seen from the frequency of good supervisor visits. The presence of school supervisors to carry out supervision or coaching in the KKG can be said to be quite good because, in one semester, the supervisor can make 2-3 visits or even more.

Supervisors as colleagues in improving the success and quality of education in schools, through discussions and good communication between teachers and supervisors, are open and always ready to serve any complaints teachers face and partners in helping teachers' difficulties. In comparison, the teacher is the leading actor and the spearhead of learning activities that interact directly with students in the learning process. Teachers are the foremost executors of children's education in schools. The existing abilities of teachers largely determine the success or failure of efforts to improve the quality of education.

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Given the importance of the teacher's role in improving the quality of education, it is only appropriate that teachers' ability is increased through continuous coaching programs through supervisory activities. Visits to schools and class observations are the techniques of a supervisor in carrying out supervision at school.

### D. Impact of Supervision Implementation

The nation needs human resources that have high competitiveness and quality to face globalization which is full of intense competition in all aspects of life. Success in producing citizens as competitive and quality resources depend heavily on the quality of the educational process at and out of school.

Teacher performance is a component of human resources that must be nurtured and developed continuously to prepare generations who have skills and expertise in their respective fields and noble character, meaning that teacher performance has a vital role in improving the quality of education. Mashari (2019) and Putri & Mahmud (2016) also stated that no matter how good and complete the curriculum, media, methods, facilities, and infrastructure are, the success of education lies in the teacher's performance.

Teacher performance needs to be improved because it is responsible for forming students' abilities and mentality. For this reason, problems related to teacher performance, both in terms of physical and psychological aspects, need to be of concern to supervisors and motivators. This follows what was conveyed by the results of interviews with the chairman of the KKG PAI Cilimus that through various activities and meetings, it always motivates to work professionally as a teacher.

The success of schools in improving the quality of education is closely related to the ability of supervisors to supervise their teachers, such as providing guidance, coaching, and services that can advance teacher performance in carrying out their duties. Besides that, supervisors as supervisors must be able to develop the creative potential of the teachers, they foster either through training or education workshops.

## IV. CONCLUSIONS

The study results show that "Implementation of the Role of Supervisors as Agents of Change in Islamic Education in Indonesia" has been well implemented. The indicator is that the results of interviews with PAI supervisors, school principals, and Islamic Religious Education teachers show that in carrying out coaching, the religious teacher already has the role expected by the Islamic Religious Education teacher at school. This is because Islamic Education supervisors have carried out their supervision to the fullest and are trying to be at the forefront of their role as a motivator, namely the implementation of good teaching and learning, there is renewal as the role of an innovator, and there is discussion and openness that acts as a partner/co-teacher.

Implementing supervision, namely, the guidance of PAI teachers in schools, is good but could be more optimal. Based on the results of the researcher's interviews with Islamic Religious Education teachers, it was stated that the frequency of supervision, which is 2-3 times in one semester, causes less than optimal development of Islamic Religious Education teachers. Supervision is carried out using class visits, class observations, group coaching in collaboration with the KKG, workshops, and seminars.

The implementation of supervision significantly impacts the performance of PAI teachers in schools. This is reflected in the implementation of teaching and learning activities carried out by the teacher and the current administration, and this indicates that the teacher can feel maximum guidance from the supervisor. This means that the implementation of supervision of teacher performance is positive, with the implementation of better supervision will improve better teacher performance.

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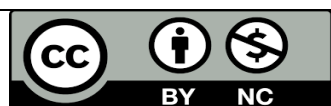
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## The Intention of Participation in Voluntary Health Insurance under the View of Planned Behavior Theory: Evidence of Hanoi Vietnam



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**ABSTRACT:** This study aims to understand why the rate of voluntary health insurance participation in Vietnam is still low based on the analysis of human behavior according to the theory of planned behavior of (Ajzen, 1991), and other extensions of this theory include (Ajzen and Fishbein, 2005), (Ajzen, 2008). Research results show that perceived benefits play an important role in forming attitudes toward the intention to purchase individual health insurance. The conclusion of this article can contribute to providing solutions based on the theory of planned behavior to suggest to policymakers or implementing agencies that they bring solutions in terms of psychology to influence health insurance buyers in the context of implementing universal health insurance in Vietnam today.

**KEYWORDS:** Intention, voluntary health insurance, participation, TPB, Vietnam

### I. INTRODUCTION

Research on insurance demand is derived from Yaari (1964), Yaari (1965), Fischer (1973), Lewis (1989). These studies are based on the expected utility theory (EUT) proposed by Morgenstern and Von Neumann (1953). Accordingly, the demand for insurance is determined based on the maximization of the expected benefits based on many factors concerning risk aversion, such as life expectancy, income, etc. However, the combined impact study has produced inconsistent results due to differences in culture, psychology, and socioeconomic conditions in different regions. Therefore, as empirical studies become more prevalent in economics and studies from behavioral models have been consolidated, the analysis of life insurance purchase decisions in behavior has been adopted to develop (Starmer, 2000).

A few studies have used behavioral theory to examine the intention to buy insurance in general, such as Fishbein (1979), Fletcher and Hastings (1984), Omar (2007) but to explain the need for insurance, life insurance and use the theory of reasonable action (TRA) instead of TPB. Research by Brahmana et al. (2018) has built a model to study the factors affecting the decision to buy individual health insurance for Indonesian people from the perspective of the theory of intended behavior. It has succeeded in explaining the behavior of participants in the Indonesian market.

Health insurance is a content of social insurance. According to current regulations in Vietnam, health insurance is a type of insurance in public health care implemented by the state, not for profit. Accordingly, the purchase of health insurance will be paid part or all of the cost of medical examination, treatment, and rehabilitation, if an accident or illness occurs, which the state encourages to participate to ensure social security. There are two types of health insurance: compulsory and voluntary. Compulsory health insurance is provided to most of the population, with about 91.1 million people participating in health insurance, reaching a coverage rate of 92.04% (Ministry of Health Portal, 2023). However, the remaining nearly 8% not covered by the population of 100 million is a considerable challenge in the current context (Molisa, 2022).

Voluntary health insurance is designed for people in the informal sector with no employment relationship and the right to participate regardless of age. This group has to buy it themselves at the locations of affiliated health insurance agencies and provide services. Accordingly, it is possible to consider the intention to participate in health insurance of these individuals from the perspective of behavior as for regular services. This study uses the approach of the theory of intended behavior to explain people's behavior in planning to buy individual health insurance in Vietnam. Researchers have widely used this theory to study human behavior through many studies, including Brahmana et al. (2018), Mamun et al. (2021). This study examines the limitations of consumers' attitudes and behavioral intentions toward purchasing individual health insurance. Understanding people's

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attitudes and intentions can provide a theoretically sound framework for communicating to target populations and identifying ways to encourage people to consider caring about health insurance to ensure social security in the current context.

### **II. LITERATURE REVIEW**

#### **Health Insurance**

There have been many studies on health insurance but focusing on exploiting different aspects. However, the studies all agree that health insurance (HI) was created to help people with health risks. Health insurance is a hedge against financial risks, protecting against unforeseen health losses and expenditures ((Folland et al., 2016). Therefore, health insurance helps to ensure social security.

Health insurance is a critical tool to reduce the financial burden on people in general and payers in particular when providing medical care, thus making health services more accessible. Up to now, many international studies have shown that health insurance has a positive role in accessing and using health services by reducing the financial burden for people in medical examination and treatment (Chen et al., 2007, Liu et al., 2015).

#### **Theory of Planned Behavior (TPB)**

Theory of Planned Behavior (TPB) (Ajzen, 1991) is a development and improvement of rational action theory. TPB theory (Ajzen, 1991) extended the model of TRA theory (Fishbein, 1979) to overcome the limitations in explaining out-of-control behaviors by adding the perceived behavioral control variable into the model. The theory of planned behavior (TPB) holds that human behavior is guided by three considerations: beliefs about possible consequences or other attributes of the behavior (behavioral beliefs), beliefs about the normative expectations of others (normative beliefs), and beliefs about the presence of factors that may favor or hinder the functioning of the behavior (control beliefs) ( Ajzen, 1991). In their respective set, behavioral beliefs create a favorable or unfavorable attitude toward the behavior; standard beliefs result in social pressures or subjective standards; control beliefs increase perceived behavioral control, the feeling of ease or difficulty in performing the behavior (Ajzen, 1991). Combining attitudes toward behavior, subjective norms, and perceived behavioral control leads to a behavioral intention that reflects actual behavior. Accordingly, the main variables of TPB include attitude towards behavior (ATB), subjective norms (SN), perceived behavioral control (PBC), and intention.

#### **Attitude (ATB)**

By definition, the ATB in TPB is the degree to which a person performing a given behavior considers positive or negative. This definition has similarly been described in other literature, such as (Noor and Mohamed, 2007, Brahmana et al., 2018). Attitudes towards the behavior or decision to purchase individual health insurance are geared towards what the individual thinks the purchase of insurance will bring (positive or negative), such as: purchasing health insurance is useful or buying personal health insurance is a waste of money (Ejye Omar and Owusu-Frimpong, 2007). Accordingly, this study hypothesized:

**Hypothesis 1: Attitude positively affect the intention to take out individual health insurance.**

#### **Subjective norms**

The subjective norm construct is perceived social pressure to participate or not to engage in a behavior (Ajzen, 2008). The subjective norm is determined by the total number of normative beliefs that can be attained regarding the expectation of a significant allusion. Normative allusions can be elicited by asking which groups of people will approve or disapprove, support, or disapprove of an individual's performance of a particular behavior.

**Hypothesis 2: Subjective norms positively affect the intention to take out individual health insurance.**

#### **Perceived behavioral control**

As explained earlier, TPB was developed by adding perceived behavioral control as a belief control variable and expressing ease or difficulty in performing the behavior. It is a belief about possessing the necessary resources and opportunities to perform a specific behavior. For example, when people are not equipped with enough resources or information to initiate the behavior, their intention to perform it can be lowered even if they have favorable attitudes or subjective norms ((Madden et al., 1992). In other words, individuals are likely to engage in certain behaviors if they believe they have the resources and confidence to perform the behavior. Behavioral control is also thought to directly affect intention and may reflect actual behavior (Madden et al., 1992). A significant relationship between behavioral control and intention has been found in many studies, such as (Armitage (2005), Fen and Sabaruddin (2009), Shah Alam and Mohamed Sayuti (2011). Accordingly, this study hypothesized:

**Hypothesis 3: Perceived behavioral control positively affects the intention to enroll in individual health insurance.**

#### **Intention**

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Through studying the buying process, we find that purchase intention is essential in assessing customers' ability to perform buying behavior (Younus, 2015). Besides, purchase intention is also considered a factor reflecting the customer's willingness to buy, or buying intention is the driving force behind individual customers' buying behavior (Ajzen, 1991). In this study, intention to participate in individual health insurance is understood as the intention and target behavior of that person in the future about participating in individual health insurance during the specific period studied using the time range within the next 6-12 months.

### III. METHODOLOGY

Therefore, based on the analysis of the available research results and considering the relevance of the theoretical bases, the author finds that the application of the theory of planned behavior of Ajzen (1991) to research study the intention of people to participate in individual health insurance as suggested by (Brahmana et al., 2018, Mamun et al., 2021).

#### Research model

Based on the literature review, the conceptual model research framework of this study is depicted in figure 1.

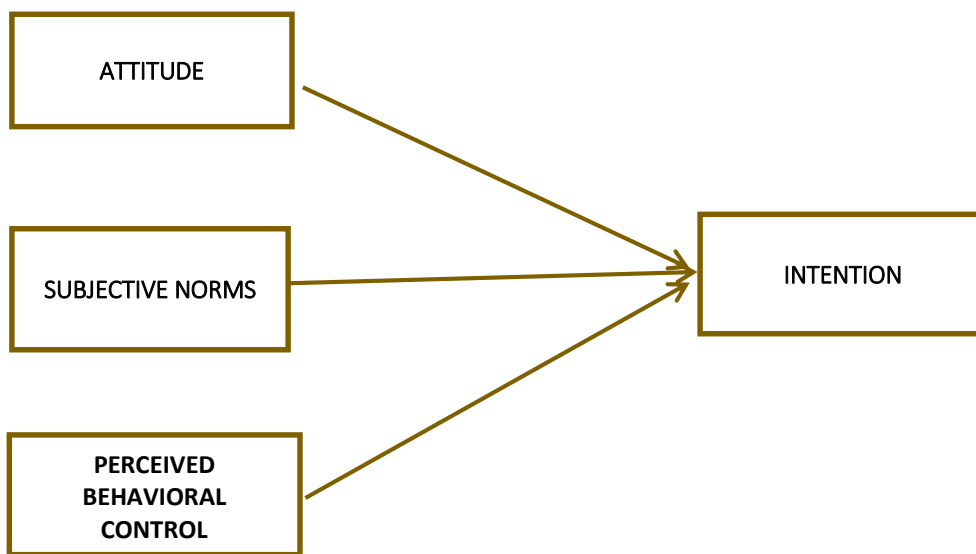


Figure 1: Research Model

The questionnaire was designed based on the theories introduced in the literature review. All the items used include 14 observation variables adopted from the validated scales of (Brahmana et al., 2018, Mamun et al., 2021). Survey subjects in this study are people who currently do not have compulsory health insurance in the informal sector. Accordingly, the surveyed subjects are freelancers, business owners, and employees in small business stores in Hanoi. The survey process was carried out with 200 questionnaires collected, but only 158 questionnaires met the requirements.

### IV. RESULTS

#### Descriptive analysis

The detailed descriptive analysis results of this group of workers are shown in detail in the following table 1:

Table 1. Demographic characteristics of Respondents

Variables	Category	Frequency	Percentage (%)
Gender	Male	75	47.47
	Female	83	52.53
Age	20 – 30	81	51.3
	31 – 40	38	24.1
	41 – 50	21	13.2
	above 50	18	11.4
	Secondary school Graduation	10	6.33



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Educational level	High School Graduation	68	43.04
	College and University Graduation	67	42.40
	Post graduate	13	8.23
Income	Under 5 million	15	9.49
	5 – 7	81	51.27
	7 – 9	42	26.58
	Above 9	20	12.66

From the descriptive analysis, we can see that:

**Genders:** The results showed that 78 male and 83 female participants responded to the questionnaire. The number of women is higher.

**Age:** According to the analysis results, the number of surveyed people aged from 20 to 40 years old accounts for the largest proportion. The age structure of the surveyed subjects is similar to the labor market in informal sector.

**Education level:** According to the table of education structure, we see the highest proportion of people belonging to high school and university graduation. This figure also reflects the educational level of informal sector in Hanoi area.

**Income:** From the interview data, it can be seen that the highest proportion of income is in the range of 5 - 9 million (67.6%). At the same time, this rate also shows that in reality, people's income is not too low, but the rate of participating voluntary health insurance is still limited. Therefore, determinant analysis is expected to produce significant results.

### Construct Reliability and Validity

The reliability of the structures is determined by the indicator reliability and the internal consistency reliability. Wong (2013) defined the reliability of the index as the square of the factor loading of each indicator. The study also recommends that if this value is greater than 0.4, the reliability of the index can be ensured. In addition, internal consistency reliability for all latent variables was evaluated using Cronbach's Alpha and composite reliability (CR) (Hair Jr et al., 2016).

In this study, the test applied to latent variables shows that the factor loading coefficients were all greater than 0.5 and the combined reliability coefficients were all greater than 0.7. The average variance extracted (AVE) of the concepts were all greater than 0.5, so they all ensure the convergence value of the scale (Hair Jr et al., 2017). Besides, the AVE of each latent variable was larger than the square of the correlation of that variable with the remaining latent variables; therefore, the scale ensures discriminant validity (Sarstedt et al., 2014). The variance inflation factors (VIF) were all less than 3.3, which means there was no multicollinearity phenomenon, and the scale therefore is suitable to apply the structural equation model (Hair Jr et al., 2016). The results of composite reliability analysis are as follows:

**Table 2. Construct Reliability and Validity**

	Cronbach's Alpha	rho_A	Composite Reliability	Average Extracted (AVE)	Variance
ATT	0.920	0.925	0.944	0.808	
INTENTION	0.700	0.703	0.833	0.624	
PBC	0.775	0.798	0.855	0.597	
SN	0.932	0.948	0.956	0.879	

The above results show that all variables make sure the composite reliability and are eligible to carry out the next analysis. Next, the relevance of the research model is evaluated through research data. The results of the model fit test are shown in the following table:

**Table 3. Model fit**

	Saturated Model	Estimated Model
SRMR	0.067	0.067
d_ ULS	0.469	0.469
d_ G	0.227	0.227
Chi-Square	212.307	212.307

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NFI

0.856

0.856

The results show that the research model is consistent with the research data. Therefore, the research model is suitable for analyzing and applying the attitude and intent toward buying health insurance. After completing the basic assumptions of PLS-SEM, bootstrapping is executed. This technique has been implemented to test the hypotheses. The results of bootstrapping PLS show that all hypotheses are accepted because the t-value > 1.96 and the P-value < 0.05. Details are as below:

## Hypothesis test results

Hypothesis testing was performed using Bootstrapping (Hair Jr et al., 2017). In the Coefficients result shown, all of the p-value (sig. Value) are less than 0.05, meaning the independent variables are the significant predictors for the dependent variable. Further, the VIF values on both predictors are lower than 2, meaning there is no multicollinearity.

The output supports to the correlation test as all of the variables have positive relationship on buying intention. Thus, the hypotheses are accepted with the R square adjustment coefficient at 60.1 %. In comparison, attitude is the factor that has the most positive impact on the intention, with a beta coefficient of 0.522 units. Besides, PBC is also a factor that affects

Intention is 0.297 units, and the impact of SN is 0.176 units. The results of impact analysis can be shown in the following table:

**Table 4: Hypothesis test results**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Result
ATT -> INTENTION	0.522	0.522	0.048	10.858	0.000	Supported
PBC -> INTENTION	0.297	0.298	0.055	5.389	0.000	Supported
SN -> INTENTION	0.176	0.179	0.050	3.504	0.000	Supported

## V. DISCUSSION

Previous studies have shown a relationship between the factors in the TPB model and intention. This study also shows that attitude is the variable that has the most substantial influence on intention to participate in individual health insurance, with a beta coefficient of 0.522 units instead of perceived behavioral control. This can be explained by the fact that the current enrollment in health insurance is quite simple and, therefore, only causes a few obstacles and difficulties for people. Meanwhile, attitude is a psychological factor that is governed by people's perceptions. When people see the benefits of participation, attitudes also become positive, promoting the intention to participate in health insurance.

However, the intention to purchase individual health insurance in this study showed a significant association with subjective norm but not strong (0.176 units). The reason could be explained by the limitation of the sample size so that the influence of the people involved was not seen. In addition, there is a fact that the use of health insurance cards for medical examination and treatment of these subjects still needs to be improved, so the extent of the spread of influence is not much. This result differs from the study of (Brahmana et al., 2018) in Indonesia. This result can be explained by the difference in age of the surveyed people, most of them are young workers, so the awareness of risks is low. In addition, the awareness about the health care of young workers in Vietnam is low because most of this age group is trying to increase their income and employment status instead of taking care of themselves.

Research results also show a close relationship between attitude - intention to participate in health insurance. Therefore, health insurance services must be upgraded and accessible so participants can easily carry out medical examinations and treatment activities when buying a card. The difference in service quality between medical examination and treatment by insurance card and voluntary medical examination and treatment still exists. Therefore, participants have yet to see health insurance cards' practical benefits. Therefore, improving service quality and improving medical examination and treatment with health insurance cards are the primary motivations for implementing the universal health insurance strategy in the current context.

In addition, the factors of perceived behavioral control also need to be improved by providing activities to sell health insurance online through application platforms or websites that people, especially young people, can easily access instead of going to post offices or commune health stations like now.

## VI. CONCLUSION

This study has successfully explained the relationship between factors in the theoretical model of intended behavior applied in studying the intention to participate in individual health insurance of people in Vietnam in the informal sector awake. The research

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results are also consistent with the current situation of participating in individual health insurance in Vietnam. However, due to the sample size limitation, some relationships may need to be fully explained. At the same time, this study only applies to the simple TPB model instead of the extended TPB model as suggested by (Ajzen, 2008). In addition, this study only focused on intention instead of behavior. Future studies can overcome and develop in this direction.

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## Prevalence of Dental Caries and Related Factors among Patients Attending Dental Clinics in Dentistry Department - Hilla University College, Iraq



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### ABSTRACT:

**Background:** Dental caries is the most common dental health problem caused by bacteria that affecting the teeth of huge population worldwide. Many factors are contribute in the prevalence and evolution of caries, such as standard of living, behavior, hygiene, eating habits, social status and socio-demographic factors.

**Aim:** This study aimed to determine and assess the prevalence, frequency and pattern of dental caries and associated factors among patients attending the dental clinics in dentistry department - Hilla University College, Babylon, Iraq.

**Method:** An institution based cross-sectional study was conducted among 924 systematically selected patients attending dental clinics in Dentistry Department - Hilla University College, Babylon, Iraq from Oct./2021 to Apr./2022. The data were collected using pre-tested questionnaire form and oral examination by a qualified dental professional basic hygienic procedures were applied during an oral examination.

**Results:** A total of 924 patients affected with dental caries that were being more in females nearly two-thirds 578 (62.6 %) and in males nearly one-thirds 346 (37.4 %). Dental caries was lower among respondents who had good oral hygiene status, non-smokers, with blood group AB. Dental caries was higher among respondents rural than urban.

**Conclusions:** Prevalence of dental caries was high and found as public health problem. Socioeconomic status, educational level, and poor oral hygiene practices were associated factors for dental caries. Health promotion about oral hygiene and integration of services are supremely important for the prevention of the problem of dental caries. Smokers patients, who taking sweets, antibiotics and corticosteroids are among the higher cases.

**KEYWORDS:** Dental caries, Dental health, Tooth status, Dental cavities.

### INTRODUCTION

Dental caries is a most common, chronic disease of microbiological origin and counted among the top ten common health conditions affecting human population. It is resulting from toothadherent cariogenic microorganisms, primarily *Streptococcus mutans*, which metabolize sugars to produce acid, demineralizing the tooth structure over time. [1, 2, 3]. It is one of the oral health problems which cause the destruction of the hard parts of a tooth by the interaction of bacteria and fermentable carbohydrates [4, 5]. No It affects hard tissue of the tooth causing demineralization and remineralization. It is a progressive disease which without proper care, can destroy a tooth but is preventable, treated and practically reversible. Dental caries is on the rise to become major public health problems worldwide, nearly 60–90% of children and about 100% of adults have dental cavities, often leading to pain [6, 7, 8]. It was reported that main reason for prevalence of dental caries attributed to lack of knowledge on the causes and preventive methods of the disease. Although the overall prevalence of dental caries decrease in developed countries, caries continues to be an important public health problem in most developing countries [9, 10]. An increasing utilization of sweet foods in the, poor tooth brushing habits, poor oral hygiene and low level of awareness are main factors that increased the levels of dental caries. In addition to this the way of life, eating habits, social status and socio-demographic factors also contribute to the development of caries. Caries can be prevented by decreasing sugar intake and brushing teeth after every meal using the appropriate techniques and regular check-ups [11, 12]. The increasing of dental caries is due to the unlimited utilization of sugary foods, poor oral care practices and inadequate oral health service applications [13, 14]. Also, dental caries is a disease with a multifactorial causes. The prevalence and incidence of dental caries in population is influenced by a number of risk factors such as

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age, sex, dietary patterns and oral hygiene habits [15, 16]. During the past twenty years, there has been a dramatic reduction in the prevalence of dental caries in children and adolescents, which has been mainly due to changes in living conditions, implementation of healthy lifestyles, effective use of fluoride, enhanced self-care practices, and establishment of preventive oral care programs [17, 18, 19]. The lower levels of health literacy are associated with a lower understanding of the importance of prevention and maintenance, and, consequently, inferior health [20]. The objective of this study was to determine and assessment of frequency and pattern of caries spread in the patients visiting the dental clinics in dentistry department - Hilla university college, Babylon, Iraq.

### **METHODS**

The study was carried out during a period from October 2021 to April 2022 among the patients visiting dental clinics in Dentistry Department - Hilla University College, Babylon, Iraq. It composed of 940 patients (total males 346, total females 578). Hygienic oral status of the patients were examined by the dentists. Examination of caries was performed according to the basic method of oral health survey of WHO [21, 22, 23, 24]. All teeth were examined in a systematic approach starting from the last upper right molar proceeding in an orderly manner from one tooth or tooth space till the last lower right molar, only the carious teeth with cavities were recorded [25, 26, 27]. Also, the data and information regarding gender, residence and blood group of the patients, including the most important factors (dry mouth, filling, denture, smoking, taking corticosteroids, taking antibiotics, taking sweets, brushing teeth, unbalanced dietary and poor oral hygiene) were recorded. These data were collected using pre-tested questionnaire during the mouth examination. Descriptive analysis were computed, such as numerical summary measures, frequencies and proportions.

### **RESULTS**

Generally, a total of 940 patients affected with dental caries that were being more in females nearly two-thirds 578 (62.6 %) and in males nearly one-thirds 346 (37.4 %). Dental caries was lower among respondents who had good oral hygiene status, non-smokers, with blood group AB. In addition, dental caries was higher among urban patients 799 (86.5 %) than rural patients 125 (13.5 %). The table 1 shows the distribution of the patients according to residence (urban or rural) and types of factors that affecting dental caries. The samples of patients compose of 924 participants. Urban 799 (86.5 %) and rural 125 (13.5 %), divided into 10 factors groups. The higher percentages appear in factors: filling 163 (17.6 %), taking sweets 224 (24.3 %), brushing teeth 227 (24.6 %), unbalanced dietary 135 (14.6 %) of the total sample.

The table 2 shows the distribution of the patients according to sex (male or female) and the 10 types of factors that affecting dental caries. Number of male sample is lower than the female ones. Male sample compose of 346 (37.4 %) and female sample compose of 578 (62.6 %). The higher percentages appear in the factors: filling 163 (17.6 %), taking sweets 224 (24.3 %), brushing teeth 227 (24.6 %), unbalanced dietary 135 (14.6 %) of the total sample.

The table 3 shows the distribution of the patients according to blood groups (A, B, AB or O) and the 10 types of factors that affecting dental caries. Group A sample compose of 197 (21.3%), group B sample compose of 247 (26.7%), group AB sample compose of 147 (15.9 %), and group O sample compose of 333 (36.0%) of the total sample. The lower of numbers and percentages of caries were appeared in group AB sample than the other groups that compose of 147 (15.9 %). Also, as in the results of residence and gender the higher cases in AB group were appeared with the factors: filling 23 (2.5%), taking sweets 35 (3.8%), brushing teeth 37 (4.0%), unbalanced dietary 21 (2.3%) of the total sample.

### **DISCUSSION**

Results of this study have shown that participants have suboptimal oral health knowledge and behavior, consistent with other studies [28, 29]. Dental caries is globally the most prevalent chronic disease, practically not sparing the inhabitants of any region. Its early diagnosis is important to prevent it, make population pain free and improve oral and general health. Population have been showing increased frequency of dental caries [30, 31]. Our findings in table 2 indicating that caries frequency in females patients was higher in males than in females, this maybe because of the effect of pregnancy on the integrity of teeth. This is attributed to the irreversibility of the caries process and accumulative nature of the disease. This finding is in agreement with many studies in the developed countries [32]. The most common dental disorder was dental caries among all blood groups. Dental caries were more prevalent in blood group O, followed by B, A, and AB [33, 34, 35].

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## CONCLUSIONS

This study attempted to assess the prevalence and associated factors of dental caries among patients attending the dental clinics in dentistry department - Hilla University College, Babylon, Iraq. It shows that the dental caries is a common disease affecting general population with higher frequency in urban than in rural. In addition, study showed, the prevalence of dental caries was high and found public, knowledge about dental caries, educational status, oral hygiene status, were important predictors of the prevalence of dental caries. Oral health programs should be organized to enhance awareness of improving oral hygiene so as to control and reduce dental caries occurrence. There is a need to educate people about its risk factors and instruct them proper oral hygiene and brushing technique. Lack of education and poor nutrition are among the main causes.

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**Table 1: The effect of patient's residence on dental caries in relation to different factors.**

Types of factors	Residence		Total No. (%)
	Urban	Rural	
Dry mouth	33 (84.6 %)	6 (15.4 %)	39 (4.2 %)
Filling	140 (15.2 %)	23 (2.4 %)	163 (17.6 %)
Denture	19 (2.1 %)	3 (0.3 %)	22 (2.4 %)
Smoking	28 (3.0 %)	4 (0,5 %)	32 (3.5 %)
Taking steroids	15 (1.6 %)	2 (0.2 %)	17 (1.8 %)
Taking antibiotics	33 (3.6 %)	4 (0.4 %)	37 (4.0 %)
Taking sweets	201 (21.8 %)	23 (2.5 %)	224 (24.3 %)
Brushing teeth	202 (21.9 %)	25 (2.7 %)	227 (24.6 %)
Unbalanced dietary	110 (11.9 %)	25 (2.7 %)	135 (14.6 %)
Poor oral hygiene	18 (1.9 %)	10 (1.1 %)	28 (3.0 %)
<b>Total (%)</b>	799 (86.5 %)	125 (13.5 %)	924 (100 %)



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**Table 2: The effect of patient's gender on dental caries in relation to different factors.**

Types of factors	Gender		Total (No. / %)
	Male (No. / %)	Female (No. / %)	
Dry mouth	19 (2.0 %)	20 (2.2 %)	39 (% 4.2)
Filling	55 (6.0 %)	108 (11.6 %)	163 (% 17.6)
Denture	6 (0.6 %)	16 (1.8 %)	22 (% 2.4)
Smoking	30 (3.2 %)	2 (0.3 %)	32 (% 3.5)
Taking steroids	6 (0,6 %)	11 (1.2 %)	17 (% 1.8)
Taking antibiotics	10 (1.1 %)	27 (2.9 %)	37 (% 4.0)
Taking sweet	76 (8.5 %)	148 (15.8 %)	224 (% 24.3)
Brushing teeth	77 (8.3 %)	150 (16.3 %)	227 (% 24.6)
Unbalanced dietary	50 (5.4 %)	85 (9.2 %)	135 (% 14.6)
Poor oral hygiene	17 (1.8 %)	11 (1.2 %)	28 (% 3.0)
<b>Total</b>	<b>346 (37.4 %)</b>	<b>578 (62.6 %)</b>	<b>924 (% 100)</b>

**Table 3: The effect of patient's blood groups on dental caries in relation to different factors.**

Types of factors	Blood groups				Total No. (%)
	A	B	AB	O	
Dry mouth	10 (1.1%)	6 (0.6%)	8 (0.9 %)	15 (1.6 %)	39 (4.2 %)
Filling	34 (3.7%)	42 (4.5%)	23 (2.5%)	64 (6.9%)	163 (17.6%)
Denture	2 (0.2%)	9 (1.0%)	3 (0.3%)	8 (0.9 %)	22 (2.4 %)
Smoking	9 (1.0%)	6 (0.6%)	10 (1.1%)	7 (0.8 %)	32 (3.5 %)
Taking steroids	5 (0.5 %)	4 (0.4 %)	3 (0.3%)	5 (0.5 %)	17 (1.8 %)
Taking antibiotics	14 (1.6%)	13 (1.4%)	6 (0.6%)	4 (0.4%)	37 (4.0 %)
Taking sweet	44 (4.8%)	61(6.6 %)	35 (3.8%)	84 (9.1%)	224 (24.3%)
Brushing teeth	45 (4.9%)	60 (6.5%)	37 (4.0%)	85 (9.1%)	227 (24.6%)
Unbalanced dietary	28 (3.0%)	34 (3.7%)	21 (2.3%)	52 (5.6%)	135 (14.6%)
Poor oral hygiene	6 (0.6%)	12 (1.3%)	1 (0.1%)	9 (1.0%)	28 (3.0%)
<b>Total</b>	<b>197 (21.3%)</b>	<b>247 (26.7%)</b>	<b>147 (15.9 %)</b>	<b>333 (36.0%)</b>	<b>924 (100 %)</b>



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## Developing a Comprehensive Reading Test for Undergraduate Students: An LMS-Based Reading Test



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**ABSTRACT:** There has been a significant increase in the development of reading assessment methods by educators and researchers. However, very few of these assessments have been integrated into a Learning Management System (LMS) platform, with current LMS usage primarily focused on course content delivery. This research aims to address this gap by developing a comprehensive LMS-based reading test to measure students' reading competence. Additionally, the study seeks to explore students' perspectives on the use of the developed instrument. The development of the instrument followed a Research & Development (R&D) approach using the 4D model, which consists of defining, designing, developing, and disseminating stages. The participants of this study were undergraduate English as a Foreign Language (EFL) students from Universitas Madako Tolitoli. In total, 50 reading test items were successfully developed. Both validity and reliability tests were conducted: the validity test was performed by experts in the field and followed by a pilot test with a small sample of students. The results indicated that the test items were reliable, with a Cronbach's Alpha score of 0.75. However, 6 of the items (12%) were deemed to need improvement or were considered invalid, while the remaining 44 items (88%) were judged to be valid. Students' perceptions of the LMS-based reading test were generally positive across three aspects: usability and accessibility, engagement and motivation, and the impact of the LMS on language learning outcomes. In light of the limitations of the current study, suggestions for improvement were also provided. These will serve to guide future research in this area, with the aim of refining the LMS-based reading test and further enhancing its potential benefits for student learning.

**KEYWORDS:** Developing, LMS-based reading, EFL Students, Test.

### INTRODUCTION

Reading assessment is a process that measures an individual's reading skills and abilities. This involves the use of diverse tools and techniques to gauge reading proficiency and identify areas of strength and weakness. Reading assessments, as suggested by Auphan et al. (2020), Stenner (2022), and Støle et al. (2020), can determine a person's reading level, diagnose reading difficulties, monitor progress, and guide instruction. The results can be used to tailor instruction, support student learning, provide targeted interventions, and track progress over time. They can also identify students needing extra support or accommodations, such as those with reading disabilities or English language learners (Stahl et al., 2019; Villesseche et al., 2019).

Recently, a surge in the development of reading assessment methods has been noted among educators and researchers, including Al-Baihaqi (2020), Dalman et al. (2021), Suzanne & Rozimela (2020), and Vidhiasi (2022). However, these studies predominantly employ traditional reading assessment approaches. Boubri & Haddam (2020) note that such standardized assessments can negatively impact learners' comprehension abilities and reading motivation due to their limited scope, often failing to provide a comprehensive understanding of a student's reading skills. Auphan et al. (2020), Shaari & Mohamad (2020), and Toprak-Yildiz (2021) echo this sentiment, noting the partial nature of current assessments. Hence, the need for an approach that can measure comprehensive reading abilities is apparent.

An emerging assessment approach is the online-based reading assessment via a Learning Management System (LMS). LMS-based assessments, delivered and administered through an LMS platform, evaluate a range of reading skills, including phonemic awareness, phonics, fluency, vocabulary, and comprehension (Alneyadi et al., 2023; Main & Slater, 2022). Notably, Katsumata (2022) highlights that LMS platforms can offer personalized learning experiences, including adaptive assessments that adjust question difficulty based on a student's performance. This personalization allows students to work at their own pace, receiving targeted feedback and support. Furthermore, LMS-based reading assessments can align with the specific learning goals

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of a course or program, ensuring the evaluation of the most critical skills for student success. However, there is a scarcity of research reporting the development of LMS-based reading assessments for undergraduate students in the Indonesian context. While the LMS has been widely used for assessments for learning (AFL) (Sabila et al., 2020; Sumardi et al., 2021; Triswidrananta., 2022), these studies have not focused on developing LMS-based assessments as learning (AaL). Thus, the use of LMS in undergraduate education in Indonesia for developing LMS-based reading assessments as learning (AaL) remains largely unexplored, with most LMS usage focused on course content delivery.

To address this gap, we aim to develop a comprehensive reading assessment model that simultaneously assesses multiple aspects of reading, including vocabulary knowledge, inferential and critical thinking, comprehension, and metacognition. Vocabulary pertains to the knowledge of words and their meanings, inferential and critical thinking to the ability to draw conclusions and connect information in the text, comprehension to the understanding and interpretation of written text, and metacognition to the awareness and understanding of one's thought processes during reading. This assessment will be embedded into a learning management system, accessible to both students and teachers. Embedding the reading assessment into the LMS ensures that all students are evaluated using the same materials and criteria, leading to a more standardized and consistent evaluation process. An LMS-based reading assessment also allows for automated grading and feedback, which can save teachers considerable time and effort that can be redirected towards other aspects of the learning process. In summary, the use of an LMS-based reading assessment offers an efficient and effective method for teachers to evaluate their students' reading abilities and progress. Therefore, the research questions of the current study are:

- a. What is the process for developing a comprehensive LMS-based reading test for undergraduate EFL students?
- b. How do students perceive the implementation of an LMS-based reading test?

## METHODOLOGY

### Research Design

This study is part of the Research and Development (R&D) process, which follows the 4-D model proposed by Thiagarajan et al (1974). In this research the 4-D model is adopted to develop an LMS-based reading assessment tool that to measure students' learning outcomes. This model comprised of four steps: defining, designing, developing, and disseminating.

### Participants

The test taker of this study is the English Department Student who enrolled an Extensive Reading course consist of two classes with total 53 students.

### Data Collection procedure and Analysis

The procedure of data collections followed the 4-D model: defining, designing, developing, and disseminating. The **defining** stage is crucial for this study as it sets the foundation for the rest of the process. During this stage, the learning objectives are carefully analyzed to identify the indicators for the test items. These indicators provide a clear understanding of which of the students' abilities should be assessed in line with the reading subject they have completed. In the **designing** stage, the test items are created based on the learning objectives and their indicators. The number of items for each indicator is determined, and the types of questions that will be used are decided upon. This stage requires careful consideration to ensure that the test items align with the learning objectives and are relevant to the students' reading abilities. During the **developing** stage, the assessment tool is validated to ensure its reliability and validity. The validation process is performed in two stages, content validity and construct validity, by experts in the field. Content validity ensures that the assessment tool covers all the necessary content related to the learning objectives, while construct validity ensures that the assessment tool measures what it is intended to measure. Once the validation process is complete, the media is tested on a number of participants to ensure that it is functioning as intended. The participants are then given a questionnaire to provide feedback on their experience with the reading LMS-based assessment. This feedback is used to further improve the assessment tool and ensure that it is effective in measuring students' learning outcomes. Finally, in the **dissemination** stage, the developed assessment tool is shared with a specific group of students, known as a cohort. This group is carefully selected to ensure that it is representative of the overall student population and that the assessment results accurately reflect the learning outcomes of the entire student body. The assessment tool is distributed to each student in the cohort, and they are given clear instructions on how to complete it. Once the students had completed the LMS-based reading test, an open-ended questionnaire was distributed.

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## FINDINGS AND DISCUSSIONS

### Findings

#### RQ 1: What is the process for developing a comprehensive LMS-based reading test for undergraduate EFL students?

To answer the first research question, the following stage were presented consisting of defining, designing, developing and disseminating.

**Defining Stage** At this phase, the learning objective are meticulously examined to pinpoint the criteria for the exam components. These criteria offer a distinct comprehension of which skills of the students should be evaluated, consistent with the reading topic they have recently finished. In other words, the learning objective is use as guidance to develop the test items. The learning objective can be shown as follows: *The students will be able to analyze information about reading topics, apply critical thinking skills to synthesize information, and demonstrate comprehension and knowledge related to various topics at the end of the course.* The learning objective were then broken down in some indicators. Those are knowledge and comprehension, analysis and interpretation, and application and synthesis. Knowledge and comprehension are the foundational skills in reading achievement. These skills involve the ability to understand and remember information presented in a text. Questions that assess knowledge and comprehension usually ask students to recall information, define key terms or concepts, or identify details in a text. Analysis and interpretation are higher-order thinking skills that require students to go beyond simple recall and understand the deeper meaning of a text. These skills involve the ability to identify themes, make connections, draw inferences, and evaluate the author's arguments or perspective. Application and synthesis are the highest-order thinking skills in reading achievement. These skills involve the ability to take what students have learned and apply it to new situations or contexts. This includes the ability to solve problems, make decisions, and create new ideas or products.

#### Designing Stage

After successfully identifying the learning objectives (LO) and their corresponding indicators, we proceeded to create the test items in this stage. We developed a total of 50 items, meticulously designed to reflect the predetermined learning objectives. These items were composed of a diverse set of question types: 30 multiple-choice questions, 10 true-or-false questions, and 10 fill-in-the-blank questions. Each question was carefully aligned with the established indicators, ensuring that the test provided a comprehensive evaluation of the learner's understanding. The table below provides a detailed illustration of how the blue print items are distributed based on the corresponding indicators:

**Table 1. The distribution of items based on the LO indicators**

Indicators	Number of Questions
Knowledge and comprehension	1,2,3,4,15,8,9,10,26,30,34,36,37,38,39,40
Analysis and interpretation	13,6,11,12,5,27,28,31,17,19,41,42,46,48
Application and synthesis	7,14,29,32,35,16,18,20,21,43,45,47,49,50

#### Developing

The procedure at that stage involved several activities. Firstly, we had uploaded 50 constructed test items to a Learning Management System (LMS), which was selected for its ease of implementation in online assessments and the certainty of its responses. This platform had enabled participants to select or click on what they perceived to be the best or most correct answer. Crucially, the system automatically corrected the participant's answer, comparing it to the correct answer key.

Once all the items had been integrated into the LMS, we sent a test link access to three validators, specifically reading course lecturers, for validation. This validation was based on various indicators related to construct and content validity. Validators were tasked with evaluating each test item on a scale of 1 to 4, where 1 signified 'very invalid,' 2 'invalid,' 3 'valid,' and 4 'very valid.' The results of this validation process were presented below.

**Table 2. The result of Validation from 3 Lecturers (i.e., Reading Course Lecturers)**

Aspects	Indicators	Very invalid	invalid	Valid	Very valid	Category
<b>Construct Coverage</b>	The item perfectly reflects the construct it is intended to measure.	0	0	1	2	Valid

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<b>Content Relevance</b>	The item is completely relevant to the skill being assessed.	0	0	1	2	Valid
<b>Test Clarity</b>	The item is completely clear, concise, and easy to understand.	0	0	2	1	Valid
<b>Scoring System</b>	The scoring system is clear, objective, and perfectly aligned with the test's purpose.	0	0	1	2	Valid

In accordance to the table above, most aspects have been evaluated as 'Valid' or 'Very Valid', with 'Very Valid' being the most common rating. This indicates a high degree of confidence in the quality and relevance of the item or test. Construct Coverage, Content Relevance, and Scoring System have an equal distribution of 'Valid' and 'Very Valid' scores, suggesting that these aspects are perceived to be equally well-executed in the item or test. Test Clarity has a slightly higher 'Valid' score compared to 'Very Valid', suggesting that while the test is clear. Overall, the item or test appears to be highly valid and reliable, reflecting well on its construct, relevance, clarity, and scoring system.

After the reading course lecturers completed the validation activity, we conducted a pilot test with a small sample of students, comprised of 25 individuals. The results of this pilot test are presented as follows:

**Table 3. The result of Validity based on Person Correlation**

No. Item	Pearson Correlation	Sig. Value (0.05 two tails)	Interpretation	Participants	
1	0.815	0.000	--	Valid	25
2	0.712	0.000	-	Valid	25
3	0.525	0.023	-	Valid	25
4	0.815	0.000	-	Valid	25
5	0.652	0.008	-	Valid	25
6	0.721	0.000	-	Valid	25
7	0.812	0.000	-	Valid	25
8	0.815	0.000	-	Valid	25
9	0.735	0.000	-	Valid	25
10	0.721	0.000	-	Valid	25
11	0.521	0.025	-	Valid	25
12	0.525	0.028	-	Valid	25
13	0.613	0.004	-	Valid	25
14	0.630	0.009	-	Valid	25
15	0.421	0.203	Not Valid	-	25
16	0.815	0.000	-	Valid	25
17	0.782	0.000	-	Valid	25
18	0.815	0.000	-	Valid	25
19	0.532	0.000	-	Valid	25
20	0.521	0.000	-	Valid	25
21	0.725	0.000	-	Valid	25
22	0.321	0.721	Not Valid		25
23	0.782	0.000	-	Valid	25
24	0.632	0.009	-	Valid	25
25	0.512	0.000	-	Valid	25
26	0.521	0.000	-	Valid	25

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27	0.720	0.000	-	Valid	25
28	0.815	0.000	-	Valid	25
29	0.723	0.000	-	Valid	25
30	0.412	0.814	Not Valid	-	25
31	0.812	0.000	-	Valid	25
32	0.845	0.000	-	Valid	25
33	0.744	0.000	-	Valid	25
34	0.812	0.000	-	Valid	25
35	0.815	0.000	-	Valid	25
36	0.720	0.000	-	Valid	25
37	0.512	0.023	-	Valid	25
38	0.321	0.721	Not Valid	-	25
39	0.723	0.000		Valid	25
40	0.412	0.814	Not Valid	-	25
41	0.815	0.000	-	Valid	25
42	0.734	0.000	-	Valid	25
43	0.812	0.000	-	Valid	25
44	0.813	0.000	-	Valid	25
45	0.723	0.000	-	Valid	25
46	0.521	0.020	-	Valid	25
47	0.532	0.000	-	Valid	25
48	0.421	0.203	Not Valid	-	25
49	0.671	0.008	-	Valid	25
50	0.512	0.023	-	Valid	25
<b>Total</b>			<b>6 (12%)</b>	<b>44 (88%)</b>	

**Note: If the Sig. Value < 0.05 then the items were categorized as valid**

Based on the table above it is clearly that most of items (44 out of 50) or (88%) were valid and only small number of items (6 out of 50) or (12%) were invalid. It means that the majority of the data collected or processed were of good quality and usable for further analysis or operations. This high validity rate of 88% indicates a well-structured and efficiently executed data collection or production process. However, the presence of 12% invalid items suggests that there's still room for improvement in the system, whether it is in data collection, data entry, or product quality control. Therefore, we identify the sources of these errors and implement necessary corrective measures to improve the quality of the invalid items. Even though a few items were found to be invalid, the reliability of the items, as determined by Cronbach's alpha, indicated that they were reliable. The specifics of this reliability assessment are displayed in the table below:

**Table 4. Reliability result based on Cronbach's Alpha**

Reliability Statistics	
Cronbach's Alpha	N of Items
.757	50

The Cronbach's Alpha value of 0.757 suggests that the 50-item test has good internal consistency, meaning that the items on the test are closely related as a group. Cronbach's Alpha values range from 0 to 1. A higher value indicates higher reliability, and a commonly accepted threshold for good internal consistency is 0.7 or above. Therefore, with a value of 0.757, the test items show a satisfactory level of reliability.

### Dissemination

In the dissemination stage, the full developed and revised assessment tool is shared with a specific group of students, namely the second-year EFL students at the English Department of Universitas Madako Tolitoli. The group comprises a total of 53 students, all enrolled in extensive reading course. This group has been carefully selected to ensure it is representative of the overall student

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population, and to guarantee that the assessment results accurately reflect the learning outcomes of the entire student body. Each student is individually invited to log into their LMS account to access the reading test. They are supplied with clear instructions on how to complete the test.

### RQ 2. How do students perceive the implementation of an LMS-based reading test?

Once the students have completed the LMS-based reading test, an open-ended questionnaire is distributed. This questionnaire consisted of three themes: Usability and Accessibility, Engagement and Motivation, and Learning Outcomes and Feedback. Furthermore, it is designed to capture the students' attitudes towards the implementation of the LMS-based reading test.

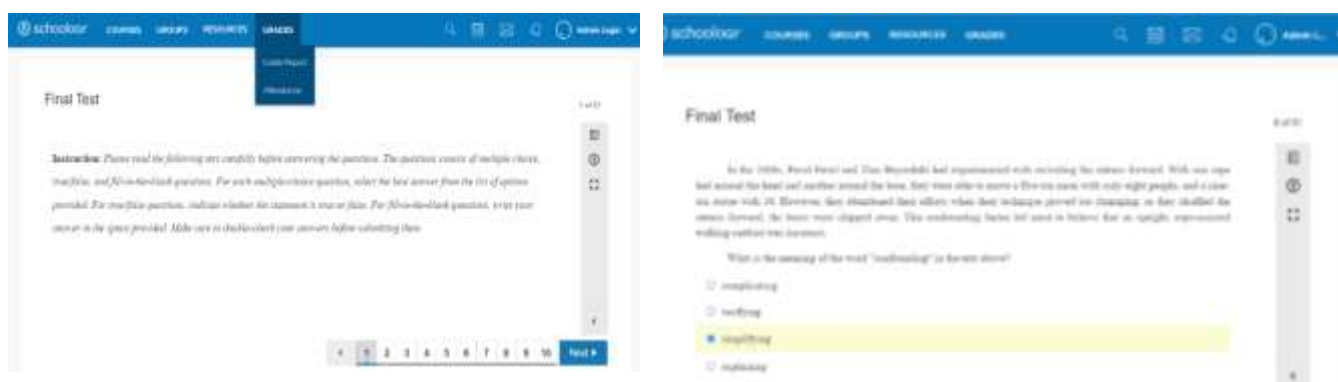
The result of the questionnaire displayed below:

**Table 5. Usability and Accessibility**

No	Statement	Criteria					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1	I found the LMS-based reading test easy to navigate and use.	1	2	7	19	24	53
2	The LMS-based reading test was accessible and user-friendly, regardless of my tech proficiency.	1	2	5	20	25	53
<b>Total</b>		2	4	12	39	49	106
<b>Percentage</b>		1.9%	3.8%	11.3%	36.8%	46%	100%

In accordance with the data provided, the majority of respondents agree or strongly agree with the statements regarding the usability and accessibility of the LMS-based reading test (83.8%), signifying a largely positive perception of this technology in language learning. Neutral responses account for 11.3% of the total, while a smaller portion of respondents disagree or strongly disagree (5.7% combined).

In summary, the data reveals a robust positive perception of the role of the LMS-based reading test in language learning, particularly in terms of usability, accessibility, and ease of navigation. Respondents generally view this tool as an effective aid in their language learning process, contributing to a more efficient and user-friendly learning experience. The data suggests that students generally found the LMS-based reading test easy to navigate and use, and accessible irrespective of their technological proficiency. The following figure is the example appearance of LMS-based reading test:



**Figure 1. Example of appearance of the LMS-based reading test**

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Table 6. Engagement and Motivation

N o	Statement	Criteria					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
3	The format and content of the LMS-based reading test engaged me and motivated me to learn.	1	3	5	15	29	53
4	The LMS-based reading test provided a variety of reading materials that kept me interested	1	2	7	18	25	53
<b>Total</b>		2	5	12	33	54	106
<b>Percentage</b>		1.9%	4.7%	11.3%	31.1%	50.9%	100%

According to the data provided, the majority of respondents agree or strongly agree with the statements concerning the engagement and motivation offered by the LMS-based reading test (82%), indicating a predominantly positive perception of the test's ability to sustain interest and stimulate learning. Neutral responses account for 11.3% of the total, while a smaller fraction of respondents disagree or strongly disagree (6.6% combined).

In summary, the data reveals a strong positive perception of the role of the LMS-based reading test in fostering engagement and motivation in language learning, particularly in terms of diverse content and an engaging format. Respondents generally view this tool as a significant aid in maintaining their interest and motivating their learning efforts. The data suggests that students generally found the variety of reading materials and the format of the LMS-based reading test effective in keeping them engaged and motivated in their learning process. The following figure illustrate the text question appearance.



Figure 2. Various text appearance on student test LMS

Table 7. Learning Outcomes and Feedback

N o	Statement	Criteria					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
5	The LMS-based reading test effectively assessed my reading comprehension skills.	1	3	5	19	25	53
6	The feedback I received after the LMS-based reading test	1	1	7	17	27	53

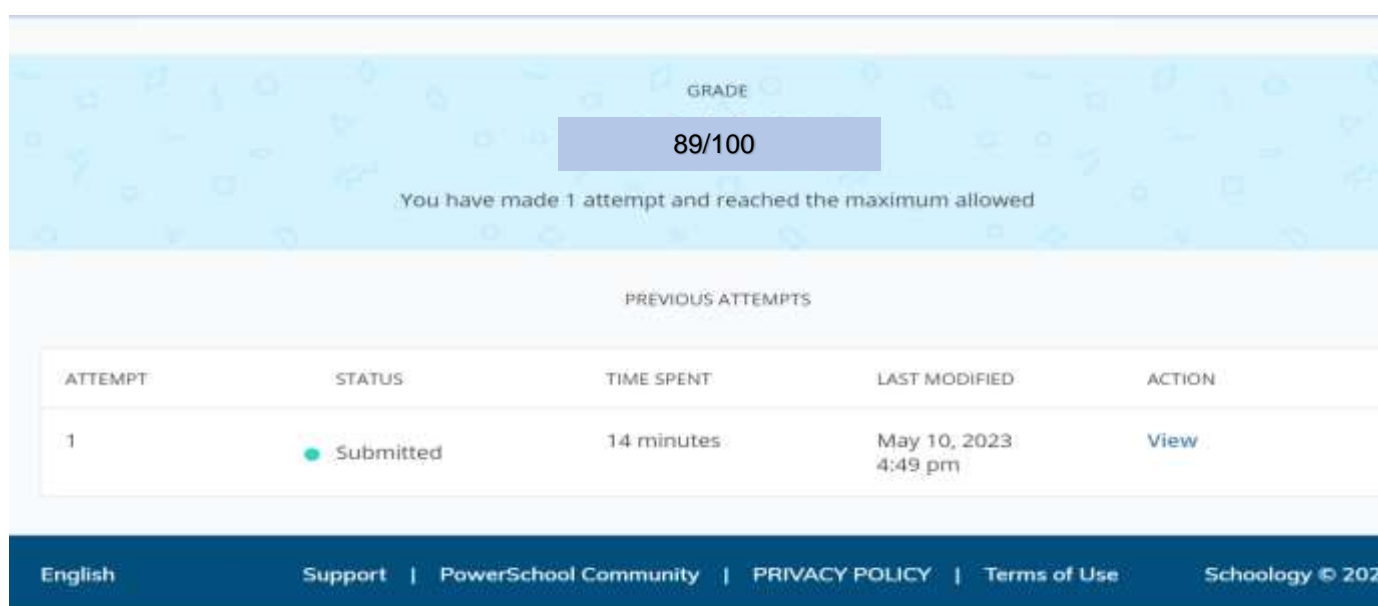


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	was clear, timely, and helped me in my learning process.					
<b>Total</b>	2	4	12	36	52	106
<b>Percentage</b>	1.9%	3.8%	11.3%	33.9%	49.1%	100%

Based on the data provided, a significant majority of respondents agree or strongly agree with the statements about the effectiveness of the LMS-based reading test in assessing their reading comprehension skills and providing valuable feedback (83%), indicating a strongly positive perception of the test's role in their learning process. Neutral responses account for 11.3% of the total, while a smaller proportion of respondents disagree or strongly disagree (5.7% combined).

In summary, the data reveals a robust positive perception of the role of the LMS-based reading test in enhancing learning outcomes, particularly in terms of effectively assessing reading comprehension and providing clear, timely feedback that aids learning. Respondents generally view this tool as highly effective in assessing their skills and providing valuable feedback, thereby contributing to better learning experiences and outcomes. The data suggests that students generally found the LMS-based reading test useful in evaluating their reading comprehension and appreciated the feedback received post-test for its clarity and timeliness. The following figure is the example of direct feedback soon after the test is submitted



**Figure 3. Score feedback of the reading test**

### DISCUSSIONS

The escalating dependence on Learning Management Systems (LMS) for developing and administering tests, as showcased in this study, is gaining traction in the field of educational technology. The compelling results of this study, with a remarkable validity rate of 88% for test items, echo the findings of prior research, further consolidating the notion that digital platforms are efficacious tools for educational assessment (Saiyad, et al., 2020). This aligns with the work of Jokhan et al. (2022), who found that the use of LMS in the educational setting improved the quality of student assessment and allowed for more efficient tracking of student progress. Similarly, Alkinani and Alzahrani (2021) highlighted that an LMS not only supports course management but also provides a robust platform for assessing student learning, further substantiating the findings of this study. Moreover, the use of LMS for testing purposes is in line with the trend of digital transformation in education as identified by Mintii et al. (2020). They argued that LMS can offer an effective and scalable method for assessing a large number of students, thereby streamlining the assessment process.

The procedure employed in this study, involving expert evaluations and pilot testing to refine and validate the test items, is in line with best practices recommended by renowned scholars such as Yang et al. (2021). Yang's work emphasizes the importance of pilot testing and expert review in enhancing the validity of test items, thereby improving the overall quality of assessments. This approach is also supported by the research of Hasim et al. (2022), who stated that expert judgment and pilot testing are key to developing high-quality test items, ensuring they accurately measure the intended learning outcomes. The use of Cronbach's Alpha to determine the reliability of the test items, as conducted in this study, is a standard procedure in the realm of educational

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assessment, further grounding this study in established literature (Nayahangan et al., 2020). The application of Cronbach's Alpha for reliability assessment is also consistent with the research of Sürücü and Maslakçi (2020), who emphasized the utility of this statistical tool in ensuring the internal consistency of test items. Similarly, Adeniran (2019) suggested that Cronbach's Alpha is a reliable measure for evaluating the internal consistency of a test, which is crucial to understanding the reliability of the test results.

The favorable perception of the LMS in terms of usability and accessibility in this study aligns with the findings of Shukla et al. (2020). Their research highlighted the importance of user-friendly and accessible interfaces in educational technologies, arguing that these aspects significantly enhance user experience and learning outcomes. This notion is further supported by the work of Elmunsyah et al. (2023), who found that an easy-to-use and intuitive interface significantly influences the users' satisfaction and continued use of an LMS. Their study underscores the importance of user-centered design in the development of educational technologies. In a similar vein, the research of Nguyen (2021) underscores the significance of accessibility in digital learning environments. Their findings suggest that a more accessible LMS contributes to improved student performance and higher levels of student satisfaction. Alkinani and Alzahrani (2021) have also underlined the influence of usability on the success of an LMS. They concluded that high usability can enhance learner engagement and promote a positive learning experience. Their work elucidates that the ease of use of an LMS can impact learners' attitudes towards learning, their motivation, and their overall academic success.

The elevated levels of student engagement and motivation observed in this study align with the conclusions of Berestova et al. (2022). They underscored the significance of diverse and captivating content in maintaining student interest and motivation within digital learning environments. This observation is further supported by the work Ustun and Yilmaz (2021). Their research found that engaging content in an LMS can foster a sense of community among students, thereby increasing their motivation to participate and engage with the course materials. Similarly, Larmuseau and Depaepe (2019) highlighted that student engagement in online learning environments is significantly influenced by the level of interactivity and the quality of the content provided. He asserted that well-designed, engaging content can stimulate online participation, leading to higher levels of student motivation and learning outcomes.

The observation that the LMS-based reading test in this study was considered a valuable tool for assessing reading comprehension and providing meaningful feedback aligns with the findings of Rivers et al. (2022). They underscored the crucial role of timely and effective feedback in promoting self-regulated learning and enhancing academic performance. This viewpoint is further corroborated by the research of Kucher (2021) who posits that well-designed feedback in digital learning environments can significantly improve student learning. According to Kucher, effective feedback not only rectifies misunderstandings but also reinforces learning, thus playing a crucial role in the learning process. Similarly, Wisniewski et al. (2020) argued that feedback is among the most powerful influences on learning and achievement. Their work suggests that feedback, when done right, can dramatically improve student performance and motivation. In addition, research by Qadir et al. (2020) emphasized the importance of feedback in formative assessment, stating that it is vital for learners to understand their current performance and how they can improve. This aligns with the findings of this study, where the LMS-based reading test provided useful feedback, allowing students to improve their reading comprehension skills.

In conclusion, this study enriches the expanding corpus of research on LMS-based assessment, affirming and building upon findings from previous research. It emphasizes user perception, enhancing our understanding of the acceptability and usability of digital tools in education, a topic of paramount importance in this digital learning age. It suggests that the LMS-based reading test, with its user-friendly design, engaging content, and effective feedback mechanisms, can be an invaluable tool in language learning environments.

### CONCLUSION

The aim of this study was to develop a Learning Management System (LMS)-based reading test to gauge students' reading proficiency and gather their perceptions about the implementation of this novel, LMS-based test. The development process for this reading test adhered to the 4-D model proposed by Thiagarajan et al (1974), which includes defining, designing, developing, and disseminating. Subsequently, 50 reading items were successfully crafted and integrated into the LMS platform. These items underwent a rigorous validation process involving specialists in the field, specifically reading course lecturers, who affirmed their valid construction. Furthermore, the items were subjected to a Cronbach's Alpha reliability test, which confirmed that the test was indeed reliable, thus supporting the integrity of our instrument. Pilot testing of these items revealed that 88% were suitable for use, while 12% required further revision. After adjusting the items as needed, the fully developed instrument was distributed to 53 undergraduate English as a Foreign Language (EFL) students at Universitas Madako Tolitoli. In tandem, a questionnaire was provided to assess the students' attitudes towards the implementation of the instrument. Their responses indicated a positive

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perception of the LMS-based reading test, especially in terms of its usability and accessibility, engagement and motivation, and the impact of the LMS on language learning outcomes.

However, the study does have its limitations. The sample size was relatively small and the study was limited to a single university, which may not represent the entire population of EFL students. Additionally, the perception of students may vary based on their individual learning styles and preferences, which was not accounted for in this study. To address these limitations, future research should include a larger and more diverse sample size drawn from multiple institutions to ensure broader applicability. Also, it would be beneficial to consider individual learning styles and preferences in future studies to better understand the varying student perceptions of LMS-based reading tests.

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## Optimization of Leg Muscle Power, Emotional Intelligence, and Achievement Motivation to Improve Football Performance



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**ABSTRACT:** This study aims to reveal the effect of exogenous variables directly, causally and simultaneously on endogenous variables. This research method is a quantitative method using an ex-post facto research design. The sample in this study were SSB Putra Lintas Buno Jambi players aged 13-15 years. Sampling was done by purposive sampling technique. The data analysis technique used is path analysis. The results of the study showed that 1) There was a direct effect of leg muscle power on the shooting ability of the men's cross-bungo Jambi football. 2) There is a direct effect of emotional intelligence on the ability to shoot football in the men's cross Bungo Jambi. 3) There is no direct effect of achievement motivation on the ability to shoot football in the men's cross bungo Jambi. 4) There is no indirect effect of leg muscle power on the ability to shoot football through achievement motivation in male SSB players across Bungo Jambi. 5) There is no indirect effect of emotional intelligence on the ability to shoot football through achievement motivation in male SSB players across Bungo Jambi. 6) There is a simultaneous and significant effect of leg muscle power, emotional intelligence and achievement motivation on the ability to shoot football in the male cross-bungo Jambi cross-bungo Jambi.

**KEYWORDS:** Leg muscle power, wmotional intelligence, achievement motivation and football shooting ability

### I. INTRODUCTION

Sport is a series of physical and psychological activities carried out by humans consciously and is very useful for treating and improving the quality of health of the human body, so that the sustainability of daily human life can run well, without any significant obstacles or disturbances. According to (Ilham, 2014) "Sport is a systematic process in the form of all activities or efforts that can encourage developing, and fostering one's physical and spiritual potentials as individuals or members of society in the form of games, competitions / competitions, and peak achievements in the formation of quality Indonesian people based on Pancasila". A nation will prosper if its people have good health, because good health is the main foundation in activities.

This is as contained in Law Number 11 of 2022 concerning the National Sports System. The government's objectives in the field of sports are contained in Chapter II Article 4 which reads "Maintain and improve health and fitness, achievement, intelligence, and human quality, instill moral values and noble morals, sportsmanship, competitiveness, and discipline, strengthen and foster national unity and unity, strengthen national resilience, raise the dignity, dignity, and honor of the nation, maintain world peace". There are various fields of sports achievements, one of which is football. Football continues to show a strong appeal to society.

Along with the popularity of football and to improve achievements, the Indonesian Football Association (PSSI) has implemented various programs including organizational arrangement, coach training, refereeing upgrades, sending local players to train abroad. The target of all activities carried out by PSSI is for the birth of talented and outstanding athletes who are able to raise the image of Indonesian football at the national and international levels. According to (Wicaksono, 2015) the quality of students can be explored optimally through systematic sports coaching, coaching is carried out with the intention of making someone from initially unprofessional to become a professional athlete.

From the observations and interviews, it can be seen that players still have difficulty scoring goals or shooting the ball towards the goal (shooting). According to (Taylor, 2016) "to have good shooting skills also requires courage, confidence, a touch of selfishness, and imagination", describing that when shooting players must have a good mentality and have a strong

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imagination so that the ball is kicked. Meanwhile, (Bahtra, 2022) "Players are required to have both leg muscles well to shoot in various situations so that they can shoot hard and accurately". Based on the opinion above, in order to have good shooting skills, players need to have mentality, imagination and also leg muscle power so that the direction of the kick is strong and accurate.

Similar to this, there are several factors that affect the shooting ability of men's football players when conducting training sessions and competing, it can be seen that there are still many players who do not have good leg muscle power, emotional intelligence that has not been controlled and also the motivation to excel in training is still not visible so it is difficult to score goals, because at the time of kicking on goal it is still not perfect so that at the time of kicking When shooting on goal, it is often off target or not on target to the goal.

Power or explosive power the ability to cope with loads with very high contraction speeds into a short time. According to (Khasan, 2023) explosive power is the ability to produce maximum power in a limited time, so explosive power is also a combination of two abilities, namely speed and power to release large power in a short time. Meanwhile, according to (Nadira & Yendrizal, 2022), leg muscle power is the ability to produce large amounts of power with limited time derived from contraction of the skeletal muscles (body) of the lower limbs. Based on the above opinion, it can be concluded that in the game of football, by having good leg muscle power, players can make hard kicks into the goal in an attempt to score goals.

While in the mental sphere, one of them also requires emotional intelligence. According to (Muttaqin & Khoirul, 2020) emotion is a complex form of organism, involving physical changes of a broad character in breathing, pulse, glandular production, and from a mental point of view is a state of pleasure or anxiety, characterized by the presence of strong feelings and usually impulses in the tangible form of a behavior. Meanwhile, according to (Permadi, 2021) emotional intelligence (EQ) is the ability to recognize our own feelings and the feelings of others, manage our emotions and build relationships with others, and motivate ourselves.

Based on the above opinion, someone who is difficult to control his emotions, will not be able to think well or think wisely, regardless of high IQ and CQ (creatif quotient). In a match, both intelligences are indispensable. IQ cannot function properly without the participation of emotional passion by the player in the course of a match. But usually the two intelligences complement each other. Based on this explanation, it can be interpreted that to support performance in shooting in football games, players must have good emotional intelligence, when in difficult positions players will remain optimal in shooting towards the goal as targeted.

One of the psychological aspects that influence the increase in football player achievement is achievement motivation. According to Damanik, (2020) explains that "motivation is an impulse that arises in a person to behave. This drive is in the individual who is the driving force to do something, for example the drive to learn, the drive to achieve or the drive to work. Meanwhile, according to (Sujarwo, 2021) achievement motivation is the desire, desire, will, and driving force to be able to excel, namely to surpass achievements that have been achieved or those achieved by others. Based on this opinion, achievement motivation is a very important object in sports, which encourages players to be more enthusiastic about improving their abilities and passing the achievements they have achieved. However, each player has different achievement motivation from one another, some have high achievement motivation and some have low achievement motivation. Players who have high achievement motivation will always act according to what they achieve and always want the best, while players who have low achievement motivation will certainly find it difficult to achieve optimal performance. Based on the description above, the author is interested in conducting research and discussing more deeply about the direct or indirect influence of Leg Muscle Power, Emotional Intelligence, and Achievement Motivation on the Football Shooting Ability of Male Football School (SSB) Players across Bungo Jambi Regency.

## **II. MATERIAL AND METHODS**

The research method used in this study is a quantitative method using an ex-post facto research design. In the ex-post facto study there was no control group or pre-test activity. The cause and effect relationship between one subject and another subject is not manipulation, because ex-post facto research only reveals symptoms that exist or have occurred. The facts in this study are revealed as they are from the collected data. While the analysis technique uses a path analysis approach, which is a technique to analyze the causal influence that occurs in multiple regression if the independent variable affects the dependent variable both directly and indirectly.

The sample in this study was 25 U13-U15 players of the Putra Lintas Bungo Jambi Football School (SSB). Sampling is carried out using purposive sampling techniques, according to Sugiyono (2021: 288) that: "purposive sampling is a sampling technique for data sources with certain considerations that aim to make the data obtained more representative". The data analysis technique used is path analysis, according to Kadir (2017: 241) "Path analysis is an analytical technique used to study the causal

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relationship between independent variables and non-free variables. Causal relationships are arranged in the form of hypothetical models based on scientific substance, namely the theoretical basis or experience of researchers".

### III. RESULTS AND DISCUSSION

#### 1) Football Shooting Ability

Variable data on Football Shooting Ability was collected through football shooting tests on 25 players who were sampled. From the results of measurement and data management, it can be seen that the highest Football Shooting Ability value that can be achieved is 14 and the lowest is 8. Furthermore, the average value (mean) of 10.68 was obtained. From the measurement of Football Shooting Ability, a standard deviation of 1.76 is obtained. The distribution of data on the Football Shooting Ability of SSB Putra Lintas Bungo Jambi players based on the average and standard deviation can be seen in the table below:

**Table 1. Frequency Distribution Football Shooting Ability (Y)**

No	Interval	Frekuensi Absolut (Fa)	Relative Frequency (Fr %)	Classification
1	8 – 9	7	28%	Less Than Once
2	10 – 11	11	44%	Less
3	12 – 13	5	20%	Enough
4	14 – 15	2	8%	Good
5	16 – 17	0	0%	Very Good
<b>Sum</b>		<b>25</b>	<b>100%</b>	

#### 2) Power leg muscles

Variable data on Leg Muscle Strength was collected through tests using the Standing Long Jump Test on 25 players who were sampled. From the results of measurement and data processing, an average value of 2.2596, a standard deviation of 0.0534, a high value of 2.37 and a lowest value of 2.17. The distribution of the results of the Limb Muscle Power data of the SSB Putra Lintas Bungo Jambi Football Player can be seen in the following table:

**Table 2. Frequency Distribution of Leg Muscle Power of Football Players (X1)**

No	Interval	Frekwensi Absolut (Fa)	Relative Frequency (Fr %)	Classification
1	2.17 - 2.21	6	24%	Less Than Once
2	2.22 – 2.26	7	28%	Less
3	2.27 – 2.31	9	36%	Enough
4	2.32 – 2.36	2	8%	Good
5	2.37 – 2.41	1	4%	Very Good
	<b>Sum</b>	<b>25</b>	<b>100%</b>	

#### 3) Emotional Intelligence

Data on Emotional Intelligence variables were collected using a likert questionnaire test on 25 players who were sampled. From the results of measurement and data processing, an average value of 174.96, a standard deviation of 17.5373, the highest value of 217 and the lowest value of 148 were obtained. The distribution of the results of the Emotional Crdasan data of SSB Putra Lintas Bungo Jambi Football Players can be seen in the following table:

**Tabel 3. Distribusi Frekuensi Kecerdasan Emosional (X2)**

No	Interval	Frekwensi Absolut (Fa)	Relative Frequency (Fr %)	Classification
1	148 -161	6	24%	Less Than



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				Once
2	162 - 175	8	32%	Less
3	176 - 189	6	24%	Enough
4	190 - 203	3	12%	Good
5	204 - 217	2	8%	Very Good
<b>Sum</b>		<b>25</b>	<b>100%</b>	

### 4). Achievement Motivation

Data on the Achievement Motivation variable was collected using a likert questionnaire test on 25 players who were sampled. From the results of measurement and data processing, an average value of 203.2, a standard deviation of 24.5161, the highest value of 238 and the lowest value of 167. The distribution of the results of the Achievement Motivation data for SSB Putra Lintas Bungo Jambi Football Players can be seen in the following table:

**Tabel 4. Distribusi Frekuensi Motivasi Berprestasi (X3)**

No	Interval	Frekuensi Absolut (Fa)	Relative Frequency (Fr %)	Classification
1	167 - 181	6	24%	Less Than Once
2	182 - 196	4	16%	Less
3	197 - 211	4	16%	Enough
4	212 - 226	5	20%	Good
5	227 - 241	6	24%	Very Good
<b>JSum</b>		<b>25</b>	<b>100%</b>	

## IV. DISCUSSION

### 1. The Direct Influence of Leg Muscle Power on the Football Shooting Ability of SSB Putra Lintas Bungo Jambi Players

In the results of path analysis calculations, it was found that there was a direct effect. In the calculation results of path analysis, it was found that there was a direct effect of Leg Muscle Power (X1) on Football Shooting Ability (Y) ( $\rho_{yx1}$ ) = 0.418 and a significance value (sig) = 0.012 which is more smaller than the probability value ( $\alpha$ ) = 0.05. It turns out that the path of the direct influence of Leg Muscle Power on the Shooting Ability of the Men's SSB Cross Bungo Jambi Players is 17.4%, which means it is proven and acceptable. The test results are in accordance with the study of the theory, the theoretical framework and the hypotheses put forward in this study. The results of this study can be accepted empirically. Power is the ability of a muscle or group of muscles to withstand a load or receive a load in carrying out an activity or work, such as the ability of the leg muscles to overcome the pressure or load caused by the activities of a player in taking a goal kick.

The effect of Leg Muscle Power on the Football Shooting ability of SSB Putra Lintas Bungo Jambi Players is 17.4%. While the remaining 82.6% is influenced by other factors. Other factors that can affect football shooting ability are usually such as spasticity, foot dead coordination and so on. The results of these findings confirm the theory and conceptual that have been described before, so it can be said that Leg Muscle Strength is very important for a football player in shooting, because without good Leg Muscle Strength it is impossible for a player to realize his ability to shoot football.

Football is a sport that requires good physical condition, one of these physical condition abilities is explosive power or power. According to (Karola & Padli, 2019) explosive power is important for a football athlete to have because an athlete is required to be able to run fast, kick the ball, and jump when dueling in the air, all of which require very large muscle performance in playing soccer, especially the performance of leg muscles. Meanwhile, according to (Sarifudin et al., 2023) Leg muscle power plays an important role in shooting football, so to produce good shooting accuracy, one way is to have good leg muscle power. So if the leg muscle power of a soccer player is good, then the ball will help in shooting quickly and strongly towards the goal at the desired target. On the other hand, players who have low leg muscle power will not be able to shoot at goal optimally.

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### **2. Pengaruh Langsung Kecerdasan Emosional terhadap Kemampuan *Shooting* Sepakbola Pemain SSB Putra Lintas Bungo Jambi**

In the calculation of the path analysis, it was found that there was a direct influence of Emotional Intelligence (X2) on Football Shooting Ability (Y) ( $\beta_{yx2} = 0.556$  and significance value ( $\text{sig} = 0.002$  which was smaller than the probability value ( $\alpha = 0.05$ ). It turns out that emotional intelligence has a direct and significant effect on football shooting ability.

Based on these findings, the hypothesis proposed in this study is accepted empirically. It can be interpreted that good Emotional Intelligence has a relationship and influence in shooting football. The Effect of Emotional Intelligence on the Football Shooting Ability of SSB Putra Lintas Players by 30.9%. While the remaining 69.1% was influenced by other factors.

(Muttaqin & Khoirul, 2020) "In a football match, players are required to always focus and concentrate during the match. Players who do not have good emotional intelligence will more often make mistakes such as making unnecessary fouls, accuracy of passing or shots that are not on target, and are not able to work together better so that the negative impact caused not only affects himself but also the team". From this explanation, it can be understood that emotional intelligence is needed so that a player to stay focused and concentrated during the match and of course when under pressure by opposing players, the player still remains calm and can control emotions so that it is still optimal in kicking towards the goal or shooting.

Based on the description above, it can be concluded that players who have good emotional intelligence will be able to manage emotions, thoughts and behaviors when playing football even in difficult situations, so that they can control the game and can shoot hard towards the goal and right on the desired advice.

### **3. Pengaruh Langsung Motivasi Beprestasi terhadap Kemampuan *Shooting* Sepakbola Pemain SSB Putra Lintas Bungo Jambi**

In the calculation of the path analysis, the direct effect of Achievement Motivation (X3) on Football Shooting Ability (Y) was found that  $H_a$  was rejected. This means that there is no direct influence of Bprestasi Motivation on Football Shooting Ability in SSB Putra Lintas Bungo Jambi players.

According to (Naibaho, 2017) "achievement motivation can be expressed as a driving force for an activity and a person's behavior in carrying out an activity so that it becomes better, faster, more effective, and more efficient than the activities carried out previously, and as a force that makes a person able to carry out an activity for a long time, which in essence solely wants to achieve a goal. But it was also found that players who have good achievement motivation do not necessarily have good skills either, as explained (Effendi, 2016). There are two main components for analyzing motivation as the basis for individual behavior, one internal component, which is encouragement based on needs. or motives, and two components of the goals to be achieved, with the achievement of goals means that individual needs have been fulfilled. Based on the explanation above, good achievement motivation does not necessarily produce good performance either, because achievement motivation is also influenced by internal factors and external factors that are present in each player.

### **4. The Indirect Influence of Leg Muscle Strength on Football Shooting Ability through Achievement Motivation of SSB Putra Lintas Bungo Jambi Players**

Based on research conducted regarding the indirect effect of Leg Muscle Power on Soccer Shooting Ability, it was found that  $H_a$  was rejected. That is, there is no indirect effect between leg muscle power on the ability to shoot football through achievement motivation. To achieve a good kick, there must be an element of physical condition, especially leg muscle power which is used to lift the thigh and reject when kicking the ball, according to (Jumaking, 2020) "Explosiveness is the ability to carry out activities suddenly and quickly by mobilizing all one's strength. in a short time." Muscle power is also influenced by good technical skills and movement coordination. Leg power can be increased by providing speed and muscle strength training as well as increasing efficiency and movement coordination. From this explanation, regular training and maximum effort are needed to get the ability to shoot football, but each player has different motivations as described (Effendi, 2016). There are two main components to analyze motivation as a basis for individual behavior, one internal component, which is an encouragement based on needs or motives, and two components of the goals to be achieved, with the achievement of goals means that individual needs have been fulfilled.

### **5. The Indirect Influence of Emotional Intelligence on Football Shooting Ability through the Motivation of SSB Putra Lintas Bungo Jambi Players**

Based on research conducted regarding the indirect effect of emotional intelligence on the ability to shoot football, it was found that  $H_a$  was rejected. That is, there is no indirect effect between emotional intelligence on the ability to shoot football through achievement motivation. Emotional intelligence is a person's ability to accept, evaluate, manage, and control the emotions of himself and those around him, according to (Permadi, 2021) Emotional intelligence is the ability to recognize our own feelings and the feelings of others, manage our own emotions and build relationships with others, and self-motivated. Whereas

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Achievement Motivation is the driving force within a person to gain success and involve oneself in activities where success depends on personal efforts and abilities possessed, according to (Effendi, 2016) Achievement motivation is an encouragement for someone to do something that is the best, and is a the achievements he has made, so that he excels/exceeds other people in many ways and that can give satisfaction to himself. Emotional intelligence and achievement motivation can affect a player's performance on the field, but the more important factors in a player's performance on the field are basic technical skills and a good understanding of tactics. There are several ways to score goals against the goal, one of which is by shooting, according to (Bahtra, 2022) Shooting is the player's ability to kick hard and accurately at the opponent's goal to get a goal.

### 6. The Effect of Leg Muscle Strength, Emotional Intelligence and Achievement Motivation Simultaneously and significantly on the Football Shooting Ability of SSB Putra Lintas Bungo Jambi Players

Football is a sport that requires good physical condition, one of these physical condition abilities is explosive power or power. According to (Karola & Padli, 2019) explosive power is important for a football athlete to have because an athlete is required to be able to run fast, kick the ball, and jump when dueling in the air, all of which require very large muscle performance in playing soccer, especially the performance of leg muscles. According to (Muttaqin & Khoirul, 2020) "In a football match, players are required to always focus and concentrate during the match. Players who do not have good emotional intelligence will more often make mistakes such as making unnecessary fouls, passing accuracy or shots that are not on target, and not being able to work together better so that the negative impact that arises does not only affect himself but also the team". SSB Putra Lintas Bungo Jambi. According to (Naibaho, 2017) "achievement motivation can be expressed as a driving force for an activity and a person's behavior in carrying out an activity so that it becomes better, faster, more effective, and more efficient than the activities carried out previously, and as a force that makes a person able to carry out an activity for a long time, which in essence solely wants to achieve a goal.

In the results of path analysis calculations, it was found that there was a simultaneous influence of Leg Muscle Power (X1), Emotional Intelligence (X2) and Achievement Motivation (X3) on Football Shooting Ability (Y) obtained  $R^2 = 0.816$  or 81.60% so that  $H_0$  was rejected and  $H_a$  is accepted, where there is a simultaneous and significant influence between Leg Muscle Strength, Emotional Intelligence and Achievement Motivation on the Ability to Shoot Soccer in SSB Men's Cross Bungo Jambi Players. This means that all exogenous variables have an influence on endogenous variables. Where the resulting effects are different but give influence and contribution in Shooting Ability. Based on the results of this study simultaneously (simultaneously) each exogenous variable, namely Leg Muscle Strength, Emotional Intelligence, and Achievement Motivation significantly influences the endogenous variable, namely the Ability to Shoot Soccer, which can be empirically accepted.

## V. CONCLUSION

Players are advised to be able to follow the training seriously in an effort to improve their Shooting Ability. The training material provided by the coach will be easier for players to apply and absorb if they pay attention and do it seriously. For coaches, it is recommended to make interesting and not boring training material to improve Shooting Ability by considering the level of Leg Muscle Power, Emotional Intelligence and Achievement Motivation of the player.

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## The Cost - Based Pricing: Research in Pharmaceutical Enterprise in Hanoi



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**ABSTRACT:** The authors investigated and evaluated the factors affecting cost-based pricing in pharmaceutical enterprises in Hanoi. Data were surveyed and collected from 77 pharmaceutical enterprises in Hanoi in 2023 and analyzed using statistical tools. Pharmaceutical enterprises in Hanoi include large-sized enterprises and small and medium-sized enterprises. Survey subjects are mainly business administrators and accountants. The survey results show that there are three factors affecting the cost-based pricing method in pharmaceutical enterprises in Hanoi: (1) the degree of influence in price determination sales; (2) cost information; and (3) market share. Based on the obtained results, the authors present new proposals for applying cost management accounting methods to product pricing in pharmaceutical enterprises in Hanoi. Research also shows that businesses should invest in a cost management accounting system to provide information useful to managers in making product pricing decisions, especially when cost information is an important factor that has the strongest influence on the method of product pricing in pharmaceutical enterprises in Hanoi.

**KEYWORDS:** Cost-based pricing, pharmaceutical enterprises, Hanoi

### 1. INTRODUCTION

Vietnam's pharmaceutical industry is considered by experts to be a "fertile" market for domestic and foreign investors, worth up to 10 billion USD in 2020, has doubled compared to 2015. According to research According to IBM research, the scale of our country's pharmaceutical industry in 2026 could reach 16.1 billion USD. The market's revenue is 2% and will reach a compound annual growth milestone after the COVID-19 epidemic period. This is not surprising because the size of the pharmaceutical market in Vietnam will be increasingly expanding, currently the population of our country is about >97 million people, and the average life expectancy is 76 years old. However, Vietnam's pharmaceutical industry is only enough to supply about 40% of drug demand. Most of the domestic market has been dominated by imported pharmaceutical products (about 60%).

Vietnam is classified in the group of countries with emerging pharmaceutical industry (according to the classification of IQVIA Institute). The population is entering the aging phase, which means that the demand for health care is increasing. Besides, the level of willingness to pay for medical services tends to increase. Because per capita income and education level are improved while the living environment is increasingly at high risk of pollution, which increases the number of diseases... are the main factors leading to the development of the population. pharmaceutical industry. According to statistics of the Drug Administration of Vietnam, the industry will grow by double digits in the next 5 years and reach 7.7 billion USD in 2021 and 16.1 billion USD in 2026 (according to IBM), at a rate compound growth up to 11%. It can be seen that the pharmaceutical industry is showing positive signs for post-pandemic recovery and is a potential market for investors.

Therefore, determining a reasonable selling price to improve business efficiency is one of the most important issues of corporate governance. When making pricing decisions, managers rely on different sources of information for different pricing strategies, but cost information cannot be ignored. Therefore, a management accounting system to be able to control cost and selling price information in the changing business environment is essential to maintaining and developing the business. In developed countries, modern cost management accounting systems have been developed and are used to provide useful information for managers in product pricing.

Studies have shown that most businesses in the world tend to use cost-based pricing methods in determining product prices. However, in Vietnam, pharmaceutical enterprises in Hanoi still focus on financial accounting to get cost information for the pricing of their products. This accounting system cannot provide administrators with relevant, timely, and reliable cost information

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for decision making on product pricing. Therefore, pharmaceutical enterprises in Hanoi will be less able to stand in an increasingly competitive business environment. This paper studies and evaluates the factors affecting the cost-based pricing method in pharmaceutical enterprises in Hanoi.

### 2. LITERATURE REVIEW

Guiding et al. (2005) collected data from a survey of 280 companies in the UK and Australia to investigate cost-based pricing and learn about the factors that influence cost-based pricing. Research has pointed out three factors that can influence that: business size, level of competition, and business lines. The study concludes that the level of competition and industry have an influence on the cost-based pricing approach. Firm size has no effect on this valuation method.

Research by Huda Al-Hussari (2006) surveyed 1000 businesses in the food processing and other industries in the UK. Research has pointed out seven factors that affect the cost-based pricing method: the business strategy of the business, business size, market share of the business, competition level, level of product response according to customer requirements, degree of influence in determining the selling price, and cost information.

Research by Peter Lane and Chris Durden (2013) investigates the factors influencing cost-based pricing in UK tourism organisations. The results of the study indicate that the size of the firm affects the cost-based pricing method.

Vu Thi Kim Anh et al. (2018) evaluate the factors affecting the cost-based pricing method for animal feed manufacturers in Vietnam. Data was surveyed and collected from 199 feed manufacturers in Vietnam in 2017 and analyzed using statistical tools. The survey results show that there are five factors affecting the cost-based pricing method in animal feed processing enterprises in Vietnam: (1) Enterprise size, (2) influence in determining selling price, (3) differentiation strategy, (4) cost information, and (5) market share. In which, the cost information factor has the strongest influence and the market share has the weakest influence on the cost-based pricing method in animal feed processing enterprises in Vietnam.

Through the review of studies on the factors affecting the cost-based pricing method, the authors found that there is no research focused on studying the factors affecting the cost-based pricing method in the pharmaceutical industry in Vietnam in general and in Hanoi in particular. Therefore, the authors found a gap in their research. The authors identified the following factors: (1) business strategy; (2) market share; (3) cost information; and (4) the degree of influence in determining the selling price.

Therefore, the authors put forward the following hypotheses:

H1: Business strategy is positively related to cost-based pricing

H2: Market share is positively related to cost-based pricing.

H3: Cost information is positively related to cost-based pricing.

H4: The level of influence in determining the selling price has a positive relationship with the cost-based pricing method.

### 3. RESEARCH METHOD

#### Research data and samples

The research samples were carried out at pharmaceutical enterprises in Hanoi in 2023. According to statistics on the pharmaceutical industry, there are currently about 327 pharmaceutical companies located in Hanoi. The survey sample was stratified randomly.

With 13 observed variables in the study, the minimum sample size in factor analysis and regression analysis is from 5 to 10 times the observed variable (Hair et al., 1998). Thus, the minimum number of samples in this study is  $13 * 5 = 65$  survey units. At the end of the survey period of 2 months in March and April 2023. Out of 122 pharmaceutical enterprises that responded to the survey, the research team received feedback from 81 of them. In which case, the number of valid votes is 77 survey votes. Therefore, the authors used the number of survey samples in this study to be  $n = 77$  survey units, so the minimum sample size requirement was met.

#### Research Methods

The authors used quantitative research methods: the questionnaire was sent to the respondents at the enterprises in the sample via the internet from the Google Driver tool, by post, or by telephone interview. The level of the questions is measured using a 5-point Likert scale. All variables in the questionnaire have been developed from suggestions in the research literature and have been used previously. The scales of this study are inherited from Huda (2006), Peter Lane, Chris Durden (2013), Guiding et al. (2005). The details of the scale are shown in Table 1:

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**Table 1: Explanatory table and coding of the scale**

No	Factor	Code	No. Variables
1	Business strategy	STRA	3
2	Market share	SHA	2
3	Cost information	COST	4
4	The degree of influence in determining the selling price	ISP	2
5	Cost-based pricing method	PRICE	2

### Analytical methods

After receiving the survey form back, the answer sheets are processed before updating to the data analysis software SPSS 22 and performing the following 4 steps:

- Check the reliability of the scale (Cronbach's Alpha)
- Exploratory Factor Analysis (EFA)
- Check the correlation coefficient
- Using multivariable linear regression model

## 4. RESULTS

### Evaluate the reliability of the scale

All measurement factors are evaluated for reliability through Cronbach's alpha coefficient. We have the following Cronbach's alpha results:

**Table 2. Reliability Statistics**

Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Scale Mean if Item Deleted
Cronbach's Alpha = .819				
COST1	11.78	3.043	.657	.766
COST2	11.73	3.043	.586	.799
COST3	11.74	2.905	.674	.757
COST4	11.62	3.001	.651	.768
Cronbach's Alpha = 700				
STRA1	6.60	.612	.497	.631
STRA2	6.61	.662	.425	.715
STRA3	6.51	.490	.639	.437
Cronbach's Alpha = 686				
SHA1	3.60	.402	.526	.
SHA2	3.71	.312	.526	.
Cronbach's Alpha = .649				
ISP1	3.57	.432	.481	.
ISP2	3.62	.475	.481	.
Cronbach's Alpha = 770				
PRICE1	3.58	.272	.626	.
PRICE2	3.55	.251	.626	.

Thus, all Cronbach's alpha coefficients of 4 independent and dependent variables have Cronbach's alpha > 0.6. The correlation coefficients of the total variables of the observed variables all meet the requirements > 0.3, ensuring that the given scales can be trusted in a statistically significant way.

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### Exploratory factor analysis

After analyzing the Cronbach's alpha confidence coefficient, the scales were next evaluated by exploratory factor analysis (EFA). (Table 3)

**Table 3. Rotated Component Matrix<sup>a</sup>**

	Component			
	1	2	3	4
COST3	.882			
COST1	.804			
COST2	.710			
COST4	.696			
STRA3		.833		
STRA2		.806		
STRA1		.642		
SHA2			.906	
SHA1			.805	
ISP2				.894
ISP1				.746

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

From 11 variables observed factors affecting the cost-based pricing method are included in the factor analysis. The observed variables all satisfy the requirements of factor analysis and are divided into four groups. Thus, all the scales selected for the variables in the model meet the requirements and can be used in the next analysis.

### Correlation analysis

The results of the correlation coefficient analysis indicate that there is not enough evidence to confirm the relationship between the business strategy factor and the cost-based pricing method. Because the observed significance level of this factor is greater than 0.05

From the results of the correlation analysis, the author has removed the observed variables that have no statistical relationship and kept the observed variables: cost information, market share, influence level in determining selling price, and method of cost-based pricing for inclusion in the regression analysis

**Table 4. Correlations**

	PRICE	COST	STRA	SHA	ISP
Pearson Correlation	1	.380**	.152	.341**	.394**
PRICE Sig. (2-tailed)		.001	.187	.002	.000
N	77	77	77	77	77
Pearson Correlation	.380**	1	-.302**	-.203	.403**
COST Sig. (2-tailed)	.001		.008	.077	.000
N	77	77	77	77	77
Pearson Correlation	.152	-.302**	1	.029	-.221
STRA Sig. (2-tailed)	.187	.008		.805	.054
N	77	77	77	77	77
Pearson Correlation	.341**	-.203	.029	1	-.040
SHA Sig. (2-tailed)	.002	.077	.805		.730
N	77	77	77	77	77
Pearson Correlation	.394**	.403**	-.221	-.040	1
ISP Sig. (2-tailed)	.000	.000	.054	.730	
N	77	77	77	77	77



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\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Multivariate regression analysis

**Table 5. ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.240	3	2.080	15.283	.000 <sup>b</sup>
	Residual	9.935	73	.136		
	Total	16.175	76			

a. Dependent Variable: PRICE

b. Predictors: (Constant), ISP, SHA, COST

The ANOVA table gives us the results of the F test to evaluate the hypothesis of fit of the regression model. The F-test sig value is  $0.000 < 0.05$ , so the regression model is suitable.

**Table 6.**

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	COST	.803	1.246
	SHA	.957	1.045
	ISP	.836	1.197

In this study, the sig regression coefficients of the independent variables are all less than or equal to 0.05, so these independent variables are all significant to explain the dependent variable, none of them are removed. VIF coefficient is less than 2 so no multicollinearity occurs so no variable is excluded from the model.

**Table 7.**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.277	.491		.564	.575
	COST	.295	.084	.358	3.500	.001
	SHA	.375	.083	.424	4.520	.000
	ISP	.212	.080	.267	2.659	.010

After many times of processing the regression model by different methods, the author chooses the Enter method (putting all variables into the regression equation) for the best regression model results as follows:

$$\text{PRICE} = 0.358 * \text{COST} + 0.424 * \text{SHA} + 0.267 * \text{ISP}$$

Through the results of linear regression analysis, we see that cost information factors (.358,  $p = 0.001$ ), market share (.424,  $p = 0.00$ ), and influence level in determining selling price (.267,  $p = 0.010$ ) have a positive and statistically significant relationship with the cost-based pricing method.

Therefore, the following hypotheses are accepted:

H2: Market share is positively related to cost-based pricing.

H3: Cost information is positively related to cost-based pricing.

H4: The level of influence in determining the selling price has a positive relationship with the cost-based pricing method.

There is not enough evidence to prove the factors: business strategy affect cost-based pricing in pharmaceutical enterprises in Hanoi. Therefore, hypothesis H1 is not accepted.

The results of regression model analysis show that the adjusted R2 coefficient is 0.386, showing that the independent variables

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have the ability to explain 38.6% for the dependent variable.

### 5. DISCUSSION AND CONCLUSION

Vietnam's healthcare market will be worth \$16.2 billion in 2020, accounting for 6.0% of GDP. Total health spending increased from USD 16.1 billion in 2017 to over USD 20 billion in 2021, projected to reach USD 23.3 billion in 2025 and USD 33.8 billion in 2030, at a CAGR of 7.6% (2020–2030). Spending on pharmaceuticals will also increase to more than \$6.6 billion in 2021. These figures show that the pharmaceutical industry has many growth opportunities in the future. However, in the context of many changes in the world, the pharmaceutical industry in Vietnam in general and in Hanoi in particular is facing many great challenges. Product price is one of the factors contributing to helping pharmaceutical enterprises stand firm in the market. Through this study, the authors have identified the factors affecting the cost-based pricing method in pharmaceutical enterprises in Hanoi, which are cost information, market share, and the level of influence in determining the selling price. Based on the research results, the authors make recommendations on the application of management accounting methods to product pricing in pharmaceutical enterprises in Hanoi.

*Firstly*, the research results show that cost information is an important factor in product pricing methods in pharmaceutical enterprises in Hanoi. Therefore, pharmaceutical enterprises in Hanoi need to pay attention to methods of determining and calculating costs. If only stopping at the cost system in financial accounting will not be enough information for managers to make business decisions. Enterprises need to invest in building a cost system in management accounting, especially using modern management accounting techniques.

*Secondly*, in terms of general cost allocation, enterprises should allocate overheads using a reasonable allocation basis, with the selected allocation base and the incurred overheads having a causal relationship. In addition, businesses can also use the ABC method to determine the overall cost of a product as the basis for pricing the product at full cost.

*Third*, research has shown that the determination of the product price depends on the market share and the degree of influence on the determination of the selling price, so it depends on the position of the business in the market to use appropriate information. For businesses with high positions, they often use the cost-plus method to determine the selling price of their products. For small businesses with low market share positions, pricing decisions should also be based on variable and total cost. However, these businesses, besides cost information, need to pay attention to other information such as competitors' prices, market share of the business, product features... to set prices.

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## Juridical Consequences of Article 17 Paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Customary Law



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**ABSTRACT:** Recognition and protection of Indigenous Peoples already exist in the Indonesian Constitution, especially Article 18B and Article 28I of the 1945 Constitution which recognize Indigenous Peoples, so the regions should support them. The object of this research is the existing Regional Regulation in Sekadau Regency, namely Regional Regulation No. 8/2018, especially Article 17 paragraph (3), this research intends to analyze the provisions of the article supporting the recognition and protection of MHA or actually burdening MHA to fight for their rights, so that the process of administrative requirements becomes increasingly complicated. A Regional Regulation (hereinafter referred to as Perda) regulates the recognition and protection of indigenous peoples in Sekadau District. The number of indigenous peoples that have been recognized by the Perda is 5 (five), even though there are many indigenous peoples in the district. This research uses normative legal research methods, then a descriptive approach, then the sources needed by this research are secondary data. Secondary data includes primary legal materials and secondary legal materials, processed and analyzed using qualitative methods. This research found that the regulation of Regional Regulation Number 8/2018, especially Article 17 paragraph (3) has not been adhered to optimally. This is because there are inhibiting factors in the form of the funds required are not small and the Government has not carried out its obligations to the rights of MHA in Sekadau Regency optimally in terms of providing assistance to MHA in fighting for the recognition of the existence of MHA.

**KEYWORDS:** implementation, local regulations, indigenous peoples, customary communities, protection

### I. INTRODUCTION

The Indonesian state is a state that is guided and has a philosophical foundation, namely Pancasila, the 1945 Constitution (hereinafter abbreviated as the 1945

Constitution). The purpose of the nation and state based on the 4th paragraph of the 1945 Constitution is to protect the entire Indonesian nation and the entire Indonesian homeland and to advance the general welfare, educate the nation's life, and participate in implementing world order based on independence, eternal peace and social justice. The 1945 Constitution guarantees the protection of the Indonesian people without exception. What should not be forgotten is the existence of indigenous peoples, the arrangements are clear in Article 18B, Article 25, Article 28I of the 1945 Constitution, then the Regulation of the Minister of Home Affairs (hereinafter abbreviated as Permendagri), namely Permendagri Number 52 of 2014 concerning the main rights that must be handled in providing recognition and protection to MHA, these regulations become the basis for ensuring the existence of MHA in the life of the Indonesian State. The existence of MHA is a necessity in the Unitary State of the Republic of Indonesia (hereinafter abbreviated as NKRI). There are still many laws and regulations that do not accommodate the urgency of recognition and protection of MHA. One of the regulations accommodating the existence of MHA is the Sekadau District Regulation. The fact proves that the regulation has not been well implemented in terms of accommodating the rights of MHA, the highlight is Article 17 paragraph (3) which regulates the requirements for identification of MHA, as stated in Article 17 paragraph (1). That identification must hold 7 (seven) aspects, including the history of the existence of MHA; MHA territory; customary law; customary assets and goods; customary institutions; customary government structures; and customary justice systems. The provisions in Article 17 paragraph (3) are quite complex, due to the many provisions of the article. The importance of Regional

## **Juridical Consequences of Article 17 Paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Customary Law**

Government participation (hereinafter abbreviated as Pemda) in helping to facilitate the needs of MHA to fulfill the provisions of Article 17 paragraph (3). If the local government is passive, MHA will have to fight for the recognition of their existence independently, which is the duty of the state and MHA through the local government based on the Sekadau District regulation. The provisions in Article 17 paragraph (3) are very complex and require support from the local government in the form of human resources in facilitating activities and financial support in the form of funding. The author is interested in knowing the reasons why the provisions of Article 17 paragraph (3) cannot be maximally realized, hence the title "Juridical Consequences of Article 17 paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Indigenous Peoples to the Local Government". The formulation of the research problem is how the juridical consequences of Article 17 paragraph (3) of the Sekadau Regency Regional Regulation Number 8 of 2018 concerning Recognition and Protection of Indigenous Peoples. This research aims to find out the juridical consequences of Article 17 paragraph (3) of Sekadau Regency Regional Regulation Number 8 of 2018 concerning Recognition and Protection of Indigenous Peoples. This research has not been conducted by any party before, so in terms of proving the originality of this research, it is based on research that discusses the reasons for a regional regulation in relation to MHA that has not been implemented in a region. Some of them are as follows. First, the local regulation in Merangin Regency, namely Local Regulation No. 08/2016, which regulates the recognition and protection of the Serampas Clan Indigenous Peoples in Jambi Province, precisely in Jangkat District, Merangin Regency. The difference with our research is that it appears that the regional regulation has not been implemented properly in Merangin Regency due to the lack of legal awareness of the community towards the regulation, while we focus on Sekadau Regency Regional Regulation Number 8 of 2018. Secondly, research on local regulations in West Kutai Regency, namely Local Regulation No. 12/2006, concerning the Inauguration and Development of Indigenous Peoples. The difference with our research is that it focuses on obstructed communication due to the distance between villages, legal awareness of the community to enforce local regulations is still lacking, then funding is still inadequate, then the organizational structure of the customary law community can be said to be still simple. Third, research on the use of customary law when applied to the settlement of crimes according to Perda No. 1/2012. The research was conducted in Riau Province, precisely in Selensen Village, Indragiri Hilir Regency, the difference with our research is that it appears that the provisions of the Perda have not been heeded in the part of the settlement of criminal acts that are still resolved by the police institution, whereas it should be resolved by the Customary Law Institution, then also the sanctions given to perpetrators of criminal acts still do not provide a deterrent effect. Fourth, the implementation of MHA recognition is based on existing local regulations in Landak Regency, namely Landak Regency Regional Regulation Number 15 of 2017, especially Article 6 Paragraph (3) jo. Article 7, is different from the research we will conduct, because this research focuses on the ineffectiveness of the regulation because there is no clarity on the committee that carries out validation and identification of MHA.

### **II. METHODS OF RESEARCH**

This type of research uses normative legal research methods using deductive reasoning, namely general to specific. This research requires secondary data in the form of primary legal materials and secondary legal materials. All data is analyzed using qualitative methods. Primary legal materials consist of the 1945 Constitution, Permendagri Number 52 of 2014 concerning Recognition and Protection of Customary Law Communities, Regional Regulation of Sekadau Regency Number 8 of 2018 concerning Recognition and Protection of Customary Law Communities, Sekadau Regent Regulation Number 13 of 2020 concerning Guidelines for Identification, Verification, Determination of Customary Law Communities in Sekadau Regency. Secondary legal materials consisting of various books, journals and the Decision of the Constitutional Court, namely Number 35/PUU-X/2012, Decree of the Regent of Sekadau Number 189/313/DPMD.C/2020 concerning the Establishment of a Committee for the Protection and Recognition of Indigenous Peoples in Sekadau Regency.

### **III. RESULT AND DISCUSSION**

#### **A. Definition of Customary Law**

The term 'customary law' was coined by Dr. Snouck

Hurgronje. The term is found in his book entitled *De Atjehers*. Through the book, he alluded to *Adatrecht* or the Indonesian translation translated as customary law. Customary law is emphasized in terms of its application to the people of Bumi Putra. *Kaum Bumi Putra* is known as a term to nickname native Indonesians during the Dutch East Indies rule when it ruled the archipelago. In the book *Adatrecht*, it is said that customary law applies to people who are indigenous Indonesians. Furthermore, customary law becomes an object of science within the framework of positive law, that it becomes one of the subjects, especially in the law faculties of universities in Indonesia.

## **Juridical Consequences of Article 17 Paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Customary Law**

1. Ter Haar argues that customary law is all the rules, these rules are the incarnation of the decisions of legal functionaries in a broad sense. Customary law has authority and impact in its implementation, namely immediately applies in society and is obeyed wholeheartedly (Hilman Hadikusuma, 2003)

2. Cornelis Van Vollenhoven argues that customary law is a collection or set of rules. The rules discuss behavior that is applied to the natives. The rules contain sanctions because they are legal rules.

3. Raden Soepomo said that customary law is an equation of law in unwritten form. Not a law contained in regulations formed by the legislature, but a living law. Customary law is a treaty on state legal institutions at the provincial and parliamentary levels. Customary law can be said to be a collection of rules that are customary in society. These rules are organized and survive in the social life of a nation, whether applied in cities or villages.

4. According to Dr. Hilman Syahrial Haq, et al, customary law is defined as the law of the Indonesian people, because it lives in Indonesian society. The law becomes one of the cultural emanations, certainly a guide to life and Indonesian identity. It is one of the most important aspects of a nation so that its existence must be maintained. (Hilman Syahrial Haq, 2022

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1. Ter Haar argues that customary law is all the rules, these rules are the incarnation of the decisions of legal functionaries in a broad sense. Customary law has authority and impact in its implementation, namely immediately applies in society and is obeyed wholeheartedly (Hilman Hadikusuma, 2003)
2. Cornelis Van Vollenhoven argues that customary law is a collection or set of rules. The rules discuss behavior that is applied to the natives. The rules contain sanctions because they are legal rules.
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## **Juridical Consequences of Article 17 Paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Customary Law**

Customary law can be said to be a collection of rules that are customary in society. These rules are organized and survive in the social life of a nation, whether applied in cities or villages.

4. According to Dr. Hilman Syahrial Haq, et al, customary law is defined as the law of the Indonesian people, because it lives in Indonesian society. The law becomes one of the cultural emanations, certainly a guide to life and Indonesian identity. It is one of the most important aspects of a nation so that its existence must be maintained. (Hilman Syahrial Haq, 2022

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### **B. Masyarakat Hukum Adat Menurut Para Ahli**

1. According to Holleman, Masyarakat Hukum Adat is divided into forms, either in the form of kinship groups, territorial groups, and a mixture of the two. The most important thing lies in the rules that are always held and maintained by members of a legal community in the customary law. Customary law regulates a unique way of life, as well as regulating the functions of a community group.

2. According to Surodjo Wignjodipuro, the condition of MHA has existed since before Indonesian independence, MHA lived side by side with the Dutch East Indies government. This is proof that the colonial government had already regulated and recognized the existence of MHA as one of the aspects included in the framework of their autonomous government (Surojo Wignjodipuro: 1973)

## **Juridical Consequences of Article 17 Paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Customary Law**

3. Maria S.W. Sumardjono argues that the existence of MHA was initially spontaneous, arising in certain areas. The thing that makes them MHA is that there is a high sense of solidarity among members of the community, they have the same idea that they are members of a customary alliance, not outsiders. They have territories, which they use as a source of wealth. The rule is that customary territories can only be utilized by members of the customary alliance, although there is dispensation in terms of utilization. Outsiders to their customary alliance may utilize the land in their customary territory as long as they give permission and pay a fee to the customary alliance (Abrar Saleng, 2004).

### **C. Legal Basis for the Existence of MHA**

1. Article 18B paragraph (2) of the 1945 Constitution, the State recognizes and gives respect to the various and diverse unity of MHA in the territory of the State of Indonesia, not forgetting also the traditional rights they have as long as they still exist in the lives of MHA in line with the development of the nation, society and various principles of the Republic of Indonesia as contained in various laws and regulations, especially in the form of laws.

2. Article 28I paragraph (3) of the 1945 Constitution, that customary or cultural identity, various traditional community rights are given respect as long as they are in line with the times and the progress of the world.

3. Article 32 paragraph (1) of the 1945 Constitution, that the state pays special attention to Indonesian national culture, especially in the midst of world progress. The steps taken by the state are to provide guarantees in terms of freedom to the community to maintain and develop various cultural values. 4. The decision of the Constitutional Court in Number 35/PUU-X/2012, there are 3 (three) criteria to determine the condition of the community in MHA, their recognition as legal subjects, so that they can certainly litigate in the Constitutional Court.

a) The first criterion, a recognized MHA unit that still exists in the de facto view still exists from a territorial aspect, as well as genealogical, functionally contains at least one and / or a set of various aspects, as follows.

- 1) there are people in the community who have a sense of group;
- 2) there is a customary system of government;
- 3) the availability of customary property and various assets;
- 4) Various tools or equipment of customary norms are available, especially in MHA from the territorial aspect; 5) there is an element of a certain territory.

b) Criterion Two, the unity of MHA including their traditional rights does not conflict with the development of society in general if, as follows.

- 1) Its existence is recognized by other legislation, especially laws and sectoral, regional regulations. This is an illustration of the development of various values that are considered ideal in the development of society at the present time; and
- 2) The content of the various traditional rights is indeed given recognition and respect by the members of the adat community and the wider community, especially in accordance with various human rights).

c) The third criterion is that the unity of the MHA and their various traditional rights does not conflict with the principles of the Republic of Indonesia, especially that the existence of the customary alliance does not adversely affect or disturb the Republic of Indonesia, as follows (Yando Zakaria, 2018)

1) The existence of MHA does not pose a threat to the existence or guarantee of the sovereignty and integrity of the Republic of Indonesia; and

2) The substance or content of customary law norms is in line with the legislation, and must even be in accordance with the law. Based on the formulation of the problem, the answer is that law is one of the instruments or parts used by the government in terms of exercising authority and mandate. The authority exercised must provide certainty, provide benefits, provide justice, and create prosperity for all citizens. Indonesia has the state guidelines of the 1945 Constitution. Article 1 paragraph (3) states that Indonesia is called a state of law, so Indonesian life is guided by law. Law is realized through legislation, one of which is in the form of laws. Law Number 23 Year 2014 regarding Regional Autonomy. In Article 1 paragraph (6), it is stipulated that the Region means that the region is authorized and obliged to provide arrangements and management in the region within the framework of the Republic of Indonesia. In the regulation of regional authority, the local government has the authority to regulate its regional affairs, including the authority to make local regulations, for example the Regional Regulation of Sekadau Regency Number 8 of 2018 concerning the recognition and protection of MHA has a philosophical basis in the form of the existence of MHA, Customary Law and Customary Institutions in the Regency is a component of wealth, in this case socio-cultural wealth. This wealth has value and brings benefits to the community, so it should not be extinct or lost. Instead, it must be maintained and developed, which is the task of MHA. In addition, it is also an asset for the local government for regional development in the district.



## **Juridical Consequences of Article 17 Paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Customary Law**

Based on this foundation, it is important for the local government to encourage the recognition and protection of indigenous peoples, which is the mandate and regulation of the Regional Regulation. In addition, a derivative regulation was formed, namely Sekadau Regent Regulation Number 13 of 2020. In order to carry out the mandate of the Perda, the Regent issued Sekadau Regent Decree Number

189/313/DPMD.C/2020, which is tasked with ensuring the implementation of the increasing recognition and protection of MHA and following up on various inputs and aspirations from MHA to the Regional Government, especially in the planning stage, managing and supervising programs that are programs in the framework of development aimed at the availability of funds, protection and guarantee of MHA rights.

So far there are 9 (Nine) Indigenous Peoples in Sekadau District who are fighting for their rights in terms of their existence being recognized and protected as Indigenous Peoples, but only 4 (four) Indigenous Peoples have been recognized and protected by the local government, namely the Dayak De'sa Indigenous Peoples in Sekadau Hilir Sub-District, Tapang Semadak Village to be precise; Dayak Kancikgh Indigenous Peoples in Nanga Taman Sub-district, precisely in the villages of Nanga Mongko, Nanga Engkulun, and Semerawai, along with Dayak Koman Indigenous Peoples in Nanga Mahap Sub-district, precisely in the villages of Tamang and Cenayan. The granting of the Regent's Decree is a form of recognition and protection in accordance with the mandate of the Regional Regulation and is an important milestone for indigenous peoples in Sekadau Regency to realize their sovereignty over their customary lands and territories, affirming that the existence of indigenous peoples cannot be separated from their customary territories and forests and guaranteeing their rights as an entity and protected from various forms of discrimination.

The presence of Local Regulation No. 8/2018 is an exciting thing for MHA in Sekadau, they are happy to take part as legal subjects in the recognition of their rights and are also protected within the framework of the Republic of Indonesia. However, in the midst of this excitement, there are still problems. The main problem is the fulfillment of administrative requirements needed for the recognition of MHA, starting from the preparation of social data and the documentation process, as well as the preparation of spatial data for the implementation of mapping of indigenous territories, which requires large costs and high technical capabilities. In this case, the local government as a policy maker should be able to provide support in the form of providing facilities in the implementation of fulfilling administrative needs. The fact that the local government has not been able to facilitate these needs is not in accordance with Article 26, Article 27, Article 28 of the regulation which states that it guarantees that the local government must be prepared to provide facilities, facilities, infrastructure, funds in providing recognition and protection of MHA. In the Sekadau District APBD from 2019 to 2021, there is no budget for the needs of MHA, but it is focused on resolving COVID-19. The obstacles experienced by MHA have been felt in the document preparation stage, because they have to provide a lot of time, energy and costs. There has been synergy and coordination between the local government and NGOs (Non Government Organization) as a companion institution, but the resources available are still limited so that the presence of NGOs as a companion institution is still unable to accommodate the needs of all MHA in Sekadau District. The burden placed on MHA and NGOs will be difficult to implement if there is no support from the local government. If local governments are passive and only wait for proposals for recognition and protection of MHA, it will be difficult for MHA to fight for their rights, even though MHA are legitimate legal subjects as stipulated in the constitution. The local government should be active in the framework of the joint task of carrying out the mandate of the Regional Regulation, not just passive. If the local government is passive, it can show that the political will of the Sekadau local government is still weak, therefore the implementation of the local regulation has not been maximized.

### **IV. CONCLUSIONS**

Sekadau District Regulation No. 8/2018, specifically Article 17 paragraph (3), has not been able to accommodate administrative requirements for MHA in Sekadau District due to budget constraints from the local government. This is due to the regulation of the article that is not commensurate with the reality of the available budget. The arrangements contained in the Perda in terms of providing recognition and protection to MHA in Sekadau District are difficult to do because they go through a series of stages that are quite long and many so that they need a lot of money. There is not much money available. Article 17 paragraph (3) is not in accordance with the conditions of MHA who experience limited human resources to help facilitate capacity building activities to jointly conduct participatory mapping, often MHA have difficulty in realizing participatory mapping because it certainly requires a variety of resources. Therefore, Article 17 Paragraph (3) should be the joint responsibility of the Sekadau District Government, which is still difficult to implement. Local governments should have juridical consequences in facilitating MHA, after all, local governments are representatives of the central government in the regions so that facilitating MHA to obtain their rights should be the responsibility of the local government, not only borne by MHA. Local governments must be active in providing justice for MHA, one of which is by helping to facilitate the needs of MHA, as well as to show that local governments are present so that MHA can obtain legal certainty as legal subjects.

# Juridical Consequences of Article 17 Paragraph (3) of Sekadau Regency Regional Regulation No. 8/2018 on the Recognition and Protection of Customary Law

## ACKNOWLEDGMENT

Thanks to Prof. Dr. Dra. MG. Endang Sumiarni, S. H., M. Hum., Dr. Th. Anita Christiani, S. H., M. Hum. and Dr. E. Sundari, S. H., M. Hum. for their guidance, knowledge, support, and motivation in the preparation and publication of scientific paper.

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## Impact of Waste Management Education at Smu Witama Pekanbaru Students



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**ABSTRACT:** This article discussed the impact of waste management education on students of SMU Witama Nasional Plus Pekanbaru. Schools are a great place to increase public knowledge about waste and the impact of waste. The environment of Witama Nasional Plus is known to be clean, free from garbage, and has carried out waste selected in the trash can. This research is qualitative research conducted in May – June 2023. Data was obtained through class meetings, where 30 female students were gathered in one class to be given knowledge about waste management, and discuss waste management at school. Students are given pre-test and post-test questionnaires. After that, monitoring the improvement of waste management in schools was carried out. Data analyzed qualitatively and tabulatively displayed. The results of questioner and monitoring are known to change student attitudes toward treating waste, *first*, there is an increase in student knowledge of management litter; *Secondly*, there is an increase in waste management in terms of personal waste disposal of students based on the type of waste and waste management plans as activities Student Council. Based on these field findings, it can be concluded that student education has a positive impact on changing students' attitudes toward waste. This research contributes to the field of environmental technology.

**KEYWORDS:** Trash, Students. Education.

### INTRODUCTION

Waste is a problem for Indonesia, especially Pekanbaru. Nationally, based on data released by the Ministry of Environment and Forestry (KLHK) in February 2023 (Kompas, February 1, 2023), the amount of landfill reaches 18.3 tons per year. The amount of waste produced by 270,000,000 Indonesians reached 0.56 kg per person and 22.72 percent has not been able to be managed. While the same condition also occurs in Pekanbaru, where daily waste production reaches 1000 tons (GoRiau, 9 2022) with a population of 1,085,000 people (BPS Pekanbaru, 2023), so the average person produces 0.092 kg per day.<sup>1</sup> The Acting Mayor of Pekanbaru budgeted IDR 57.9 billion for waste management in 2023 (Riau.go.id, 06/12/2022)

The problem of large amounts of waste in Indonesia, according to Chaerul, et al (2007) is caused by a lack of waste management and weak legal certainty. This opinion is confirmed by Kardono (2007) that a large amount of waste has not been followed by management, final landfills, institution, and adequate costs. Lasma (2007) reinforces the opinion of Chaerul and Kardono that the complexity of waste management in Indonesia is because Indonesian people still low in knowledge about waste and knowledge about the adverse effects of waste, as well as low welfare factors of Indonesian people. Waste handling efforts must involve various parties, especially the government, community, and schools.

Schools are institutions that produce large amounts of waste. The waste generated by students is sourced from school waste and household waste. The household waste in question is students bringing food or necessities to school from home. Schools with a very large number of students and teachers are organic and inorganic waste producers. Ponorogo Environment and Forestry Service (DHL Ponorogo, 2017) that schools in Ponorogo produce 43.8% of plastic waste in Ponorogo Regency. The amount of garbage in this school cannot be separated from eating and drinking activities (snacks) and learning activities at school. Mineral water drinks and other drinks that use plastic cups, each food package is also generally made of plastic. Meanwhile, the school has not been included in the waste management program.

<sup>1</sup> Divider 270.000.000,- .it is not true because garbage is Known only in urban areas While at rural garbage does not yet have a concept about garbage. The sum Dividers the most Rational be 162 million, which is 60% of 270 million because the sum of inhabitants that stay in urban areas is estimated 60% of the sum inhabitant of Indonesian with such a sum average garbage that is Generated Per 0.94 kg per person.

## Impact of Waste Management Education at Smu Witama Pekanbaru Students

The role of schools is very important in waste management because, in the short and long term, it will increase public knowledge about the dangers of waste, waste management, and the management of garbage. The role of the school is realized by making educational efforts to students ranging from Early Childhood Education (PAUD) to Senior High School (SMU), through classrooms in each lesson, waste sorting practices and waste management practices. This education is expected to change students' perceptions of waste. As Khasanah, et al (2020) found that students in schools are less concerned about protecting the environment, littering and thinking that waste is disgusting.

Students in schools need to be introduced to the types of waste, waste selection, waste management, waste banks, and negative impacts on health and the environment. The knowledge of students influences the household, peers, and community in their environment. Students are expected to manage their waste at school and home. In addition, schools need to be involved in waste management so it does not become a burden on the environment and society. This study aims to be able to inform educational efforts carried out at Witama School Nasional Plus in waste management involving students. The purpose of this study is answer to the research question, "How is the impact of education conducted at Witama School Nasional Plus in waste management?"

### THEORETICAL STUDIES

Soemirat, (2014) defines waste as waste material produced by a human activity both individually, in households, institutions, and industries. This definition is by the definition based on Law No. 18 of 2008 concerning waste management, namely waste is the rest of daily activities and/or natural processes in solid form. A similar opinion was also conveyed by WHO as quoted by Chandra (2007), namely something that is not used, not used, disliked or one that is made that comes from human activities and does not occur by itself Damanhuri & Padmi (2010) found that waste is classified based on the source of waste, namely household waste, institutional waste, industrial waste, waste from public facilities, waste from the remnants of building construction, waste from the results of wastewater management and agricultural waste.

Referring to Law No. 18 of 2008 concerning waste management, waste management is divided into two groups, *first*, waste reduction (waste minimization), which is limiting the occurrence of waste by reuse and recycling. *Second*, waste handling which consists of selecting, collecting, transporting, processing, and final processing of waste. The implementation of Law No. 18 of 2008 is not easy because the amount of increasing waste is not comparable to the waste management program and there is still little public knowledge about waste and the negative impact of waste (Ejaz & Janjua, 2012). Therefore, massive multi-stakeholder participation is required to be involved in waste management.

Zulkifli (2014) introduced a 4R approach for waste handling, namely 1) Reduce, which is an effort to minimize the goods or materials we use; 2) Reuse, i.e. choose items that can be reused; 3) Recycle, namely items that are no longer useful can be recycled so that they are useful and have added value; and 4) Replace, which is replacing items that can only be used once with more durable items. These four efforts can reduce the volume of waste so that a lot of waste can be handled. In line with that, Permadi (2011) conveyed the importance of recycling waste which consists of activities such as separation, collection, processing, distribution, and manufacture of used products or materials and the main components in modern waste management.

Students need to be introduced, namely *first*, to the threat of garbage hazards. Inorganic waste contains *absorbent polymer* (SAP) which can cause hormonal damage, and entering the body through the food chain can cause infertility (Anwar; 201: 7). Likewise, plastic waste when exposed to heat releases microplastic compounds that are very likely to enter the human body through air, soil, and water (Riski P; 2019). In addition, garbage causes pollution because it contains gas, piles of garbage occur a lack of oxygen, poisoning from gas produced by garbage, cause diseases transmitted by insects, rats, dogs, and cats, and physically disturb environmental aesthetics (Hadiwiyoto; 1983)

*Second*, carry out independent management efforts such as 1) Reduce, 2) Reuse, 3) Recycle, and 4) Replace independently. Students are expected to independently conduct selection and management.

*Third*, waste management that can make money. Management can be done by itself by recycling used waste, selling waste to collectors, can also establish waste banks in schools as part of extracurricular activities whose benefits can finance student council activities and empathize with the poor at school.

*Fourth*, make efforts to clean school movement. This movement was driven by the student council by making it a student council program. Where waste is sorted through the provision of separate garbage cans. This activity is integrated into the third educational model above so that the clean school program has the impact of generating costs for student council activities and social programs to the community.

To ensure that the four programs can be introduced properly, students are given basic knowledge about the types of waste, organic and inorganic waste and sources of waste. Organic waste is waste that comes from the rest of living things that can experience decay can also experience weathering, and waste can be managed properly to remain friendly in the environment.

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Meanwhile, inorganic waste is the result of the disposal of human activities (plastic and glass) which takes a long time to decompose (Siregar F, et al., 2020). Students are also introduced to the concept of 3R (Arisona, 2018) and or 4R (Zulkifli, 2014) The introduction of waste processing to students can be done in the classroom, with special classes, or being part of a subject or outside the classroom. Activities outside the classroom such as involving students directly disputing, collecting, sorting and processing waste, including visiting waste banks. In the waste bank, students are introduced to composting materials, namely organic waste around the campus or school, then invited to sort or separate waste from stones, because it is feared that the presence of or can damage the enumerator men. Students are also invited to participate in chopping the garbage that has been collected to make it smaller in size. Through waste management education, students have an awareness of environmental cleanliness and obey others so as to reduce air pollution so that the air remains normal (Budhiawan et al., 2022)Purnama W (2020) reported the results of his research on waste management in elementary schools in Ruteng through the educational stage, namely providing awareness, then providing knowledge, and carrying out waste management starting from sorting to temporary manufacture or by burning waste. Another pattern is to be part of even some schools set up waste banks. The waste bank was established according to Uma (2014) to get used to disposing of waste in its place and immediately sorting and maximizing the use of used goods, so that awareness arises that used goods provide economic benefits and environmental cleanliness. Waste banks are an alternative to invite residents to care about waste, the concept of which may be developed in other areas. Nuryani (2012) said that through waste the community is organized so that it gets economic benefits. These benefits are obtained by collectors, waste bank managers, and of course the community as customers.

Waste banks can also be used as a model of waste management education to students at school because the beginning of the waste management process is in the waste bank, including the economic benefits of waste. Through the introduction of waste banks to students presenting real efforts to benefit waste for students, recycling produces economically beneficial works. Students can also determine the role positions that will be carried out whether as waste bank managers, collectors or just as customers, all of which positions bring financial benefits.

### METHOD

This research was conducted at Witama Nasional Plus, Jalan Srikandi Pekanbaru in May – June 2023. The choice of this school is because it is newly established with a fairly clean environment. This research is a class-based qualitative research, where 30 students of grades X and XI collected in one class were given information about waste using the lecture method and answered on May 25, 2023. Before the lecture started, 30 students were given a test to find out students knowledge about waste and waste management. Then the researcher gave a lecture on waste and waste management followed by a question and answer. After the question and answer, students were given back questionnaires about changes in their knowledge about waste and waste management. After the stairs from May 25, 2023, to June 10, 30 students were monitored, where monitoring was carried out by teachers and researchers interviewed teachers about changes in student attitudes towards waste and waste management. Then continued with discussions with students.

The results of the questioner pre-test and post-test are tabulated using the Excel program and then displayed in the form of a chart, and interpreted descriptively. Data on pre-test and post-test results are then juxtaposed with observation data, results of discussions with students, and interviews with teachers. The entire data is analyzed with a thematic approach by looking at the tendency of emerging themes. The results of the analysis are written descriptively in this article.

### RESULTS AND DISCUSSION

#### a. Overview of Witama School Nasional Plus

Witama Nasional Plus Jalan Srikandi was inaugurated on May 20, 2022 by the Governor of Riau. Previously, there was a Wiatama Nasional Plus School on Jalan Tanjung Datuk Pekanbaru which was established on May 20, 2008. Sekolah Witama Nasional Plus Jalan Srikandi is not a branch of Sekolah Witama Nasional Plus Jalan Tanjung Datuk even though it is in one way. The school is located on Jalan Srikandi, Delima District Tampan Pekanbaru stands alone with its principal

The vision of Witama Nasional Plus is to realize superior international quality education based on belief in God, and positive behavior by combining academic success with non-academic. This vision is realized with the following missions; (a) create an environment of love learning and learning to love; (b) Develop a learning environment that upholds honesty, trust, a sense of responsibility, mutual respect, independence, and behavior by the code of ethics. (c) Motivate students and staff to discover and develop their talents and abilities to the fullest extent possible. (d) Help students and staff to be happy and always grateful to themselves and believe in their own abilities. (e) Educate students, teachers, and staff to have moral and social responsibilities comprising themselves and the surrounding environment. (f) Explore the ability of students, teachers, and staff to use technology

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as a tool to facilitate their work. (g) build close and mutually beneficial relationships with all parties interested in the school of Witama.

Witama School believes that everyone has their own intelligence so they deserve a good education according to their abilities. Everyone who has succeeded in growing, developing, and attaining has according to his God-given abilities is someone who succeeds. For this reason, Witama wants each of his students to succeed by making school a place where students who do not know become aware, who know to understand, who understand to understand, who understand to master, and who master to apply in life. Therefore , Witama Nasional Plus school uses English within the school, with national and international curricula.



Source: Witama School National Plus website, didownlod June 6, 2023, at 09.00 WIB

Photo 1 : Witama Nasional Plus School Building

At Witama School, it is not only about academic achievements that must be achieved by students. However, it is a place to grow and develop and bear fruit for every student regardless of their background. Every child is unique and has their intelligence.



Source: Foto Amady, field study 2023

Photo 2 : Research Team Taking Photos with Witama School National Plus teachers and students

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### b. Impact of Knowledge Education About Waste

The environment of Witama Nasional Plus School is clean and maintained clean, starting from both the yard which is generally dipping rooms, and meeting places. Tong waste has been provided based on organic and inorganic waste sources. School hygiene management is carried out by special cleaning staff and has not involved students and Organisasi Siswa Intra Sekolah/ Student Organization in School (OSIS). Students are expected to do sorting at the time of garbage disposal. The garbage in the garbage cans is collected at a temporary landfill (TPS) by cleaners then the city cleaning department transports it to the landfill.

Students who attend Witama Nasional Plus generally come from the upper middle-class economic class, so students focus on studying while at school. While at home students generally waste affairs are managed by their workers as well. These upper-middle-class economic students are not so close to waste and waste management, because they are not in direct contact. Therefore, information about waste and knowledge about waste for them is a new thing.

To find out students' knowledge about waste and waste management, before a lecture on waste and waste management was held a pre-test, then after the lecture was delivered to 30 students a post-test was also carried out with different questions but the material was the same, but while the lecture process took place Students are also asked knowledge about waste to find out students' interests in answering the questions submitted.

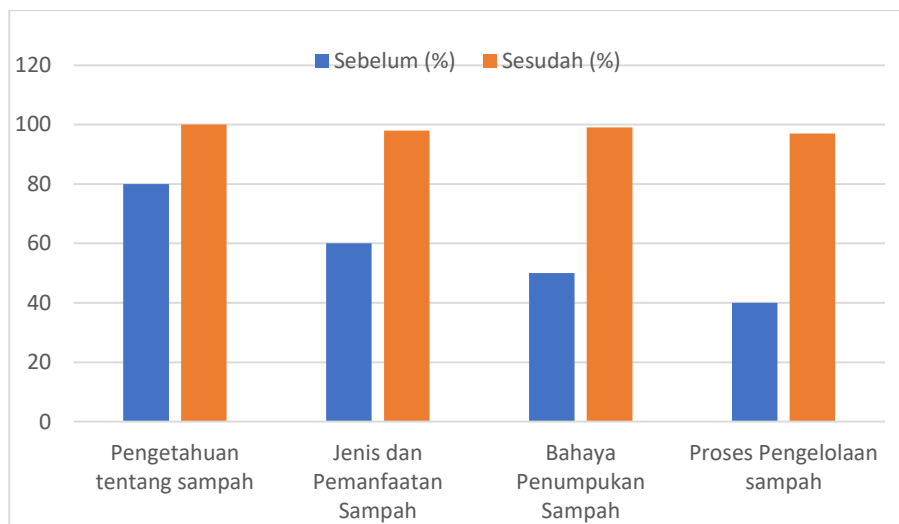


Source: Foto Amady, field study 2023

Photo 3 : Lecture by the Research team

Pre-test and post-test materials with 4 indications of knowledge about waste and waste management, namely 1) knowledge about waste; 2) types of waste use; 3) the danger of garbage accumulation; and 4) the waste management process. The results of the research showed changes in students' knowledge about the four indications as stated in the following chart 1. This data shows that students' knowledge is very significant after receiving education about waste management at SMU Witama Nasional Plus.

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Source: Results of the Questioner Pre and Past Test study, 2023

Chart 1: Improving Student Knowledge of Waste Management

The results of the pre-test and post-test quiz encouraging picture because the level of student absorption is quite high. Before the lecture was given, students' knowledge about waste was very good about garbage not reaching 100 %, after the lecture the knowledge reached 100%, as well as type knowledge and waste utilization, hazards of waste accumulation and waste management processes. All the individuals questioned showed a very significant increase in knowledge. This increase in knowledge indicates the seriousness and interest of students in waste management.

The lecture delivered by the research team to 30 students and attended by the principal and teachers was able to open their horizons to the students. Principal Rosmeita Hutabarat, S.Pd (Interview, June 6, 2023) said that the impact of the knowledge gained by students and teachers was felt was that students had Concern for waste in schools, especially personal waste produced by students. Students have shown empathy by making garbage in garbage cans based on the type of garbage. The school is also in the process of discussing with the student council board to make the waste management program part of the student council program. Even the school is looking for ways to realize the bank until Sekolah Witama Nasional Plus.

### CONCLUSION

Based on the research process and research findings, it can be concluded that education of students has a positive impact on school involvement as a waste management institution. Schools are a large waste-producing institution that has teachers and students who are potential human resources to develop knowledge about waste and manage waste.

The level of absorption of students towards the information conveyed by the speaker about waste and waste management is very good reflecting that waste management education to schools is quite effective. Therefore, educational efforts in schools need to be increased so that information about waste, waste hazards, and waste management spreads widely not only to students but also to students but to peers, outgoing and outgoing members who will form after the students are married. Students' knowledge about waste, waste hazards and waste management triggers students to have empathy for the social environment and the natural environment.

The research contributes to environmental studies, especially environmental management technology, especially in terms of building multi-stakeholder awareness in waste management.

### ACKNOWLEDGMENTS

The author would like to thank Yayasan Witama and Witanma National Plus School for allowing us to conduct research at Witama Nasional Plus School. I would also like to express my gratitude to the Postgraduate Environmental Science Study Program of Lancang Kuning University for all the facilities provided.

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## The Application of the Non-Refoulement Principle as a Form of Protection for Refugees in Semarang City



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**ABSTRACT:** This research aims to identify and analyze the handling of refugees from abroad or stateless who enter the jurisdiction of Semarang City. The 1951 Refugee Convention has set minimum standards for the treatment of refugees, including their basic rights. Besides, the 1951 Convention also prohibits expulsion and forced repatriation of people with refugee status, which is referred to as the principle of non-refoulement. This research used the socio-legal research method. The primary data used was based on observation, attendance in the field, and interviews; as well as secondary data through the study of documents, laws, and regulations, and existing concepts. The results of the research showed that even though Indonesia has so far not ratified and become a party to the 1951 Refugee Convention. On the other hand, national legislation and policies that support the implementation of the non-refoulement principle are needed, because the Indonesian State is factually faced with a large number of Foreign refugees entering Indonesia's sovereign territory have shown an increase. Policy implementation and application of the principle of non-refoulement in the context of protecting foreign refugees in Indonesia has become a serious concern of the government of the Republic of Indonesia, including the government of Semarang City.

**KEYWORDS:** Refugees; the Principle of non-Refoulement; Law Protection.

### 1. INTRODUCTION

Indonesia is the biggest archipelago country in the world. It has a very unique and strategic geographical position. The geographical location of Indonesia is between two oceans, namely the Indian Ocean and the Pacific Ocean, and the two continents of Asia and Australia. Geographically, the location of Indonesia is between two oceans and two continents. Thus, the State of Indonesia is used as a link between the continents of Asia and the continent of Australia. It also underlies Indonesia as the main transit country for refugees to go to Australia as the final country.

In addition, Indonesia as an archipelagic country has many gaps that can be exploited by illegal immigrants who do not necessarily have the same goals as refugees. Yet, it will make Indonesia a place to live to get a better life than in their home country. (Kementerian Hukum dan Hak Asasi Manusia Republik Indonesia, 2017).

The migration of residents, both within the territory of the country and those that have crossed national borders, is an event that has long existed in human history and is happening more and more frequently nowadays (Weiner, in Gung Wu, 1997). The phenomenon of human migration occurs due to several factors that encourage it, such as war (armed conflict) in the area of origin, lack of food supplies and (economic) jobs, social factors such as political pressure, race, religion, and ideology to the problem of uncomfortable climate conditions (IOM, 2015).

The entry of foreigners into the territory of a country regardless of their motives, is not automatically considered to be a refugee status. They come and enter without being equipped with immigration documents, thus they violate immigration laws from the sovereignty of the country they enter. They can only be recognized as refugees or asylum seekers if there has been a stipulation from the United Nations High Commissioner for Refugees (UNHCR). Therefore, the General Assembly of the United Nations in 1950 issued Resolution No. 428 (V), in which the Resolution asked countries in the world to cooperate with UNHCR by becoming convention participants, making special agreements with UNHCR, and assisting several other UNHCR activities – Article 2.

Legal instruments in handling refugee problems internationally, there are conventions as a form of effort to provide protection for refugees, namely: The 1951 Convention Relating to the Status of Refugees and The 1967 Protocol Relating to the Status of Refugees. Therefore, the actions taken by a country by expelling refugees is a real action against violations of international law, which prohibits sending back refugees and asylum seekers to places where they can face danger and

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persecution.

This principle is generally referred to as the non-refoulement which has been regulated in Articles 32 and 33 of the 1951 Convention. The main meaning of the non-refoulement principle is that no country may return or send refugees or asylum seekers to an area where the lives and safety of refugees or seekers' asylum are under threat (Riyanto, 2010).

Although Indonesia has not implemented a policy of ratification of the 1951 Refugee Convention and the 1967 Protocol, there are external and internal requirements to apply the non-refoulement principle. External demands can be seen in the description of international ecology that the principle of non-refoulement cannot be separated from the context of protecting human rights which has developed into a *jus cogens* or peremptory norm which is a basic principle in international law and is recognized by the international community as a norm that cannot be violated. under any circumstances. Although there is no official consensus as to which norms are *jus cogens* and how a norm achieves such status and that there is encouragement to adhere to them, it is universally accepted. Internal demands can be described in the national ecology that there is not enough ability for the government to fulfill the obligation to fulfill refugee rights because the government has not been fully present in the rights of its citizens.

The Government of Indonesia also has legal instruments that are used as a manifestation of the Indonesian government's concern for refugee problems. It is explained in Law Number 5 of 1998 concerning the Ratification of the Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment (UU CAT), Law No. . 37 of 1999 concerning Foreign Relations, Law Number 12 of 2005 concerning Ratification of the International Covenant on Civil and Political Rights 1966, Law no. 6 of 2011 concerning Immigration, Government Regulation Number 31 of 2013 concerning Immigration Presidential Regulation No. 125 of 2016 concerning Handling of Refugees from Abroad, Regulation of the Minister of Law and Human Rights of the Republic of Indonesia No.M.05.IL.02.07 of 2006 concerning Handling of Illegal Immigrants who declare themselves as Asylum Seekers or Refugees, Regulation of the Director General of Immigration Number IMI-0352.GR. 02.07 concerning Handling of Illegal Immigrants Who Declare Theyself As Asylum Seekers or Refugees, Regulation of the Director General of Immigration Number IMI 1917-OT.02.01 of 2013 concerning Standard Operational Procedures for Immigration Detention Houses.

The problem of refugees in Indonesia is briefly explained in Law no. 37 of 1999 concerning Foreign Relations in Article 27 paragraph 1 which stipulates that: "The President establishes a policy on the issue of refugees from abroad by taking into account the Minister's considerations". The elucidation of the article states: "Basically the problems faced by refugees are humanitarian problems so that the handling is carried out as far as possible to avoid disrupting good relations between Indonesia and the country of origin of the refugees".

## 2. RESEARCH METHOD

This research used a socio-legal research approach. There were two aspects studied. The first was the legal research aspect, namely in the form of law in the sense of the "norm" of statutory regulations. Legal research used a philosophical approach, a conceptual approach, and a regulatory approach (Marzuki, 2014) and the data sources are primary and secondary. Second, socio-research. namely using the law in its social context and meaning that there is an inseparable relationship between law and society, there is a close relationship between law and society as its social basis (Soekanto, 1988). The analysis technique follows an interactive model of data analysis which operates in three activity cycles, namely: data reduction, data presentation, and drawing conclusions or verification (Miles & Huberman, 1992).

## 3. RESULT AND DISCUSSION

### 1.1. Data Collection of Foreign Refugees

The growth of the flow of refugees, asylum seekers, and immigrants in Indonesia continues to grow. Based on statistical data from the UNHCR Indonesia report in Jakarta in 2023, the number of foreign refugees in Indonesia can be seen in the following table:

**Table 1: Number of Foreign Refugees in Indonesia in 2023**

Country of origin	0	5000	10000	15000
Afghanistan				
Somalia				
Myanmar				
Iraq				
Sudan				

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Others	343
TOTAL	

Source: UNHCR statistics report, February 2023.

According to the table above, the number registered with UNHCR is 12,710 consisting of 73% adults and 27% children. Of the total adults, 26% are women and 74% are men. A total of 9,378 refugees have received the first dose of the COVID-19 vaccine, while 8,162 refugees are fully vaccinated (68.2% of the refugee population is eligible for vaccination) and 65 refugees received the first booster. Of the 3,422 children registered with UNHCR, 97 children were not accompanied by their parents or other adult relatives, and 50 children were separated from their parents. A total of 1,299 vulnerable refugees received monthly subsistence allowances in February 2023. Many of them are unaccompanied by children, single women with children, and people with special needs (UNHCR, 2023). In addition to the data obtained from UNHCR regarding the presence of refugees from abroad entering the sovereign territory of the Republic of Indonesia above, specifically for the number of refugees in Semarang City can be seen in the following table:

**Table 2: Number of Foreign Refugees in Semarang City in 2022**

No	Nationality	Man	Woman	Total
1	Somalia	6	6	12
2	Myanmar	3	3	6
3	Iraq	4	2	6
4	Iran	2	1	3
5	Afghanistan	17	15	32

Source : Rumah Detensi Imigrasi (Rudenim) Semarang, Maret 2023

In 2019, the number of foreign refugees in Semarang City was 59 people, but some of them were successfully forwarded by UNHCR to countries that were ready to accept them. Thus, the total number was reduced and only 32 people remained. They are on average a family, but there are also individuals with a total of 6 people. The refugees are victims of war in their country who fled to seek asylum in a third country. Their status is still awaiting a determination from UNHCR for placement in a third country. Their waiting period in Indonesia cannot be predicted because it was fully under the authority of UNHCR and third parties or recipient countries.

In addition, at the Semarang Immigration Detention Center (Detention Center) Office, there were also 10 foreign refugees under the supervision of the Semarang Detention Center Office, namely 1 foreigner coming from Yemen; Algeria 1 person; Taiwan 2 people; Nigeria 5 people; Sri Lanka 1 person. These people have been designated as Detainees (foreign residents of Immigration Detention Centers or Immigration Detention Rooms because they have received detention decisions from Immigration Officials - Article 1 point 35 of Law No. 6 of 2011 concerning Immigration).

### 1.2. Policies for Handling Foreign Refugees in Semarang City

The refugees who arrived in Semarang City were placed first in the Immigration Detention Center (Rudenim). Some of the refugees who are declared not to have to serve a period of detention at the Immigration Detention Center will be transferred to Wisma Husada Semarang as a temporary community house until they are determined as refugees or asylum seekers by UNHCR to be distributed to certain countries. This refers to the Director General of Immigration's letter Number IMI-UM.01.01-2817 on 30 July 2018 regarding Return to the Functions of Immigration Detention Centers and the Director's Letter of Supervision and Immigration Enforcement Number IMI.5.GR.02.07-4.944 dated 30 November 2018 regarding Implementation of Return Rudenim function. Thus, the steps taken are as follows:

- a. Emptying the Rudenim (Immigration Detention Center) from asylum seekers and refugees, except for those who are subject to isolation or are in the process of being repatriated or in the process of being placed in a third country;
- b. The transfer of refugees and asylum seekers from the Detention Center to temporary shelters (Wisma Husada) is carried out in stages.

Wisma Husada is a place that was established by a private party to accommodate visiting tourists in Semarang City, but from November to December 15, 2018, it has been selected and rented as a temporary shelter for foreign refugees and asylum seekers. Therefore, the gradual transfer of refugees and asylum seekers from the Detention Center to Wisma Husada Semarang City through the protection program for overseas refugees was officially and effectively carried out by IOM in 2019.

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### 1.3. Fulfillment of Basic Needs for Refugees in Semarang City

Implementation of the fulfillment of basic rights that have been carried out for refugees placed in Wisma Husada Semarang, as follows:

#### 1. The right to a decent place to live

Foreign refugees at Wisma Husada, Semarang City, have received proper housing according to the standards set out in the Shelter Guide for Humanity issued by the Ministry of Social Affairs of the Republic of Indonesia. Wisma Husada has a building area of 285 m<sup>2</sup> and a total land area of 425 m<sup>2</sup> and 23 rooms, each of which has an area of 3x3 m<sup>2</sup>. Each room is occupied by 1 family and several unmarried refugees can apply to live alone of course with IOM approval. Good and clean bathrooms and sanitation systems have also been provided by Wisma Husada.

#### 2. Right to education

The National Regulation regarding refugees, namely Presidential Decree No. 125 of 2016 does not regulate the right to education for refugees, but foreign refugees who are at Wisma Husada Semarang, especially those who are still young, have been provided with educational facilities by IOM in collaboration with the Semarang City Government. Refugee children aged 5 – 16 years are allowed to study free of charge from kindergarten to private high school in Semarang City. The same goes for refugees over the age of 18. As many as 2 refugee children had the opportunity to receive education at kindergarten, 6 refugee children had the opportunity to attend elementary school, 9 refugee children at junior high school, and 8 refugee children at senior high school. This is actually in line with several children's rights contained in the 1989 Convention on the Rights of Children (CRC) which was ratified by the Government of Indonesia.

#### 3. Right to health

Referring to Article 26 paragraph 2 (a) Presidential Decree No. 125 of 2016 concerning the Management of Refugees, fulfilling the right to health for foreign refugees who are at Wisma Husada Semarang is quite good with indicators of the proximity of health facilities to refugee shelters, namely the Lebdosari Health Center which is only about 200 m from Wisma Husada. Any evacuees who had health problems will be referred to the Lebdosari Health Center and the Mardimulyo Clinic which is about 500 m from Wisma Husada. If refugees experience symptoms of illness that require referral to receive more intensive care, they will be rushed to Columbia Asia Hospital, which is approximately 500 m away, where the costs will be borne by IOM.

Coronavirus vaccination is also a concern carried out by the Semarang City Government for foreign refugees. The vaccination program is carried out by the Semarang City Health Office, and overseen by the International Organization for Migration (IOM) and the Regional Office of the Ministry of Law and Human Rights in Central Java. The right to proper access to health is not just the provision of health services free of charge, but also the cleanliness of the residence and a good sanitation system that has been given to refugees from abroad who are placed in Wisma Husada, Semarang.

#### 4. The right to work

Even though Presidential Decree No. 125 of 2016 explicitly does not regulate the right to work, this regulation also does not prohibit refugees from working. One of the refugees at Wisma Husada, namely A (52), originally from Afghanistan, works as a painter every day. He uses this expertise to sell his paintings by using social media as a means to market his work. Likewise, G (36), originally from Afghanistan, had the opportunity to become a sports teacher at a private school in West Semarang City. Based on the results of interviews with 32 foreign refugees at Wisma Husada Semarang City, only 2 refugees had activities to make a living. Others only rely on the monthly money received from IOM of IDR 1,300,000.00 to meet secondary and tertiary needs.

## 4. CONCLUSION

Although the government of the Republic of Indonesia has not ratified the 1951 Refugee Convention and the 1967 Protocol, it has implemented the principle of non-refoulement and the basic principles of international law *jus cogens* (peremptory norm) as norms that provide respect and protection for human rights. The Semarang City Government has provided good handling and service in managing refugees who enter the jurisdiction of Semarang City, namely in the form of fulfilling the right to a proper place to live, the right to education, the right to health, and the right to work.

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## Determinants of Community Market's Merchants' Empowerment and Wellbeing to Promote Denpasar as Local Custom Visionary-City in Bali Province



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**ABSTRACT:** This research aims at: 1) analyzing the effect of human resource, funding resource, social capital, and market infrastructure on community market's merchants' empowerment in Denpasar City, 2) analyzing the effect of human resource, funding resource, social capital, market infrastructure, and empowerment on community market's merchants' well-being in Denpasar City, 3) analysing empowerment mediating the effect of human resource, funding resource, social capital, and market infrastructure on community market's merchants' well-being in Denpasar City. The sample of this study was 193 people from 3,734 merchants as the population. The sampling technique employed stratified random sampling based on the subdistrict and the sample of this study was interviewed using accidental sampling technique. Data analysis technique used was path analysis using SEM PLS. The results of the analysis conclude that: 1) human resource, funding resource, social capital, and market infrastructure influenced positively and significantly toward community market's merchants' empowerment in Denpasar City, 2) funding resource, market infrastructure, and empowerment influenced positively and significantly toward community market's merchants' well-being in Denpasar City. However, human resource and social capital influenced positively but insignificantly toward community market's merchants' well-being in Denpasar City, 3) empowerment mediated partially the effect of funding resource and market infrastructure towards well-being and mediated fully the effect of human resource and social capital towards community market's merchants' well-being in Denpasar City.

**KEYWORDS:** social capital, funding resource, market infrastructure, empowerment, well-being

### I. INTRODUCTION

A community's well-being can be achieved if the community members are able to fulfil the needs on clothes, food, and Place to live. The government always pays attention to those things by conducting various efforts to promote the realization of the community's well-being. The fulfilment of the community's necessities related to goods and services cannot be separated from the emergence of community market which is a traditional market as an organization that continuously experiences degradation in addition to the massive technology innovation these days. Something that is never predicted previously has happened, which devastates the economy so that the economy activities weaken, due to the Covid-19 pandemic.

The impact of Covid-19 pandemic can still be experienced by all levels of community members. This condition also affects on the limited operational system of Small and Medium Micro Enterprises including the merchants of community market. Even though it has been known the resilience in facing economy deceleration, the turnover of the merchants also decreases because the transaction done in traditional market decreases as well.

Based on the result of the preliminary interview with several merchants in Denpasar City, it was stated that the turnover or sale volume was decreasing, the number of buyers was also decreasing, so that the sold commodity was also decreasing. The merchants who usually sell the goods for the tourists' souvenirs was also impacted in this pandemic era due to the smaller number of visits from both domestic and international tourists. The decreasing tourists' visit influenced the average income of the merchants which also tended to decrease.

The empowerment and well-being of the merchants in community market is not only influenced by the availability of market infrastructure which makes them and the visitors comfortable, they are apparently influenced by other factors. The factors predicted to put effect are the quality of human resource, indicated by the education level, experience, and the frequency of

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attending training programs to upgrade the business management, funding resource, social capital, market infrastructure, and also other variables that cannot be detected.

The growth of Denpasar City's Human Development Index for the past five years, from 2015 to 2019, tended to increase even though the growth percentage fluctuated and tended to decrease (BPS, 2020). This condition can also reflect the community well-being of Denpasar City which also experienced such fluctuation. Income is not only affected by input factors such as capital but also physically affected by intangible capital factor such as social capital.

(Month)

Social capital also significantly contributes to the other capitals in empowering small and medium enterprises. This is indicated by the honest conduct, obeying the established norms and rules, fear of violating the rules because there will be a penalty, and the formed networks among the merchants, consumers, and commodity distributors kept to promote the business productivity. Similar to the other capitals, productivity can also be determined by social capital (Coleman, 1988).

Education and experience reflecting human capital significantly affected company's performance (Okafor, 2012). Salwa & Mara Ridhuan (2016) propose that human resource in small and medium enterprises has different roles in business life cycle's stages. Therefore, investment in human resource contributes to the superiority of small and medium enterprises in value creation and performance excellence. The sufficient development of human resource is pretty much needed for the company's sustainability especially small and medium enterprises (Ofoegbe et al., 2013). Sharafat (2017) concludes that training and experience affect significantly on company growth, thus funding resource also becomes an important variable.

Financial resource ability has significant effect on employee's performance, playing the key role in organization performance (Bartocho, 2016). Palacios et al. (2016) display empirical evidence that internal funding resource affected positively but insignificantly towards working performance. Small business capital can come from various resources, they are personal capital, bank credit, and the combination between the two (Struky, 2011). Referring to the supporting and the contradicting research findings especially regarding the use of external funding resource on business performance, this research becomes significant to be conducted to portray the correlation among one variable and the other variables.

Based on those explanations, the objectives of this research are: 1) analyzing the effect of human resource, funding resource, social capital, and market infrastructure on community market's merchants' empowerment in Denpasar City, 2) analyzing the effect of human resource, funding resource, social capital, and empowerment on community market's merchants' well-being in Denpasar City, 3) analyzing the empowerment mediating the effect of human resource, funding resource, social capital, and market infrastructure on community market's merchants' well-being in Denpasar City.

## **II. LITERATURE REVIEW**

Individual or community's well-being is influenced by many factors, both the one originated from the individual himself or from outside of individual or community members. If humans are able to increase the possessed potential optimally, they will be able to fulfill all material and non-material necessities in conducting economic and social activities. If humans are able to create interaction with others and the surrounding environment, it can be concluded that they are capable of improving their personal potentials. If humans have the capability to conduct interaction with others well and are able to keep their relationship and protecting the environment well, it reflects social capital (Krishna and Uphoff (1999).

Humans who have sufficient social capitals and are able to promote to be better will push the increase of empowerment and well-being. Well-being is a condition where all physical and psychological needs of the household can be fulfilled according to the life level (BPS, 2007).

Measuring well-being can be done using various approaches both cardinally which is measured in rupiah value and ordinally which is measured in relatively value-in-use. According to economics theory, well-being can be approached using NeoClassic approach developed by Pigou, Bentham, Sidgwich, Edgeworth, and Marshall and the modern well-being economics approach (Stiglitz, 2011). Neo-Classic approach assumes that value-in-use is cardinal and the additional consumption increase is getting smaller in the value-in-use (diminishing marginal utility). All individuals have similar utility function so that it is meaningful to compare individual's utility value and other people's utility value. Those who devote Neo-Classic approach use optimal well-being measure if there is no individual who can be improved without making other better worse.

Community well-being as stated by Stiglitz (2011) covers dimensions of: material life standard (consists of income, consumption, and wealth), health, education, community members' activities including occupation, politics and government, social capitals namely kinship relationship and others, current and future living environments, safety problem in terms of economic and non-economic sectors.



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Well-being can also be measured from Human Development Index (HDI). The development objective is measured from a number of basic components indicating life quality. HDI as a life quality measure is shaped using three fundamental approach dimensions including long and healthy life, knowledge, and quality life. Those three dimensions are related to many aspects so that they have a wide range of definitions. To measure health dimension, life expectancy is used; to measure knowledge dimension, the combination of literacy indicator and average length of education are used; while to measure quality life, we use the indicator of community's purchase ability towards some primary necessities which is overviewed from the average of spending amount per capita as income approach representing development objective for quality life (BPS RI, 2017).

Well-being level of a community is quantitatively indicated by the income attained by the community. The higher community well-being level is portrayed by the bigger income of a community. Community income can be approached by the spending; if the income of a household is high, there is a tendency that the spending is also sufficient for bigger food and nonfood consumptions compared to the households with low income (Susenas, BPS RI 2018).

There are three empowerment dimensions which are often suggested by experts namely self-empowerment through individual action, joint empowerment which is interpersonal, and social empowerment in producing social actions. Several experts postulate that empowerment is giving the energy so that the related parties can move independently (Roebyantho et al (2007), referring to the statement of Sumodiningrat (2000). Empowerment basically contains the meaning of creating healthy and fair competition climate which will give the opportunity for small and medium enterprises to grow.

Empowerment is a critical condition to upgrade poor people's life (Alvares et al, 2018). Investing modern culture values such as hard working, economical, openness, able to show high responsibility is said to be a part of empowerment efforts (Bagong Suyanto, 2001). If an individual or community group has the knowledge, capability, and action toward the possessed potentials by individual and community group and is able to show high working ethics, empowerment can be realized. Therefore, empowerment process is prioritized on the increase of family's capability to work hard in fighting against stupidity, laziness, and poverty in a wide range of meaning (Muljono et al., 2016).

Empowerment is a social, economy, and politic change process aiming to empower and strengthen the community's Ability which can be done with cooperation to achieve the more independent and participative life so that sustainable well-being can be realized (Mardikanto, 2003). According to Sumodiningrat (2002), the efforts of empowering the community have to be viewed from three perspectives. First, the efforts have to be able to create an atmosphere or climate enabling the community's potential to grow. Second, they have to strengthen the community's potential and power (empowering). Third, they also contain the protecting power.

Ife (2002) proposed that community empowerment program is only be able to realize empowerment indicators if it is conducted following empowerment principles such as holism, sustainability, diversity, organic development, balance development, and solving harmful structure. These principles should be implemented consequently to make the empowerment program as community empowerment which can empower the community. Community empowerment program can only be able to realize empowerment indicators if it is held based on the empowerment principles.

Human resource is an important factor to increase production which later can determine empowerment and finally is able to increase well-being. Family empowerment can be increased if they can manage the human resource well. The potential possessed by family which can be managed well will be able to upgrade family well-being. Resource coming from individual capability can be seen from employee's knowledge, talent, skill, education, and experience in a company (Bontis et al., 2000). Salwa & Mara Ridhuan (2016) stated that small and medium enterprises need to differentiate human resources according to their role in different business life cycle stages to achieve the entire human resource potentials.

Human capital is categorized into three categories namely capability and potential, motivation and commitment, and innovation and learning. Capability and potential are related to current education level, professional skill, experience, attitude, personal network, values, and employee capability to develop in organization. Motivation and commitment are correlated to coordination of their own interest and company's interest while innovation and learning show employee's openness to change (Mayo, A, 2001).

Human capital concept as the community investment through education and training is a very important thing because investment in human capital refers to increasing human productivity which will refer to the positive level (Fatoki (2011). Sufficient human resource development is highly necessary for company's sustainability especially small and medium enterprises (Ofoegbe et al. (2013). Human capital is a dimension of intellectual capital based on human knowledge and their experience and can influence company value by affecting other elements (Mushrel, 2014). The results of a study conducted by Ojokuku, R.M & Sajuyigbe, A.S. (2015), Tessema (2014) showed that human resource development variable significantly influenced small and medium enterprises' performance because human capital investment is able to improve company's performance. Education and experience positively influence new company's performance according to the research findings by Sharafat (2017). The results of

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a study conducted by Eny Lestari (2015) portrayed that human capital elements (education level, motivation, and experience) significantly influenced small and medium enterprises' performance in Indonesia.

Social capital refers to social organization characteristics such as network, norms, and trust which facilitate coordination and beneficial cooperation. Business owners are able to develop their social capitals by constructing network providing external, information, support, financial, and expertise resources which enable them to mutually learn and assist each other (Cope et al., 2007).

Social capital may contribute in expanding happiness and well-being (Dowling and Fang (2007). Social capital dimensions including bonding, bridging, and linking social capital influence poor community's empowerment (Babaei, et.al, 2012). Productivity can also be upgraded by improving the role of social capital. However, if the working passion is decreasing, the productivity will also decrease. High working spirit, high working ethic, mutual trust, mutually sharing information are reflections of social capitals. If social capital decreases, the business performance also decreases, consequently business activities are also obstructed. Sharing information plays an important mediation role among three social capital dimensions (trust, network, continuous transaction) dan the increase of company's competitiveness. The forms of social capital are always correlated to social structure where the community is living. If the social capital forms depend on trust and expectation, someone is considered as honest and has good reputation will be appreciated more easily compared to the individuals with no credibility, for example to get certain loan or credit (Yustika, 2012).

### **III. RESEARCH METHOD**

This research was designed using associative quantitative approach by employing latent variables of independent and dependent variables. Community market's merchants' empowerment and well-being were influenced by several independent variables such as social capital, human resource, funding resource, and market infrastructure. Empowerment variables are mediation variable with multiple functions as the influenced variable and the influencing variable. This research was conducted in Denpasar City which had the third biggest number of markets compared to the other sub-districts in Bali Province; they are Gianyar Sub-district and Badung Sub-district.

Endogenous variable was well-being (Y2), the well-being of community market's merchants was a condition which could be showed from several community market's merchants' well-being indicators which were able to reflect respondents' well-being levels. Those indicators were: ability to fulfill family's education need (Y21), ability to fulfill family's health need (Y22), ability to hold religious ceremony (Y23), ability to increase the business's income (Y24). Empowerment variable was a mediation variable which was the empowerment of community market's merchants indicated by indicators of: ability to increase sale volume (Y11), ability to sustain and increase the number of customers (Y12), ability to manage the business's sustainability (Y13), ability to create a good working environment and protect the environment (Y14). Human resource of community market's merchants was an exogenous variable (X1) which was measured using indicators of: education level (X11), experience (X12), merchant's capability or skill (X13). Community market's merchants' funding resource (X2) (exogenous variable) was the funding resource used to conduct business activities as the merchants measured using several indicators of: personal/internal funding resource (X21), funding resource from union (X22), funding resource from Village Financial Institution (LPD) (X23), funding resource from bank (X24), other funding resources (X25). Social capital (X3) which was an exogenous variable was social capital from community market's merchants measured from the indicators of: norms (X31), trust (X32), network (X33). Meanwhile, market infrastructure variable (X4) as an exogenous variable was the infrastructure available in the merchants' place to conduct business activities measured using: parking infrastructure availability (X41), washing hands facility availability (X42), security facilities availability (X43), environment cleanliness (X44), restroom availability (X45).

The data used in this research were quantitative and qualitative data. Quantitative data were the data which could be measured with numbers in this research such as market number. The qualitative data were in the form of explanation and description related to respondents' perception supporting the analysis as they described further to strengthen the result of statistical analysis. The used data were retrieved from the primary and secondary data. Primary data in this research were the data collected directly in the field using the instrument in the form of question list or questionnaire which had been prepared. Secondary data used in this research were the data collected by some agencies such as Bali Province Department of Industry (2020), Perumda of Sewakadarma Market in Denpasar City (2020) to retrieve data related to the number of markets and merchant.

The population of this study was all merchants taken from each market representing four sub-districts in Denpasar City; 3,734 merchants were the population of the research (Perumda of Sewakadarma Market of Denpasar City, 2020). By employing Slovin formula, this research used error rate of 7% to get 193 community market's merchants in Denpasar City as the sample. The sampling technique implemented in this study was Stratified Random Sampling based on the geographical location which was

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subdistrict represented by one market each. To determine the sample unit as the interviewed respondents, the researchers employed accidental sampling technique.

This research used several methods in collecting the data (Jogiyanto, 2004) as follow: 1) non-participant observation method to collect secondary data by observing and taking a note on the information retrieved from documents originated from BPS or correlated agencies; 2) structured interview method was employed to collect primary data through an interview with market merchants as the respondents by using the questionnaire that has been previously designed.

The research instrument used in this study was a designed questionnaire. This research employed quantitative method and the data collection was conducted directly with first-person source. The first step in this research was testing the questionnaire to get the feedback whether the question items could be well-understood by the respondents. This research employed validity and reliability tests to get the picture on the eligibility of those validity and reliability tests as the criteria to become a consideration in determining the next research steps.

Validity testing is employed to measure whether or not an instrument is valid. An instrument is considered as valid if the question in the questionnaire is able to answer the measured aspect in the questionnaire. This testing was conducted using Pearson Correlation by calculating the correlation among the scores of each question item and the total score (Ghozali, 2018). One validity criterion is when the correlation among the scores of each question item and the total score had the significance level below 0.05, then the question item was considered as valid. If the correlation of the score from each question item and the total score had the significance level of above 0.05, the question item was considered as invalid. Reliability test is to measure an instrument which becomes an indicator of a variable or construct. An instrument or questionnaire is considered as reliable if someone’s answer towards the question is consistent or stable from time to time. To measure the reliability in this research, Cronbach Alpha statistical test was employed. A variable is considered as reliable if the value of Cronbach’s alpha > 0.60. Meanwhile, when the value of Cronbach’s alpha < 0.60, the variable is considered as unreliable.

This research employed quantitative analysis approach using Structural Equation Modeling (SEM) with the calculation process assisted with Partial Least Square (PLS) application using a SmartPLS software. The steps in PLS analysis technique included the conversion of structural model Path diagram to mathematic model and the conversion of measurement model path diagram to mathematic model. Constructing path diagram is the construction of inner model and outer model which was later stated in path diagram as shown in Figure 3.1 (Ghozali, 2008), (Hair et al., 2010).

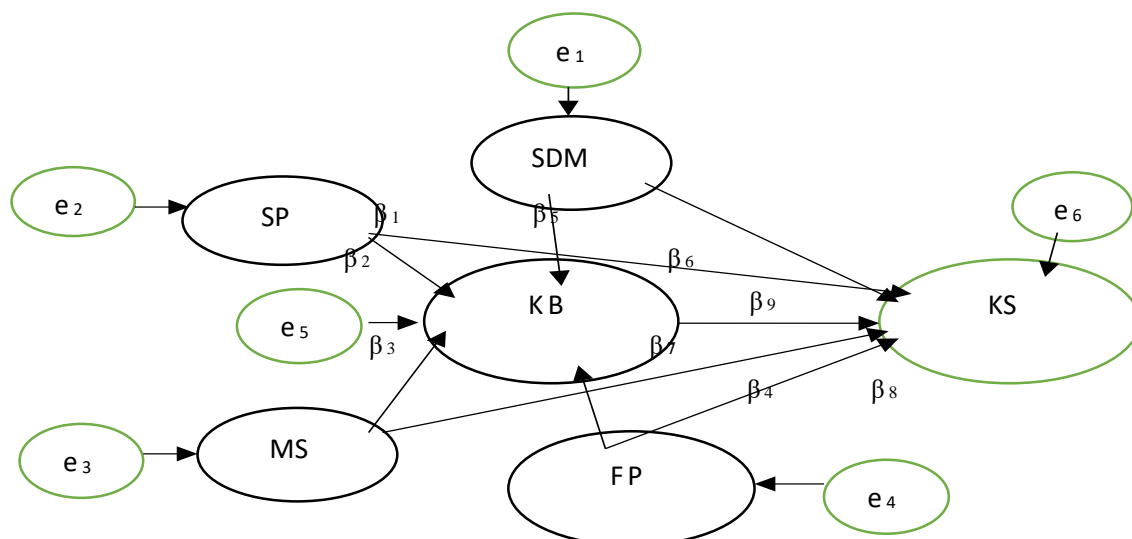


Figure 3.1 . Model Structure from PLS path diagram  
Source : Research (2021)

Note:

- SDM : Sumber Daya Manusia (Human Resource)
- SP : Sumber Pendanaan (Funding Resource)
- MS : Modal Sosial (Social Capital)
- FP : Fasilitas Pasar (Market Infrastructure)
- KB : Keberdayaan (Empowerment)
- KS : Kesejahteraan (Well-being)

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## IV. FINDINGS AND DISCUSSION

Each affiliation must include, at the very least, the name of the company and the name of the country where the author is based (e.g. Causal Productions Pty Ltd, Australia).

Email address is compulsory for the corresponding author

### A. Inferential Analysis

#### (1) Construct Validity

The method used to measure the construct validity was *Average Variance Extracted (AVE)* of each latent variable. If the score of AVE is bigger than 0.5, the construct validity is good. The analysis result indicated that the AVE score of latent variable was bigger than 0.5 as shown in Table 4.8.

**Table 4.8 AVE Scores**

Variable	AVE
Human Resource	0.562
Funding Resource	0.515
Social Capital	0.629
Market Infrastructure	0.515
Empowerment	0.548
Well-being	0.533

Source: Research 2021

Construct reliability test can be conducted through two criteria namely composite reliability and Cronbachs Alpha to Measure the construct. Composite reliability measure the reliability score among the indicator blocks of the shaping construct. A construct is considered as reliable if the composite reliability and Cronbachs Alpha scores are above 0.70. From the analysis result, it was shown that both scores to measure construct reliability were above 0.70 which could be viewed in Table 4.9.

**Table 4.9 Composite reliability and Cronbachs Alpha scores**

Variable	Composite reliability	Cronbachs Alpha
Human Resource	0.836	0.740
Funding Resource	0.827	0.725
Social capital	0.836	0.705
Market Infrastructure	0.840	0.760
Empowerment	0.823	0.715
Well-being	0.945	0.766

Source: Research 2021

#### (2) Structural Model Evaluation (Inner Model)

Structural model which is considered as fit can be seen from R<sup>2</sup> indicating goodness of fit model test. Inner model test can be seen from the score of R<sup>2</sup> in the equation among the latent variables. From the analysis result, the score of R<sup>2</sup> was shown in Table 4.10.

**Table 4.10 R<sup>2</sup> scores**

Variable	R Square
Empowerment	0.903
Well-being	0.919

Source: Research 2021

According to the score of R<sup>2</sup> as shown in Table 4.15, the score of Q<sup>2</sup> is as follow:  $Q^2 = 1 - (1-0.903) (1-0.919)$   
 $= 1 - (0.097) (0.081)$   
 $= 1 - 0.007857 = 0.992$

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The score of  $Q^2$  was 0.992 which could be interpreted that the model was good it could explain the phenomenon of community market's merchants' well-being as much as 99.2 percent. It means that the variation of community market's merchants' wellbeing level which was 99.2 percent can be explained by the latent variables of the roles of human resource, funding resource, social capital, market infrastructure, and empowerment while the rest 0.8 percent is explained by other variables outside the model. The correlation among the research variables is shown in Table 4.11.

**Table 4.11. The Influence among Variables**

Latent Variable	Coefficient	Error Standard	t-statistic	P Value	Note
$X_1 \rightarrow Y_1$	0.136	0.050	2.715	0.007	Significant
$X_1 \rightarrow Y_2$	0.102	0.070	1.452	0.147	<b>Insignificant</b>
$X_2 \rightarrow Y_1$	0.625	0.077	8.166	0.000	Significant
$X_2 \rightarrow Y_2$	0.618	0.104	5.951	0.000	Significant
$X_3 \rightarrow Y_1$	0.092	0.055	1.669	0.096	Significant
$X_3 \rightarrow Y_2$	0.073	0.078	0.932	0.352	<b>Insignificant</b>
$X_4 \rightarrow Y_1$	0.126	0.071	1.761	0.079	Significant
$X_4 \rightarrow Y_2$	0.171	0.090	1.903	0.058	Significant
$Y_1 \rightarrow Y_2$	0.626	0.092	6.817	0.000	Significant

Note:

- $X_1$  : Human Resource
- $X_2$  : Funding Resource
- $X_3$  : Social Capital
- $X_4$  : Market Infrastructure
- $Y_1$  : Empowerment
- $Y_2$  : Well-being

### a) The influence of funding resource, human resource, social capital, and market infrastructure toward community market's merchants' empowerment in Denpasar City

Human resource influenced positively and significantly towards community market's merchants' empowerment level in Denpasar City which is indicated from the t-statistics of 2.715 > t-table 1.645 or the significance score of 0.007 < 0.05. It means that the more qualified the human resource of the market's merchants is, the more capable they are in increasing the empowerment. Partially, the funding resource also influenced positively and significantly towards empowerment level which is indicated from the t-statistics of 8.166 > t-table 1.645 or the significance score of 0.000 < 0.05. Social capital also partially influenced positively and significantly toward community market's merchants' empowerment level in Denpasar City which is indicated from the t-statistics of 1.669 > t-table 1.645 or the significance score of 0.096 for two-way test or 0.043 for one-way test < 0.05. It means that the stronger the social capital possessed by the market's merchants is, the higher the empowerment level is. Market infrastructure influenced positively and significantly towards community market's merchants' empowerment in Denpasar City because the retrieved t-statistics was 1.761 which was above the t-table 1.645 or the significance score of 0.079 for two-way test and 0.039 for one-way test < 0.05. It means that the more sufficient the market infrastructure is will be able to improve community market's merchants' empowerment in Denpasar City.

The analysis result showed that human resource influenced positively and significantly towards the empowerment level of community market's merchants in Denpasar City. The merchants were highly aware that to be able to become a merchant with sufficient numbers of customers and loyal customers, they need the ability to attract the customers using a great service, friendliness, skill, experience, education even though they are not in the category of high education, will be very helpful toward their business and improve the business performance so that it can increase the empowerment level and, thus, increase their well-being. The merchants with more experience and sufficient skill in serving the customers will certainly be able to attract customers. By keeping the commitment in conducting the business and running the business diligently, they are capable in business and, in the end, it can upgrade their well-being.

Funding resource used by market's merchants influenced positively and significantly towards the empowerment of community market's merchants in Denpasar City. The easier they access funding resources to fulfill their need of business capital, the more capable they are to increase the business performance so that they can be more empowered. The funding resources

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used to conduct business activities came not only from internal resource but also external resource such as LPD, Union Organization, Bank, and other funding resources.

Social capital influenced positively and significantly towards the empowerment of community market's merchants in Denpasar City. The strong social capital is represented by norms, trust, and network which can increase empowerment. Conducting a transaction among the agents of business including among the merchants, among the merchant and commodity distributor, among the merchant and funding organization such as LPD, Union organization, Bank, and other Micro Financial Organizations can improve empowerment. Maintaining good relationship by referring to the norms which contain honesty in doing a transaction is a reflection of the strong social capital. This research supports several research as a reference like the one conducted by Maqhfiranti et al (2014) that non-physical working environment influenced positively towards the employees' performance; that the better the infrastructure used is, the better the conducted program is, which then increase productivity (Lupiyadi, 2006). Meanwhile, Coleman (1988) highlights that social capital is equal to the other capitals in increasing the productivity. Similar statement is pronounced by Okafor (2012) that human capital significantly influences company's performance while Salwa & Mara Ridhuan (2016) suggest that investment in human resource gives small and medium enterprises a superior value in terms of creation value and performance superiority. Ofoegbe *et al.* (2013) state that the sustainability of a company especially the small and medium enterprise highly needs the sufficient development of human resource. The financial resource ability has significant influence towards the employees' performance as it plays a key role in organization performance (Bartocho (2016). Palacios *et al.* (2016) portray empirical evidence that internal funding resource positively and significantly influences working performance. Small business capital can be retrieved from various resources namely personal, bank credit, and the combination between the two (Struky, 2011). Manullang (2002: 78) pronounces that the sufficient working environment availability also becomes one of the important factors which can increase productivity.

### **b) The influence of human resource, funding resource, social capital, and market infrastructure, and empowerment toward well-being**

Human resource, funding resource, social capital, market infrastructure and empowerment influencing positively

Toward well-being level was not entirely true. Human resource and social capital influenced positively but insignificantly toward the well-being of market's merchants indicated from the significance score respectively of 0.147 and 0.352 which were bigger than 0.05 but funding resource, market infrastructure, and empowerment influenced positively and significantly towards wellbeing which indicated from the significance scores of 0.000, 0.058 for the two-way test and 0.029 for one-way test and 0.000 was smaller than 0.05. It means that the available and accessible funding resources can fulfill the capital insufficiency in conducting a business so that they can utilize the provided funding resources to be able to purchase the bigger amount and variety of commodities according to the consumers' needs. If they are able to be provided and sold, the increasing income will lead to the increased well-being as well. The more adequate market infrastructure is and the more empowered they are in running a business, the more capable they are in getting the increased income and, thus, become more prosperous

The analysis result indicated that funding resource, market infrastructure, and empowerment influenced positively and significantly toward the well-being of community market's merchants in Denpasar City. However, human resource and social capital influenced positively but insignificantly toward the well-being of community market's merchants in Denpasar City so that they cannot be concluded as influencing well-being significantly. If the community market's merchants are able to utilize the funding resources to enhance the capitalization used to run a business and increase the number of the commodities, the sale can also increase and, consequently, escalate the well-being. It is a similar case if market infrastructure is available sufficiently, the merchants can conduct their business well because they get clean, safe, and comfortable environment. Therefore, the consumers can also make a transaction comfortably which also influence the income increase and lead to the increased merchants' well-being.

Social capital directly influenced insignificantly towards well-being even though it was directed to the positive side

According to the hypothesis. It means that social capital possessed by the market's merchants which is measured using norms, trust, and network was not able to increase well-being directly yet. The very strong social capital possessed by the market's merchants have to be maintained well and increased continuously because it can improve independence in conducting business so that the well-being can also increase. If empowerment is able to be improved in any way, the well-being can also increase. Similar case happens to human resource which influenced insignificantly towards well-being directly also need to be increased in term of the quality since it is capable to enhance empowerment and empowerment enhancement will lead to the increased well-being. This research finding is in line with the previous research conducted. The result of a research conducted by Mardikanto (2003) explains that empowerment can embody well-being because the empowerment is a process of social, economic, and

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political changes in order to empower and strengthen the community’s capability which can be done through cooperation so that they can achieve the more independent and participative life and sustainable well-being can be actualized.

### c) Indirect influence of social capital, funding resource, human resource, and market infrastructure mediated by the empowerment level toward the well-being of community market’s merchants in Denpasar City

Empowerment mediating the influence of human resource, funding resource, social capital, and market infrastructure was proven. Empowerment was able to mediate partially the influence of funding resource and market infrastructure toward well-being and mediate fully the influence of human resource and social capital toward the well-being of community market’s merchants in Denpasar City. The analysis result correlating the latent variables can be shown through the analysis result in Table 4.11 and the full model figure shown in Figure 4.1.

The analysis result indicates that the empowerment level mediated partially the influence of funding resource and Market infrastructure toward well-being and mediated fully the influence of human resource and social capital toward the wellbeing of community market’s merchants in Denpasar City. The strong social capital and qualified human resource are able to escalate the empowerment which, then, influenced well-being. To support Denpasar as a city with local custom knowledge, they need to maintain the environment, safety, comfort, and the sufficient market infrastructure availability. By keeping the market condition as great as possible, Denpasar City can be realized as a city with local wisdom according to the vision portrayed all these years.

Community market has been available to provide the materials for daily primary needs and sell the materials for the Religious ceremonies’ need which are closely related to the local wisdom. The visiting tourists can also purchase souvenirs sold in community markets to bring to their homelands. Therefore, community markets are able to synergize the primary needs and the tourists’ need and, thus, can keep the environment to stay clean and cozy. Also, implementing the health protocols in the pandemic era is an effort that has to be applied accordingly. These research findings are also supported by previous research’s findings that social capital can also influence the entrepreneurship orientation of industry business’s agents (Gandhiadi et al., 2017). The research findings of Yuliarmi *et al.*, (2020) indicate that union’s social capital and empowerment influenced positively and significantly toward well-being.

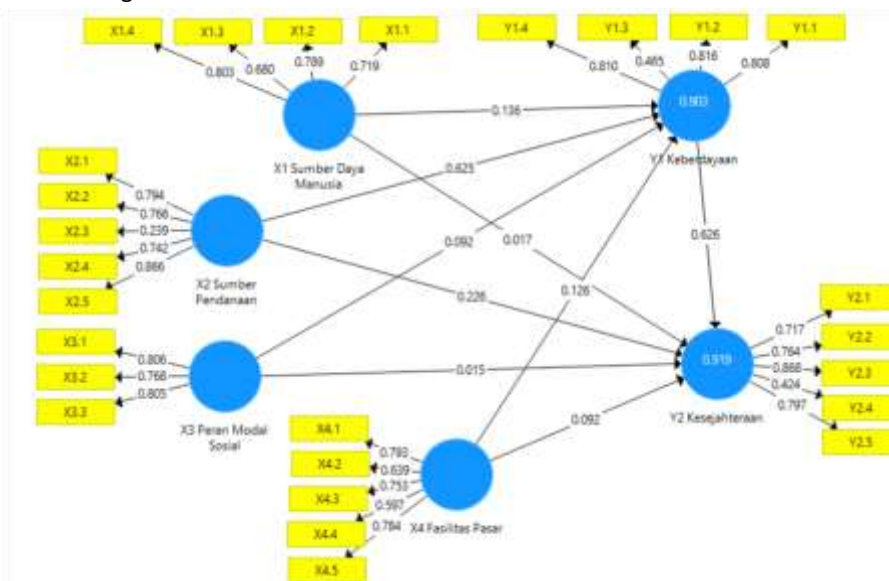


Figure 4.1. Full Model Analysis

## V. CONCLUSION AND SUGGESTION

### A. Conclusion

Based on the findings of the analysis and the discussion done, it can be concluded as follow:

- 1) Human resource, funding resource, social capital, and market infrastructure influenced positively and significantly toward community market’s merchants’ empowerment level in Denpasar City.
- 2) Funding resource and market infrastructure influenced positively and significantly toward community market’s merchants’ well-being while human resource and social capital influenced positively but insignificantly toward community market’s merchants’ well-being in Denpasar City.

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- 3) Empowerment mediated partially the influence of funding resource and market infrastructure and mediated fully the influence of human resource and social capital toward community market's merchants' well-being in Denpasar City.

### **B. Suggestion**

The suggestions delivered in this research are as follow:

- 1) The community market's merchants should be able to optimize the use of funding resources to increase the capitalization in conducting business activities.
- 2) It is suggested to keep upgrading the quality of human resource because it is very important to improve the business's performance.
- 3) It is suggested to improve the role of social capital in doing a transaction because it can escalate empowerment.
- 4) Market management team should be able to improve the availability of sufficient market infrastructure so that the improvement on the service to market's merchants can be achieved.

### **STATEMENT OF GRATITUDE**

As the statement of gratitude from the bottom of our heart, the researchers would like to deliver their gratitude to LPPM of Udayana University for the approval of this research hibah. This article is the result of hibah research funded by DIPA PNBP of Udayana University Academic Year of 2021, based on the Agreement Letter of Research Implementation Appointment Number: B/96-295//UN 14.4.A/PT.01.05/2021.II/LT/2019 on 3rd of May 2021.

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## Science Learning Strategies in Madrasah Ibtidaiyah Using the STM Approach Model



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**ABSTRACT:** Education today requires students to be more active, not only book material, but also extensive knowledge of environmental issues. Thus, environmental problem solving skills to achieve a better future life so students must have a high environmental awareness. Therefore, in effective learning, it is necessary to apply modeling strategies and approaches, namely science-based learning, community technology and science education. Since the study of natural sciences and environmental studies are interrelated, it is important to approach it with the study of environmental problems. The purpose of this study is to identify the right steps or strategies for science learning in MI using the STM approach model. The method used in this article is literature research, or commonly called literature research, which examines sources that have been researched in relation to the questions asked in this study, and analyzes a book or other literature, such as newspapers and reports, which also examines the questions asked. The results of the study explain the understanding, strategy, advantages and disadvantages of the learning model according to the STM approach. Therefore, by paying attention to the advantages and disadvantages of this STM approach model, teachers can use the STM approach model in MI science learning activities.

**KEYWORDS:** Learning Strategy, Science, STM Approach Model

### INTRODUCTION

Education plays an important role in improving the quality of human resources. Education can be used as a tool to survive in the midst of progress and development of science and technology. The government has made efforts to improve the quality and quantity of education and learning in schools through various activities such as changes in the national education system, government regulations, national education system, school facilities and infrastructure, and learning orientation. With the existence of the Manpower Law, other efforts are made to improve work professionalism, for example the application of subject mastery, learning understanding. In the field of curriculum, periodic and continuous additions were made, for example innovative efforts were made to improve the 1994 curriculum into a competency-based curriculum (KBK). The curriculum was continued and refined in the Education Unit Level Curriculum (KTSP), even KTSP was again refined into the curriculum (K13) (2013) and is now being refined again with the Merdeka curriculum.<sup>1</sup>

Education plays an important role in educating the nation's generation. Education is closely related to learning, formal education in learning usually takes place in schools. Science education is a subject that appears at every level of education and provides information about the world and its content, which has undergone serious development in modern times, especially in science education which focuses on environmental awareness. The main goal of science education today is to understand the essence science, technology and its interaction in society. Science education will be more environmentally friendly when aligned with learning models and approaches. It can be more effective in conveying understanding to students. The models and approaches used in this study are tools or elements for designing each policy milieu.

The objectives of this study are first, knowing the implementation of learning using the STM (Science Technology Society) learning model with a science education approach to continue to improve environmental care attitudes in students. Second, knowing the activities of students during learning using the STM (Science Technology Society) learning model with a science

<sup>1</sup> Markus Palobo dan Yonarlianto Tembang, "ANALISIS KESULITAN GURU DALAM IMPLEMENTASI KURIKULUM 2013 DI KOTA MERAUKE," *Sebatik* 23, no. 2 (1 Desember 2019): 307–16, <https://doi.org/10.46984/sebatik.v23i2.775>.

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education approach to diversify. Third, knowing the influence of the STM (Science Technology Society) learning model with a science education approach to continue in improving environmental care attitudes in students.

Learning in the 21st century requires students to be more active in learning not only involving knowledge in the material books, but also requires extensive knowledge directly from existing environmental problems. Thus, they can have the skills to respond to and solve environmental problems that occur in order to achieve a better future life. In this case, students who have a low environmental care attitude will tend not to pay attention to their own hygiene. Many students do not realize how important it is to protect the environment to avoid dangerous diseases and can also keep the earth awake from environmental pollution. The learning model in environmental materials so far has not varied and still looks conventional because it only explains the material. Thus, an effective model strategy and approach to learning is needed to be applied is community science-technology-based learning.

Some of the difficulties identified as factors causing the lack of science learning outcomes are teacher-centered learning and lack of physical activity of students in the learning process.<sup>2</sup> In learning, students are often faced with a lot of material that must be memorized without being given the opportunity to understand the material, so that even though students learn a lot, they are not able to provide meaning from the learning.<sup>3</sup> This resulted in low learning achievement in the field of science. Many students simply memorize concepts, record what the teacher lectures, are passive, and rarely use prior knowledge as a basis for lesson planning. Previous research shows that there are still several obstacles that prevent teachers from making changes to conventional learning patterns consistently.<sup>4</sup> These obstacles include material that is too dense and benchmarks for educational success in schools that are more focused on the final results. Many teachers are reluctant to use innovative learning models and still often use conventional methods. Based on the above problems, it is necessary to update the learning system applied in the classroom. The learning system must be designed in such a way that the learning process can take place conducive so that there is an increase in student learning outcomes, especially in science subjects. To apply good learning, contextual learning is needed, which can improve the quality of thinking, thinking attitudes, personal qualities, and the ability to apply concepts or applications of concepts and knowledge to everyday situations. Science Technology Society (STM) is an alternative learning model that can be used in classroom management and learning.<sup>5</sup>

Learning Science Technology Society is an inseparable part of human life, both as individuals and groups. Almost every aspect of the life of ultramodern society today is in direct contact with problems that contain issues of science, technology, and society. According to previous research, the advantage of the STM model in science learning is the enactment of the constructivist learning model. This learning model emphasizes the process of gaining knowledge and is student-based active and practicing higher-order thinking skills. The STM learning model will recognize issues in society that are adjusted to the progress of science and technology that can make students think comprehensively and critically in finding solutions and ideas in solving problems that will affect students' abilities.<sup>6</sup> As one of the constructivist learning models, the application of the STM learning model requires learning strategies based on constructivism as well.

Based on the above problems, it is necessary to update the learning system implemented in the classroom. The learning system should be designed in such a way that the learning process can take place conducive so that there is an improvement in student learning outcomes, especially in science subjects. To be able to apply good learning, contextual learning is needed, which can provide improvements in the quality of thinking, thinking attitudes, special qualities, and the ability to apply concepts or

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<sup>2</sup> Kerri Donohue, Gayle A. Buck, dan Valarie Akerson, "Where's the Science? Exploring a New Science Teacher Educator's Theoretical and Practical Understandings of Scientific Inquiry," *International Journal of Research in Education and Science* 6, no. 1 (8 November 2019): 1, <https://doi.org/10.46328/ijres.v6i1.571>.

<sup>3</sup> Ii Bidayah, "UPAYA MENINGKATKAN KEMAMPUAN BELAJAR SISWA MELALUI PENDEKATAN KETERAMPILAN PROSES," *Jurnal Educatio FKIP UNMA* 5, no. 2 (11 Desember 2019): 107–14, <https://doi.org/10.31949/educatio.v5i2.21>.

<sup>4</sup> A Muspikawijaya, Iswari, R., & Marianti, "Analisis Kesulitan Peserta Didik SMA/MA Kabupaten Luwu Timur dalam Memahami Konsep pada Materi Metabolisme Sel," *Journal of Innovative Science Education* 6, no. 2 (2017): 252–63, <https://journal.unnes.ac.id/sju/index.php/jise/article/view/15439>.

<sup>5</sup> Anggit Grahito Wicaksono, "PENYELENGGARAAN PEMBELAJARAN IPA BERBASIS PENDEKATAN STEM DALAM MENYONGSONG ERA REVOLUSI INDUSTRI 4.0," *LENSA (Lentera Sains): Jurnal Pendidikan IPA* 10, no. 1 (25 Mei 2020): 54–62, <https://doi.org/10.24929/lensa.v10i1.98>.

<sup>6</sup> E. R. Annisa., "Pengaruh Model Pembelajaran STM terhadap kemampuan berpikir kritis dan sikap peduli lingkungan," *Jurnal Pendidikan Matematika Dan Sains* 4, no. 2 (2017): 98–105, <https://doi.org/10.21831/jpms.v5i2.14409>.

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applications of concepts and knowledge in everyday situations. Science Technology Society (STM) is a learning model that can be used as an alternative in classroom management in learning.<sup>7</sup>

Learning is also evident between the STM learning model and the conventional learning model has a different character. This difference in character will have consequences on the activities and results of mastering the concepts owned by students, and this is thought to affect student learning outcomes. However, the STM learning model in science learning on learning outcomes cannot be disclosed. Therefore, this study aims to analyze learning strategies with the Community Science Technology (STM) learning model on the results of student learning.<sup>8</sup>

### RESEARCH METHOD

This research method uses library research methods, in this research studies or documents are taken from various sources such as journals, books, and articles related to problems that need to be solved. This activity is carried out systematically to collect, process, and conclude data using certain methods or techniques to find answers to problems.<sup>9</sup>

Data collection techniques used in this study are through journals and books related to research literature. The data analysis used is content analysis. Data collection techniques are used to document by studying data related to things or variables in the form of records, books, scientific articles, journals and others. While data analysis techniques through data reduction, data visualization and conclusions.<sup>10</sup>

### RESULT AND DISCUSION

1. Based on the results of research from Atikah, Rahmah<sup>1\*</sup>, Wirawan, Fadly<sup>2</sup>, Rahmi Faradisya Ekapti<sup>3</sup>, Titah Sayekti<sup>4</sup>, Ulinnuha Nur Faizah<sup>5</sup> with the title of the article The Influence of Community Science Technology Models and ESD Approaches in Increasing Environmental Awareness states that the STM learning model with an ESD approach is known to be able to facilitate student activities in an attitude of environmental concern. This is seen in terms of the application of integration between the STM learning model and the ESD approach in this study is said to have been in accordance with the planned results. Based on the results of research conducted by Atikah Rahmah et al, obtained data on the average value of environmental concern attitudes distributed by the N-gain test, namely the average experimental class of 48.4 and the average control class of -4.48. This average result shows that the attitude of environmental concern of students in using the STM learning model with the ESD approach and with the conventional learning model there are differences. Thus, it is said that there is an increase (Suarni et al., 2021) in environmental concern attitudes in students. Based on the output results of the Man-Whitney Test, the significance value of Asymp. Sig. (2-tailed) which is  $0.000 < 0.05$  thus based on the previous exposure it can be seen that the hypothesis taken is  $H_0$  rejected and  $H_a$  accepted. With this statement, it can be seen that there is a difference in the average increase in environmental awareness attitudes among students in using the STM learning model with an ESD approach and using conventional models in MTs Negeri 1 Ponorogo.<sup>11</sup>
2. Based on the results of research and journal discussions from Made Gautama Jayadiningrat<sup>1\*</sup>, I Wayan Widiana<sup>2</sup>, Nyoman Wiraadi Tria Ariani<sup>3</sup>, Ni Komang Widiani<sup>4</sup> with the title of the article Learning Model of Community Science Technology (STM) AND Authentic Assessment of Student Learning Outcomes in 2022 shows that STM learning models and authentic assessments have a significant positive influence on science learning outcomes. The STM learning model integrated with project assessment gives the best results. This combination is very suitable to be applied to science subjects in elementary schools because the model accommodates the characteristics of science education. The STM learning model can explore students' curiosity towards science and technology issues through the stage of extracting science and technology issues.

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<sup>7</sup> Grahito Wicaksono, "PENYELENGGARAAN PEMBELAJARAN IPA BERBASIS PENDEKATAN STEM DALAM MENYONGSONG ERA REVOLUSI INDUSTRI 4.0."

<sup>8</sup> Made Gautama Jayadiningrat dkk., "Model Pembelajaran Sains Teknologi Masyarakat (STM) DAN Penilaian Autentik terhadap Hasil Belajar Siswa," *Jurnal Pedagogi dan Pembelajaran* 5, no. 3 (2 November 2022): 394–402, <https://doi.org/10.23887/jp2.v5i3.50268>.

<sup>9</sup> A Sari, M., & Asmendri, "Penelitian Kepustakaan (Library Research) Dalam Penelitian Pendidikan Ipa. Natural Science: Jurnal Penelitian Bidang Ipa Dan Pendidikan Ipa," *Jurnal Penelitian Bidang Ipa Dan Pendidikan Ipa* 6 (2020).

<sup>10</sup> M. Zed, *Metode Penelitian Kepustakaan*, 2 ed. (Jakarta: Yayasan Obor Indonesia, 2008).

<sup>11</sup> Rahmah<sup>1\*</sup> Atikah dkk., "Pengaruh Model Sains Teknologi Masyarakat dan Pendekatan ESD dalam Meningkatkan Kepedulian Lingkungan," *Jurnal Tadris IPA Indonesia* 1, no. 2 (2021).

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While project assessment allows children to assimilate and accommodate stimuli from their environment, interact with objects, observe, research, and think so as to improve their cognitive abilities.<sup>12</sup>

3. Based on the results of research and journal discussion from Renold, Mohammad Jamhari, and Amran Rede, students of the In-Service Teacher Program, Faculty of Teacher Training and Education, Tadulako University with the title of the article Improving Student Learning Outcomes through a Community Science Technology (STM) Approach in Science Lessons The Subject of Water Cycle of Class V Students of SDN 2 Dataran Bulan It can be concluded that: the use of STM approach can improve students' learning ability. This can be seen from the observation indicators of teacher activity and student performance where in cycle I it was included in the less category, but in cycle II it increased to the good category. Based on the results of the study, it shows that the use of the STM approach can improve the learning outcomes of grade V students at SDN 2 Dataran Bulan Tojo una-una Regency. This can be seen in classical completeness in cycle I only reached 45%, increased to 90% in cycle II and classical absorption in cycle I only amounted to 62.50%, increased to 81.50% in cycle II. Therefore, it has met the predetermined completeness standard of 80%.<sup>13</sup>
4. Based on the formulation of the problem, research results, and discussion in research conducted by Tya Pranita<sup>1</sup>. Warsiti<sup>2</sup>. Moh. Chamdani<sup>3</sup> FKIP student, PGSD Universitas Sebelas Maret, Surakarta with the title of the article Use of Community Science Technology Approach in Improving Science Learning in Elementary Schools in 2013 it can be concluded that: (1) The use of the STM Approach which is implemented appropriately in accordance with the learning implementation plan by applying the 5 steps of the STM approach, namely invitation, concept formation, concept analysis, concept solidification and research can improve learning Science students of grade V SD Negeri 5 Bumirejo; (2) The use of STM learning approach can improve science learning for grade V students of SD Negeri 5 Bumirejo Kebumen for the 2012/2013 school year<sup>14</sup>

Strategy comes from the Greek word *strategos* which means an effort to achieve a victory in a war. Initially the strategy was used in the military environment, but the term strategy is now used in various fields that have relatively the same essence, including being adopted in a learning context, which is known as a learning strategy. Strategy is an effort to gain success and success in achieving goals. In the world of education, strategy can be interpreted as a plan, method, or series of activities designed to achieve a particular educational goal. That is, strategies are plans, methods and series of activities designed for learning purposes. Learning itself is defined as a two-way communication process, teaching is carried out by the teacher as an educator, while learning is carried out by students or students. Kozna in Hamzah generally explains that learning strategies can be interpreted as any selected activity, namely those that can provide facilities or assistance to students toward achieving certain learning objectives. Gropper in Hamzah said that learning strategy is the selection of certain types of exercises that are in accordance with the learning objectives to be achieved. Referring to the several opinions above, learning strategies can be interpreted narrowly and broadly. Narrowly, the strategy has similarities with the method, which means a way to achieve the learning objectives that have been set. Broadly speaking, strategy can be interpreted as a way of determining all aspects related to achieving learning objectives, including planning, implementation and assessment.

The word science comes from the Latin word *scientia* which means "I know". In English means knowledge (natural sciences). Whereas in Indonesian it is called Natural Sciences or briefly known as IPA. Science can be interpreted as science that studies the causes and effects of events that occur in nature. But there are many events that IPA cannot explain. Natural Science (IPA) is basically related to a systematic way of exploring nature, so that Natural Science is not just mastering a body of knowledge in the form of facts, concepts or principles but also a process of discovery. Therefore, it can be concluded that science is a collection of knowledge about natural objects obtained in certain ways. As Tatik Suharingrum quoted from Carin explained that "natural science is a collection of knowledge that is arranged systematically and which is learned for someone's use is generally limited to natural phenomena". Natural Science (IPA) is the result of human activity in the form of organized knowledge, ideas and concepts about the natural environment obtained from experience through a series of scientific processes which include investigation, preparation and testing of ideas. Science education is intended as a way for students to learn about themselves and the environment, and develop it further by applying it in everyday life. The learning process emphasizes providing direct experience to develop skills in scientific exploration and understanding of the natural environment. Science education aims to help students better understand the natural world around them. Science is needed in everyday life to meet human needs by solving identifiable

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<sup>12</sup> dan Amran Rede Renold, Mohammad Jamhari, "Meningkatkan Hasil Belajar Siswa Melalui Pendekatan Sains Teknologi Masyarakat (STM) Pada Pelajaran IPA Pokok Bahasan Daur Air Siswa Kelas V SDN 2 Dataran Bulan," *Jurnal Kreatif Tadulako Online* 1, no. 2 (2013).

<sup>13</sup> Tya Pranita<sup>1</sup> dkk., "PENGUNAAN PENDEKATAN SAINS TEKNOLOGI MASYARAKAT DALAM PENINGKATAN PEMBELAJARAN IPA DI SEKOLAH DASAR," 2013.

<sup>14</sup> Zainuddin Desi Suryani, Rosnita, "PENGARUH PENDEKATAN SAINS TEKNOLOGI MASYARAKAT TERHADAP HASIL BELAJAR SISWA PADA PEMBELAJARAN IPA DI KELAS IV," *FKIP, UNTAN, Pontianak*, 2015.

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problems. The application of IPA must be done carefully so as not to have a negative impact on the environment. At the SD/MI level, it is hoped that the focus will be on learning Salingtemas (Science, Environment, Technology and Society) to learn from experience in designing and creating works through the rational application of scientific concepts and scientific work skills. .

Scientific learning emphasizes the provision of direct learning experiences. In this learning process, students are facilitated to develop several process skills and scientific work to gain scientific knowledge about themselves and the natural environment. These process skills include: observing skills with all senses, using tools and materials correctly, always paying attention to work safety, asking questions, classifying data, interpreting data, communicating achieving results in various ways and digging and filtering relevant factual information to test ideas or solve day-to-day problem solving This. There are six characteristics of effective science learning, including:

1. Facilitating students' curiosity.
2. Providing opportunities to present and acquire scientific experiences and knowledge.
3. Providing means to demonstrate abilities.
4. Providing operational options.
5. Providing opportunities to explore the natural environment.
6. Providing opportunities to discuss observations.

In scientific learning, teachers need to be open-minded, highly creative, have reliable methodological skills, high self-confidence, and the courage to present and develop materials. Students themselves need to have relatively good academic and creative abilities. Because science learning emphasizes analytical skills (breakdown), associative skills (connection), and discovery and construction skills (finding and exploring).

According to the 2013 Curriculum (Kurtilas), science learning in Elementary Schools (SD) and Madrasah Ibtidaiyah (MI) is integrated with other subjects, especially Indonesian language, science, social studies, civic education, and character education through a thematic learning approach. In the 2013 Curriculum, the concept of science is presented as a means of systematic exploration of nature, not only as a body of knowledge consisting of facts, concepts, and principles, but also as a process of discovery.

Functions and Objectives of Science The function of science subjects in elementary schools and madrasah ibtidaiyah is to master the concepts and benefits of science in daily life, with the following objectives:<sup>15</sup>

1. Instilling knowledge and scientific concepts that are useful in daily life.
2. Instilling curiosity and a positive attitude towards science and technology.
3. Developing process skills to investigate the surrounding environment, solve problems, and make decisions.
4. Participating in the preservation and conservation of the natural environment.
5. Developing awareness of the interrelationships between science, the environment, technology, and society.
6. Appreciating nature and its orderliness as one of God's creations.

The objectives of science learning are for students to have the following abilities:<sup>16</sup>

1. Acquiring belief in the greatness of God Almighty based on the beauty and orderliness of His creation.
2. Developing knowledge and understanding of scientific concepts that are beneficial and applicable in daily life.
3. Developing curiosity, a positive attitude, and awareness of the interrelationships between science, the environment, technology, and society.
4. Developing process skills to investigate the surrounding environment, solve problems, and make decisions.
5. Increasing awareness to participate in the preservation and conservation of the natural environment.
6. Increasing awareness to appreciate nature and its orderliness as one of God's creations.
7. Acquiring knowledge, concepts, and skills in science as a basis for continuing education to junior high school.

STM Approach Model The STM (Science, Technology, and Society) approach is a learning approach that focuses on understanding the curriculum by considering the issues and problems faced by students or society in their daily lives, involving elements of science and technology. This approach emphasizes discovery/inquiry and problem-solving methods as the process of explaining natural phenomena and solving problems faced by humans in adapting to the environment/nature. The explanations generated from this approach will raise new questions that need to be answered again, and problem-solving solutions can create new problems that need to be solved again. The characteristics that distinguish the STM approach from other approaches include starting with relevant issues/problems related to the content of the subjects and students' interests, involving students in decision-

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<sup>15</sup> Sari, M., & Asmendri, "Penelitian Kepustakaan (Library Research) Dalam Penelitian Pendidikan Ipa. Natural Science: Jurnal Penelitian Bidang Ipa Dan Pendidikan Ipa."

<sup>16</sup> Grahito Wicaksono, "PENYELENGGARAAN PEMBELAJARAN IPA BERBASIS PENDEKATAN STEM DALAM MENYONGSONG ERA REVOLUSI INDUSTRI 4.0."

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making and considering information about scientific and technological issues, integrating learning from various curriculum scopes, and developing scientific, technological, and social literacy. The goal of science education with the STM approach is to prepare students to become citizens and members of society who have the ability to investigate, analyze, understand, and apply scientific and technological concepts, principles, and processes in real situations, make changes, make appropriate decisions regarding issues/problems involving science and technology, plan.

The learning approach with STM (Science, Technology, and Society) begins by introducing science through questioning nature or posing questions about nature, while technology starts by solving problems faced by humans in adapting to nature. Some strategies that can be used include:

1. Inviting students to compare and differentiate between science and technology.<sup>17</sup>
2. Presenting real-life examples of how scientific knowledge and technology can be used by society and individuals.
3. Explaining the global perspective on the interaction between science, technology, and society.
4. Presenting knowledge about science and technology in the context of students' daily lives.
5. Introducing decision-making strategies and providing opportunities to use them in STS (Science, Technology, and Society) issues.
6. Presenting comprehensive science and technology materials, such as facts, laws, theories, and simplified assumptions.
7. Giving students opportunities to learn how to access and disseminate relevant information for decision-making processes.
8. Involving team teaching that includes various disciplines, such as community members.
9. Using complementary learning strategies to enlighten values, ideas, and rational thinking, involving peers, parents, and experts.
10. Helping students self-motivate in exploring values, emotions, data, and skills related to scientific events.
11. Selecting learning strategies and assessment techniques that can help students develop their skills and knowledge.

In science learning using the STM approach, there are several aspects that need to be emphasized and integrated proportionally, namely:<sup>18</sup>

1. Students' ability to ask questions to nature and find answers.
2. Students' ability to recognize issues or problems faced by society and seek solutions.
3. Mastery of scientific knowledge in science and skills in technology and the ability to apply them in daily life.
4. Paying attention to values and social-cultural contexts of society.
5. Having knowledge of local, personal, and global social-cultural attitudes and values.

The STM approach aims to activate students in activities of solving identified issues or problems so that students can:<sup>19</sup>

1. Connect what they learn with what they discover or encounter in daily life.
2. Pay attention to the development of science and technology based on discovered facts and see the relevance between technological benefits and scientific concepts.
3. Pose unexpected questions.
4. Identify possible causes of what is observed and the effects of something on what is observed.
5. Continuously generate new ideas or concepts.
6. Become more interested in what is being learned.
7. Gain a deeper understanding of science as the physical world.
8. Consider the teacher as a facilitator rather than an informant.
9. Regard science as a tool for solving problems, including problems in daily life.
10. Consider the scientific process as a skill that can be used.
11. Recognize the need to develop the scientific process to tackle the problems encountered.
12. View the scientific process as a necessity.

The aspects emphasized in students through the STM approach are as follows:

1. Scientific knowledge, including understanding facts, concepts, laws, principles, theories, and hypotheses used by scientists.
2. Scientific processes, including how scientists think and work, such as observing and explaining, classifying and organizing

<sup>17</sup> Fina Fakhriyah, Siti Masfiah, dan F. Shoufika Hilyana, *TPACK dalam Pembelajaran IPA* (Penerbit NEM, 2022).

<sup>18</sup> Izzatin Kamala, "Pembiasaan Keterampilan Berpikir Kritis Sebagai Sarana Implementasi Sikap Spiritual Dalam Pembelajaran IPA Tingkat Sekolah Dasar," *Al-Bidayah: Jurnal Pendidikan Dasar Islam* 11, no. 1 (30 Juni 2019): 1–30, <https://doi.org/10.14421/al-bidayah.v11i01.187>.

<sup>19</sup> Reza Martani Surdia dkk., "Inisiasi Pemanfaatan Teknologi Informasi Geospatial dalam Penyusunan Peta Desa Berbasis Partisipatif Masyarakat," *E-Dimas: Jurnal Pengabdian kepada Masyarakat* 13, no. 2 (29 Juni 2022): 312–17, <https://doi.org/10.26877/e-dimas.v13i2.5724>.



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data, measuring and graphing, understanding and communicating, concluding and predicting, formulating and testing hypotheses, identifying and controlling variables, interpreting data/information, creating simple instruments and tools, and modeling.

3. Creativity, including visualizing and producing mental images by combining objects and ideas in new ways, providing alternative explanations or using extraordinary objects/ideas, solving problems with appropriate/unique actions, designing tools and machines, generating extraordinary ideas, and testing new tools for the explanations created.
4. Attitudes, including developing a positive attitude towards science, self-confidence, motivation, sensitivity, responsiveness, empathy, personal expression of feelings, and making decisions on environmental and social issues.
5. Application/relevance, including demonstrating examples of scientific concepts in everyday life.

### CONCLUSION

Finally, we can conclude that science learning with the STM approach is learning that connects science with technological and societal issues or problems and involves students directly and proactively in efforts to solve these issues or problems faced in daily life. Learning that can align individual and societal needs for progress and survival, thus the STM approach is directed towards scientific (science) and technological literacy for all. Based on the results of the conducted research, there are several recommendations as follows the implementation of the STM approach can be used in the teaching and learning process because it can improve the quality of science learning. Students can develop their potentials such as creativity, curiosity, independence, and collaboration. Schools should introduce more innovative approaches such as the STM approach and others to teachers.

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## The Effect of Drilling Training on Improving the Balance of Badminton Athletes



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**ABSTRACT:** This study aims to determine the effect of drilling training on improving the balance of badminton athletes. The benefits of this research, 1) theoretically this research opens a paradigm in the field of coaching in general and specifically in badminton sports to use a variety of forms of exercise, 2) this research is expected to add knowledge to the coaches so that they choose a form of exercise that is simple but can improve various physical conditions, 3) as a reference value for the quality of further research. This study used an experimental method with a one group pretest-posttest research design. The population in this study were 10 badminton athletes PB.PT. One Asahan. The sample in this study were 10 badminton athletes PB.PT. One Asahan with total sampling. Data collection techniques are carried out measuring balance with a strok stand measuring instrument. The data analysis technique used is using SPSS 23 software to test the Independent T-Test. The results showed that there was an increase in drilling training on improving the balance of badminton athletes with a sig value (2-tailed)  $p < 0.00 < 0.05$ .

**KEYWORDS:** Drilling training, balance, badminton

### I. INTRODUCTION

The development of badminton in Indonesia is very good at winning championships in various world championships (Santoso et al., 2017). For the Indonesian people, badminton is one of the sports that is widely favored by all levels of society and this sport can be played by groups of children to adults, both men and women, in addition to being a recreational sport, the role of badminton is unquestionable because it has been able to bring the Indonesian people to the top of world-class achievements (Nandika et al., 2017).

Indonesia has a badminton parent called the Indonesian Badminton Association (PBSI) and in every region and province in Indonesia has a badminton parent (Listina et al., 2021). In the process of achieving a badminton sport achievement, a prime and good physical condition is needed (Hermawan et al., 2020). From the above opinion, it is in line with the opinion of Toresdah & Asif that in an effort to improve an achievement, physical condition is a requirement to be prepared optimally in achieving achievement (Toresdahl & Asif, 2020).

Physical condition is a sports movement activity in which there are factors including endurance, strength, speed, flexibility, coordination when doing sports with a certain duration of activity (Yola & Rifki, 2020). Physical conditions are several factors or indicators that must be possessed by someone when carrying out sports activities by combining each element of strength, balance, endurance, agility, flexibility, and coordination in order to achieve the expected target (Ninzar, 2018). One element of physical condition that must be possessed by badminton athletes is balance. Balance is to improve athlete performance, prevent injury, and optimize the desired results (Muladi & Kushartanti, 2018). Good balance is very important in badminton because it helps players to produce effective movements, increase endurance, and reduce the risk of injury (Ferriyani et al., 2021). Balance involves a variety of movements in each body segment supported by the musculoskeletal system and the fulcrum (Marpaung & Manihuruk, 2022). Balance is needed when moving or performing movements such as running, jumping, or swinging a racket by badminton athletes (Ahmed et al., 2022). One of the exercises in badminton that is usually done is drilling exercises in an effort to train physical conditions. Optimal training affects the physical condition that is unconsciously formed by itself (Sin, 2017).

Drilling training are training that are carried out repeatedly or continuously to gain skills and automate a movement that is carried out (Fitriadi & Barlian, 2019). Drilling training are carried out by a coach who hits shuttlecocks throughout the field to be reached by athletes (Hasibuan et al., 2020). Drilling practice is a series of exercises that focus on repetition of footsteps to reach

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the shuttlecock and tactical movements in badminton games (Primayanti & Isyani, 2021). Drilling training are usually carried out using tools such as a shuttlecock throwing machine or a coach throwing a shuttlecock (Anggriawan et al., 2018).

An training method done repeatedly can improve physical conditions such as balance (Manurizal et al., 2020). Badminton athletes when they do not do routine training, the footwork ability is not good, so routine training is needed with effective training methods to get good balance in order to master the field by returning the shuttlecock even though it is in a difficult position (Wijayanto & Williyanto, 2022). From the above opinion in line with Nugroho et al who said that when training to improve balance, it is necessary to practice based on training periodization for easy training and matches in reaching or returning the shuttlecock to the opponent (Nugroho et al., 2018).

Based on the results of field observations, it is found that badminton athletes still do not have good balance as seen from when athletes chase shuttelcocks it is still difficult to balance the body when stepping and the results of interviews conducted with coaches that coaches rarely do training to improve balance. This study applies drilling exercises based on training periodization and is carried out in a structured manner to see the effect of drilling exercises on the balance of badminton athletes. From the above problems, it is in line with research conducted by Gantois et al, who said that routine training is continuously carried out in a structured manner and in accordance with the principles of training, the physical condition of an athlete can improve such as increased balance, agility, cardiovascular and muscle strength (Gantois et al., 2023).

The purpose of this study was to determine the effect of drilling training on improving the balance of badminton athletes. The benefits of this research, 1) theoretically this research opens a paradigm in the field of coaching in general and specifically in badminton sports to use a variety of forms of exercise, 2) this research is expected to add knowledge to the coaches so that they choose a form of exercise that is simple but can improve various physical conditions, 3) as a reference value for the quality of further research.

## II. METHOD

This type of research is experimental research, so it can be interpreted that experimental research has treatment or treatment given to samples in research (Li et al., 2022). The experimental method is used to be able to see the absence of the effect of treatment given to badminton athletes through drilling training to improve balance (Marouvo et al., 2023). The design in this study used a one-group pretest-posttest design. This research was held at the badminton court PB.PT One Asahan Road Marah Rusli. This research was conducted for 4 weeks or 1 month. The research began on January 10 2023 to February 09 2023. The frequency of training is 3 times a week. The number of training sessions was 12 times. Training schedule on Monday, Wednesday and Friday. Training starts at 15:00 WIB - 18:00 WIB.

Population is a subject that exists in a study (Etuk et al., 2022). The population in this study were 10 badminton athletes PB. PT. One Asahan. The sample is part of the population to be studied in a study which will later be given treatment and measured with a measuring instrument (Royon et al., 2023). The sample in this study were 10 badminton athletes PB. PT. One Asahan. The sampling technique is total sampling, total sampling is that all populations in the population are sampled to obtain research data (Miller et al., 2020). The instrument used in measuring balance is strok stand. The data analysis technique uses the help of SPSS 23 software to test normality, homogeneity and t test (effect).



Picture 1. Test and Measurement of Balance (Strok Stand)

## III. RESULT AND DISCUSSION

From the results of research obtained in the field and analyzed using the SPSS 23 application, it shows that the data is normally distributed, homogeneous and there is a solid influence. The results of data analysis using SPSS 23 can be seen in the table below:

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**Table 1. Normality test**

Tests of Normality			
	Shapiro-Wilk		
	Statistic	df	Sig.
Pretest	.862	10	.080
Posttest	.880	10	.131

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the results of the normality analysis test, the pretest and posttest results  $> 0.05$  so that normality distributed data can be drawn.

**Table 2. Homogeneity test**

### Test of Homogeneity of Variances

Pretest posttest

Levene Statistic	df1	df2	Sig.
.368	1	18	.552

Based on the results of the homogeneity analysis test, pretest and posttest results  $> 0.05$  so that homogeneity distributed data can be drawn.

**Table 3. T-Test (Effect)**

### Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	1166.800	434.187	97.087	963.594	1370.006	12.018	19	.000

From the results of the data analysis test using the T Test (Effect) Paired Samples, the results of the sig (2-tailed) were smaller  $< 0.05$  so that a conclusion was drawn that there was a significant effect of drilling training on improving the balance of badminton athletes.

The success of a badminton athlete in achieving his highest achievement cannot be separated from the factor of good physical condition (Gusrinaldi et al., 2020). Improving the physical condition of an athlete cannot improve with a short duration of training (Chan, 2012). Training carried out by an athlete with discipline, routine, and cannot be separated from the training periodization applied by a coach (Uddin et al., 2020). The above opinion is in line with the opinion of Rubiana et al, who said that trainers who are experts in training have concepts based on scientific knowledge of coaching and are outlined in a training program or training periodization to improve the physical condition of athletes (Rubiana et al., 2017).

From table 3, the research results show that there is an effect of drilling training on improving the balance of badminton athletes. According to Pambudi et al (2022) In badminton games, changes in the position of athletes are carried out according to the needs of the match, adjusting conditions during training and competition and mechanisms when attacking and defending from opponents, so training for balance plays an important role in the match of a badminton athlete.

In badminton games have a high level of physical condition, especially in singles, badminton sports demand excellent physical condition and require aerobic stamina, explosive strength, speed, accuracy and balance, and a physical condition is needed by an athlete in carrying out various forms of exercise or physical movement systematically and can make or grow an athlete's achievements (Aisyah, 2021). The opinion of Phomsoupha et al states that badminton is characterized by short lathan periods and repetitive exercises (1-9 seconds) and recovery (low intensity activities such as standing and walking for 6-15 seconds) interspersed with longer breaks in the game (time out 120 seconds between games) (Phomsoupha et al., 2018). Research conducted by Fernandez et al stated that badminton athletes have good balance to be able to quickly change direction according to the direction of the shuttlecock from the opponent (Fernandez et al., 2022).

## The Effect of Drilling Training on Improving the Balance of Badminton Athletes

Drilling training that involve foot movements, position shifts, and body movements in various directions help athletes improve balance. Balance allows athletes to move smoothly and responsively on the field, thus improving the athlete's ability to deal with changing game situations (Malwanage et al., 2022). By doing regular training, athletes can develop sensitivity and stability in maintaining body balance when performing movements and strokes, thus assisting athletes in maintaining a stable position on the field and increasing control over the body (Manihuruk et al., 2023).

The balance of badminton athletes focuses on the core muscles, which consist of the muscles around the abdomen, pelvis, and lower back, have an important role in maintaining body balance, and strong core muscles can support the spine and maintain body stability when badminton athletes chase the shuttlecock (Batalha et al., 2018). Adequate balance in muscles and joints helps in maintaining optimal movement and allows for quick adjustments while moving and good balance can improve the ability to maintain the physical balance of badminton athletes (Yüksel & Akın, 2017). A badminton athlete can improve physical condition balance which can support better physical performance, prevent injuries, and improve overall quality of life (Wong et al., 2019)

### IV. CONCLUSIONS

Drilling training is an alternative in a varied badminton training program, so that it can be applied by badminton coaches in improving the balance of badminton athletes. Based on the results of the study, it was found that drilling training has an effect on increasing badminton athletes PB.PT. One Asahan.

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## The Anti-Colonial Resistance Female Battler Amidst the Guerrilla War Environment in Ernest Hemingway's *For Whom The Bell Tolls*



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**ABSTRACT:** This research paper discusses the central figure of the anti-colonial resistance female battler around male-dominated strugglers and soldiers for the country freedom movement in Ernest Hemingway's literary work entitled *For Whom the Bell Tolls*. The writer uses post-colonial feminism approach by analyzing the binary opposition to reveal the role difference between the superior men and the inferior woman amidst the guerrilla war environment. The result of this research shows that the anti-colonial resistance female battler, Pilar, has a major role and position to get involved in the battlefield against Fascist colonizers. Amidst the guerilla war environment, Pilar struggles hard to existentially show her position as a real female battler against men domination either her husband, American man, or Fascist soldiers in Spain. Pilar is able to live in mountains, caves, and other rocky places in facing fascist soldiers. Pilar is also able to play a significant role to take over the leadership of the anti-colonial band in blowing the bridge in the war. Pilar shows her cleverness in conceptualizing a war strategic planning in front of the male strugglers. Pilar is stereotyped as a courageous, rational, consistent, sensitive female battler with daily house work as a house wife amidst the guerilla war environment.

**KEY WORDS:** female battler, post-colonial feminism, guerrilla war environment, binary opposition, Pilar's stereotype

### I. INTRODUCTION

Literary work discussion this present time tends to turn from structural into post-structural study. One of the popular approaches to analyse literary works based on post-structural study is feminism, a hot topic which is much talked about by contemporary people today. Feminism can be said as gender ideology vocalized by women all over the world or women movement to equalize their right and position to men in some ways. This movement emerges due to men's dominance over women in all aspects of life conducted by feminists. The term "feminist" refers to a political position construction, while the word "woman" refers to a biological condition distinction. Feminism is politics, meaning that political power alters the relationship of life power between men and women covering all structures of life such as family, education, economy, law, and culture in a society (Weedon, 1987:6).

The booming of feminism approach in literature is inseparable from the flourishing women movement in America and England. Women movement in both countries gives a lot of inspiration for literary writers to write many feminism ideas and gender roles in their literary works; one of them is Earnest Hemingway. He writes many literary works in the form of novel, short story, and essay. His novel entitled *For Whom the Bell Tolls* pervades gender ideology or feminism which is reflected in the main character to struggle against Fascist colonizers during civil war in Spain. The main female character, Pilar, in the novel is described as a brave, tough, strong woman, living in a cave during the war along with the loyalists for the Republic, and being the anti-colonial band leader amidst the guerrilla war environment in blowing out the bridge.

The phenomena of the anti-colonial female battler, Pilar, amidst the male-dominated war environment in the novel, interests the writer to discuss further regarding her movement, role, and position as the effects of colonialism in Spain. This research paper is different from other former papers for it is revealing the Fascist colonization towards common society in Spain generally, as well as the radical reaction of a woman specifically who is subordinated by her husband and colonized by Fascist colonizer amidst the guerrilla war environment, the role and the position of a woman in a war, and the woman stereotype as the anti-colonial female battler.

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## II. RESEARCH METHOD

### 2.1. Research Approach

Based on the background of the research paper which is related to the major phenomena of the woman movement amidst the guerrilla war environment in a colonized country as described in Ernest Hemingway's For Whom The Bell Tolls, the writer analyzes the phenomena in that literary work by using post-colonial feminism approach. Post-colonial feminism research approach is some kind of a literary approach that studies the understanding of woman movement, role, and position as the effects of colonialism politically, economically, socially, and culturally as a central discussion in literary research (Endraswara, 2003:146).

### 2.2. Method of Data Collection

In writing this paper, the writer uses library research to get accurate supporting data and information in connection with the subject matter of this paper. In addition to the primary written source of Ernest Hemingway's For Whom The Bell Tolls, a number of related books that are considered well-suited and necessary for this paper are studied thoroughly. According to Semi (2012:10), library research is implemented by the researchers in the working room or in a library where they can gain data and information about the object of research through reference books and other sources.

## III. DISCUSSIONS

### 3.1. Pilar as the Anti-Colonial Resistance Female Battler In For Whom the Bell Tolls

#### 3.1.1 Binary Opposition Related to Pilar Position in For Whom the Bell Tolls

In relation to post-colonial feminism approach which analyzes the grand narrative of two striking different points in Ernest Hemingway's For Whom the Bell Tolls in this research paper, binary opposition in this literary work is firstly analyzed. The binary opposition brings up the powerful distinction between man and woman in the guerilla war environment of the story, that is, man position is obviously regarded more superior than woman as described below:

1. The Colonizer Troop (Fascist Soldiers)	The Colonized Woman (Pilar)
2. The Ordinate Man - Husband (Pablo)	The Subordinate Woman - Wife (Pilar)
3. The Realistic, Well-Educated Man (Robert Jordan)	The Mystical, Uneducated Woman (Pilar)

Firstly, based on the binary opposition, the main female character, Pilar, is characterized as the colonized woman, whereas Fascist troops are as the colonizer party. In terms of postcolonial feminism, Pilar is the description of a native woman of Spain citizen whose country is colonized by the Fascist colonizers. As a result of colonization, although Pilar is a woman, she decides to be a guerilla war battler, a war martyr by living in remote mountains, moving from one place to another, running and hiding in a cave located in the rim-rock formation to fight against Fascist troops along with her band amidst the guerilla war environment. The Fascist colonizers have the great power relation to occupy, oppress, as well as kill the native people who are technologically weaker with simple weapons, because the colonizers are completely armed with a very modern military technology.

Secondly, the main female character of the novel, Pilar, is positioned as Pablo's wife and Pablo is the former guerilla band leader. Pilar is said to be the mujer of Pablo. She is Pablo's woman so far with whom he leads the band in runaway site. As his woman, Pilar is subordinated to be a number-two person in any strategic decision making for war and the bridge mission led by the ordinate Pablo. However, when Pablo rejects the blowing-out bridge mission--since he considers that the primary mission of the guerilla band is to hide and save them from Fascist colonizer enemy, Pilar takes over the guerilla band leadership and becomes the leader of the anti-colonial resistance battler in the band. She keeps persistent with the previous plan to go for war and shows a great power relation to command the member of the band to blow out the bridge who are mostly dominated by male strugglers amidst the guerilla war environment.

Thirdly, the binary opposition indicates Pilar as Loyalist battler and Robert Jordan as a demolition man for the bridge mission. Even though Pilar is merely a relatively old woman with a relatively low education, she is able to show her cleverness in managing the band in front of Robert Jordan, a very well-educated man from America. She is poor in formal education and scientific knowledge, but she is not left so far behind in her way of thinking especially in war strategic planning. She can prove her self-identity as a brave, idealistic, loyal martyr woman to other members of the male struggler band amidst the guerilla war environment. Pilar has a great power relation in the band which is dramatically influential to her friends to join the bridge mission. Robert Jordan with his higher education has realism way of thinking, while Pilar with lower education trusts more in

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mysticism way of thinking. Jordan can not believe in such a mystical mindset to predict future, doom, or happiness. Pilar believes in the gypsy's folktales truth about somebody's fate future by means of predicting one's physical condition such as through one's palm and habits. In terms of mysticism, she has ever talked to Jordan that a man can have an empty feeling when he is awoken too early in the morning; it is almost like the feeling of disaster he has in life for multiplied thousands of times.

### **3.1.2. Pilar's Stereotype as The Anti-Colonial Resistance Female Battler**

Gender ideology is outstandingly pervading from the beginning to the end of Hemingway's For Whom the Bell Tolls which can be viewed through the main character, Pilar, as the anti-colonial resistance female battler amidst the guerrilla war environment mostly dominated by men. Gender is defined as social-cultural distinction based on the construction of biological difference between man and woman, whereas, sex refers to the natural, biological difference traits between them (Budianta, 1998:4). Hemingway, at this point, wants to show the ideas and thought about equality in gender roles between man and woman in war condition. Not merely a man has a significant role to go for war, but also a woman has a right and role to be a guerilla soldier in the battlefield. There is no difference between man and woman as a citizen in implementing their obligation as well as right for country defense, responsibility as well as sense of belonging for country peacefulness.

A woman citizen, Pilar, is described as a woman with a great sense of belonging and loyalty for Spain Republic, and is willing to sacrifice her life to save the country from Fascist colonizer troops. Pilar shows her role and position very differently compared to common other women as a female citizen who struggles hard for the country freedom movement. Woman stereotype or the oversimplified standardized woman image, as part of fundamental concept for post-colonial feminism approach in literature that emerges in the main character, Pilar, is described below:

#### **1. Pilar as a Brave and Barbarous Battler in Facing the Colonizers**

Not many women have bravery and over self-confidence to go for war by risking their life such as Pilar. The majority of women are afraid to die as a martyr or suffer from bloodshed in the battlefield, even they are crying hysterically and are traumatic just hearing the war. Different from any common women, Pilar is not an ordinary woman. She is a very brave, barbarous woman. She is very courageous to show her principle as a strong woman by deciding to join the bridge mission. She is also resisting Pablo, the former leader in the band as well as her husband, who does not want to support the bridge mission and rejects the big plan.

Pilar appears with her power before all of the men to convince that the bridge mission must be put as the main priority amidst the guerilla war environment. Pilar, as the mujer of Pablo, is so daring to disobey him as her leader; she takes over the band leadership and leads them to blow out the bridge. Her presence affects others mentally to do the same thing as she does. Pilar is characterized to be braver than Pablo to face life and death for the sake of the Republic she loves, a cold-blooded woman who likes seeing her enemy's bloodshed in her hands. Due to her mentality, the gypsy labels Pilar as a barbarous woman. This indicates that Pilar is more than a man in guerilla strugglers' eyes as viewed in the following quotation.

"And how is she, the mujer of Pablo?"

"Something barbarous," the gypsy grinned. "Something very barbarous.

If you think Pablo is ugly you should see his woman. But brave.

A hundred times braver than Pablo. But something barbarous."

(Hemingway, 2003:27)

#### **2. Pilar as a Rational and Objective Battler in Doing Something**

In general, women rely primarily on their feeling rather than thinking, heart rather than mind, emotion rather than reason, but Pilar is totally different from them all. She is very rational, so logical to do something in her life especially in facing Spanish war. For instance; she chooses to blow out the bridge rather than the next train or other projects as Pablo wishes. This is because she thinks that by blowing out the bridge into ruins, there will be no more access for the Fascist soldiers to cross the deep ravine and river and arrive in saw mill area. If it happens, the cave where they hide will sooner or later be known and they will be shot dead one by one by the enemy troops. The Republic wants the bridge to be blown out because the bridge existence is very significant rather than the other as quoted below.

"I'm for the Republic," the woman of Pablo said happily.

"And the Republic is the bridge. Afterwards we will have time for other projects."

(Hemingway, 2003:56)

Another example of Pilar's rationality is that she urges Robert Jordan to make love with Maria soon because there is so much time any longer. Pilar reminds them not to waste the time, for the unknown danger that threatens to end up their happiness is close to them. If they can not make good use of the very short time for love-making, they will lose times of happiness in their

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life. This is due to two-day left approaching the mission for blowing out the bridge. This indicates that Pilar is very logical, rational, and critical in doing something amidst the guerilla war environment viewed as follows.

"Did you make love?" the woman said.

"What did she say?"

"She would not tell me."

"I neither."

"Then you made love," the woman said. "Be careful with her as you can."

(Hemingway, 2003:94-95)

Pilar is also an objective woman in judging something or someone, such as respecting Robert Jordan more in his ideas, bravery, and spirit to blow out the bridge rather than Pablo. Although Pablo is her husband, her country partner, her leader in the band before, Pilar can not agree with his rejection and objection for the bridge mission. Considering the fact that the existence of the bridge is really pivotal, the bridge mission is the main project the Loyalists for Republic have to execute immediately. Other demolition projects will be done after the bridge mission. Pilar's objective attitude is also seen when she feels guilty for oftentimes being so rude and getting mad at Maria, she deeply apologizes to her by speaking very frankly and conceding her feeling of jealousy with her. She elaborates that there is something missing in her life because Maria, who is regarded as her daughter, is no longer hers but Jordan's wife to-be as quoted below.

"I'm sorry I was rude to thee, guapa".

"I don't know what has held me today. I have an evil temper."

"Nay, it is worse than anger," Pilar said, looking across at the peaks.

"Yes, he can have thee," Pilar said and looked at neither of them.

"I have never wanted thee. But I am jealous."

"He can have thee," Pilar said and ran her finger around the lobe of the girl's ear.

"But I am very jealous."

(Hemingway, 2003:166)

### **3. Pilar as a Consistent, Firm, and Authoritarian Battler in Speech**

The difference between women in common and Pilar is that Pilar is more consistent in principle, more firm in decision-making, and more authoritarian in speech to anyone, including to her man, Pablo. Not all people can be consistent in their principle on and on, yet Pilar can always be. Once she makes up her mind to do something, she remains going on with it. When she has already decided to join the bridge mission plan, she does not change her mind until the execution day. While having decided to make Jordan and Maria get closer and set Maria free from her, she keeps consistent with it, although she feels jealous for losing Maria.

Pilar is also so firm and authoritarian in speech in making a decision, nobody can hinder her willingness and principle choice to be the leader of the band including Pablo amidst the guerilla war environment. No one in the group of male strugglers is able to reject her question, offer or request to join the bridge mission. In her friends' point of view, Pilar has such a great dignity that they abide psychologically to what she commands. All of the members of the guerilla band, whose all of whom are men, cohesively seem obedient and follow her decision as a leader for the bridge mission. Such a manner is very rarely found in any ordinary women as revealed in following quotation.

"I am for the bridge."

"I am for the bridge and against thee," the wife of Pablo said. "Nothing more."

"I am also for the bridge," the man with the flat face and the broken nose said, crushing the end of the cigarette on the table.

"To me the bridge means nothing," one of the brothers said.

"I am for the mujer of Pablo."

"Equally," said the other brother.

"Equally," the gypsy said.

(Hemingway, 2003:55)

Many times, she states assertively before Pablo that she now commands the guerilla band in the cave, nobody but her as a new leader amidst the guerilla war environment. Pablo can do nothing to hamper Pilar's new leadership, he is just grumbling and muttering words with restrained frown. Pilar considers Pablo as coward, for he fears of death in blowing the bridge. With her rage, she talks to Pablo that he can stay there if he wishes with food and drink provided as quoted below.

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"Nothing," the woman of Pablo said. "And do not try to frighten me, coward."

"Coward," Pablo said bitterly.

"Not in joke," the woman said. "Here I command! Haven't you heard la gente?

Here no one commands but me. You can stay if you wish and eat of the food and drink of wine, but too bloody much, and share in the work if thee wishes.

But here I command.

She went on, "Listen to me drunkard. You understand who commands here?"

(Hemingway, 2003:58-59)

### **4. Pilar as a Sensitive and Mystical Battler with Something or Someone**

In general things, Pilar can be categorized as a sensitive woman in dealing with something or someone. Anyway, Pilar is a woman, so her sensitiveness anytime can emerge, being expressed in her behavior as the reflection of her feeling. This kind of stereotype is commonly possessed by women from any race, ethnic, or nationality throughout the world. When the first time Pilar asks Robert Jordan's palm, she takes a look at it carefully and predicts Jordan destiny in the bridge mission with her mystical intuition power she has. Based on the text of the novel, Pilar does not tell Jordan about what she has already looked at his hands, regarding his fate future in the band in the next three days after the bridge mission. She is just silent and lets Jordan do the best thing for the demolition plan. Her feeling of reluctance to answer Jordan's question means that there will be something wrong with him someday. This is finally true because at the end of the story, Jordan fails to escape from multiple shooting of Fascist troops. Pilar's attitude to keep silent without smiling proves that she is sensitive with one's feeling, she does not want to break or hurt Jordan's heart after hearing Pilar's mystical explanation. Definitely, Jordan as an American martyr with higher education does not believe in such a mystical prediction, he trusts more with a good strategy in implementing a successful mission by planning it scientifically, professionally as this following quotation.

"Let me see thy hand," the woman said. Robert Jordan put his hand out and the woman opened it, held it in her own big hand, rubbed her thumb over it and looked at it, carefully, then dropped it. She stood up. He got up too and she looked at him without smiling.

"What did you see in it?" Robert Jordan asked her.

"I don't believe in it. You won't scare me."

"Nothing she told him. I saw nothing in it."

"Yes, you did. I am only curious. I do not believe in such things."

(Hemingway, 2003:35)

Pilar's sensitiveness emerges when she has to see Maria have a love relationship and make love with Jordan. Impulsively, she gets too emotional, gets too angry with Maria very often since she is so jealous with them that Maria is no longer with hers. She psychologically feels something valuable missing within her life. Her sensitivity is expressed from harsh remarks she utters to Maria each time Pilar sees her with Jordan. However, Maria is treated like a loving daughter by Pilar, although she is just taken and rescued from Fascist soldiers' captive train amidst the guerilla war environment. Therefore, Pilar feels empty and sensitive to let Maria go off from her lap as described below.

"I have never wanted thee. But I am jealous."

"He can have thee," Pilar said and ran her finger around the lobe of the girl's ear.

"But I am very jealous."

(Hemingway, 2003:166)

### **5. Pilar as a Battler with Woman's Daily House Work**

Commonly, like any other women in the world, Pilar is also willing doing daily house work as Pablo's wife. Doing house chores is part of Pilar's activity around other anti-colonial male battlers. Pilar does the work with her consciousness and integrity to help others in the cave where the guerilla band hides. Pilar's daily house work which is normally done is cooking and serving meal for all of the battler band members. Although Pilar is close to man's character traits, she remains willing to do house works that are usually done by women in the world. Such a thing proves that Pilar does not neglect her roles as a wife for a man besides having a role as a woman struggler, going for war against Fascist soldiers. Thus, she has double roles as a feminist as well as a common woman with cooking activity for men amidst the guerilla war environment as quoted below.

"I said she cooks well to please her. But mostly she helps the mujer of Pablo."

He could see the wife of Pablo had turned now from the cooking fire and was listening. When he said the word bridge everyone was quiet.

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(Hemingway, 2003:54)

Of all stereotypes mentioned above, it can be concluded that Pilar has more man's stereotype rather than woman. Therefore, even though Pilar is a woman amidst the guerilla war environment, she definitely deserves to be called a post-colonial feminist battler whose life struggle is primarily going for war against male Fascist colonization in Spain.

### IV. CONCLUSION

Ernest Hemingway's For Whom The Bell Tolls reveals the hard struggle of the anti-colonial female battler against Fascist colonization in Spain war. Pilar, the central character in the novel, is a woman positioned as the inferior. Nevertheless, in term of post-colonial feminism perspective, Pilar has the ability to show a great, complexed role more than men in general around the guerilla war environment. She is a colonized woman, a men's wife, a motherly woman, and a guerilla war leader. Pilar is not only a woman, but also a great battler in the battlefield. She is stereotyped as a courageous, rational, consistent, sensitive female battler with woman's daily house work as a house wife.

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## Towards the Special Region of Yogyakarta with Pancasila Character Trough the Implementation of Regional Regulation No. 1 Year 2022 of DIY Province



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**ABSTRACT:** The rise of violence and intolerance that occurred in Yogyakarta has been very disturbing and concerning to the community, especially the citizens of Yogyakarta. These acts of violence will certainly have a negative impact on the city of Yogyakarta as a student city, which is a destination for prospective students and students from various parts of Indonesia to pursue education in Yogyakarta. This research aims to complete models to translate the policies of the Yogyakarta Special Region Government, to counteract acts of violence and intolerance that occur in Yogyakarta. The results of the research are expected to be more effective in realizing Yogyakarta as an inclusive city and Pancasila character. This research uses a qualitative method, the approach that will be used is to combine library research with field research. The material object of the policy model that has been carried out by the Yogyakarta Regional Government, the formal object in terms of Pancasila ethics. Pancasila ethics is an effort to understand the concept of Pancasila values in a pluralistic society, so that tolerance and mutual respect between citizens can be carried out by the people of Yogyakarta.

**KEYWORDS:** Violence, Tolerance, Law Enforcement, Implementation of Pancasila

### I. INTRODUCTION

Yogyakarta is a city of culture. The people of Yogyakarta strongly emphasize tolerance, deliberation, and care for the surrounding environment and are open to anyone who comes to Yogyakarta. The city of Yogyakarta has many good and quality schools and campuses as a student city. Yogyakarta is a destination for prospective students from various regions throughout Indonesia. In addition to many quality schools and universities, the city of Yogyakarta also has beautiful tourism spots and relatively cheap living costs. Many experiences of alumni of students who have studied in Yogyakarta feel the comfort and beautiful atmosphere of the city of Yogyakarta, so they are very impressed and feel that Yogyakarta is a city with a comfortable heart. They always long to come to Yogyakarta to reminisce. Yogyakarta is also the first region to have a PERDA on Pancasila Education, therefore people should behave in accordance with the values of Pancasila.

The comfort of Yogyakarta in recent years has been tarnished by various acts of violence and intolerance that lead to criminal acts, so that it can injure human dignity, unity, and social justice. Violence that occurred in Yogyakarta in recent years is as follows: Acts of intolerance that occurred in various events in Yogyakarta, such as the case of attack on worship in Bedog church, the case of dissolution of worship in Mangir Bantul village, the case of local government that does not give permission for the establishment of houses of worship because of the insistence of intolerance groups that occurred in Gunungkidul, the case of rejection of the prayer park in Giriwening, the case of cutting the cross in the grave of Kotagede, and so forth. Other crimes besides intolerance are the inter-ethnic brawl in Babarsari, the stabbing of ISI students in Seturan, brawl between students, juvenile delinquency expressed in several acts of street violence, and so forth. These conditions can be said as Thomas Hobbes said "Homo Homini Lupus" which means humans become wolves for others, making Yogyakarta no longer comfortable, but stop being comfortable.

The various acts of violence mentioned above are certainly very disturbing to the comfort and privileges inherent in the city of Yogyakarta. The inconvenience of Yogyakarta will also affect the future of the city, both in the fields of economy, education, security, social society, and so on. The DPRD of Yogyakarta Special Region has passed the Regional Regulation on Pancasila

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Education, but there is no synergy between internal education, non- formal education and formal education. This research aims to look more deeply into the concept and implementation of policies carried out by the Yogyakarta Regional Government in dealing with acts of violence in Yogyakarta. This condition is very different from the view based on Drijarkara's thinking: humans are "Homo Homini Socius" which means that humans are friends or friends for other humans. The effect of friendship between one human being and another is to create a sense of mutual need between fellow humans. This symptom causes the creation of social space which is the basis of human existence in living in the midst of nature (Drijarkara, 2006).

According to Drijarkara's view, Pancasila is formulated .as a philosophical premise, namely that I as a human being was created not alone, but together with love. Therefore, I must practice love in my unity with my fellow human beings, the humanity that exists in me to create social justice. which originates from God Almighty. Love of God is the basis of my existence (Drijarkara, 2006). Humans are both personal and social beings, autonomous personal beings and social beings who are inseparable from others.

The Government of Yogyakarta Special Region is obliged to organize Pancasila Education and Nationalistic Insight in order to lead the city of Yogyakarta with Pancasila character. The implementation of Pancasila education and nationalistic insight is needed in Indonesia, especially in the Special Region of Yogyakarta. Pancasila and Nationalism Education is aimed at various elements of society such as students from elementary to higher education levels, political organizations, community organizations, civil servants, teachers, religious leaders, community leaders, traditional leaders and so on. The implementation of Pancasila Education and Nationalistic Insight is organized through formal education, non- formal education and informal education (DIY Regional Regulation on Pancasila Education and Nationalistic Insight No.1 Th 2022).

### **II. RESEARCH PROBLEM**

This research was conducted by means of qualitative methods ( Bong Hendri Susanto Et all, 2022) , namely combining library and field research, this is very necessary to produce effective social transformation policies, to prevent acts of violence and intolerance that occur in Indonesia, especially in Yogyakarta. Educational and cultural approaches become the foundation of law and local wisdom when building social relations to run well, mutual respect, tolerance and dialogue (Marietta, 2022: 160). Field research obtained primary data by conducting interviews with various parties including: DIY Kesbangpol Agency, DIY Education Council, DIY DPRD, DIY POLDA, Depok East Police, Depok Kapanewon, Catur Tunggal Village, Maguwoharjo Village, Eastern Indonesian student associations, Yogyakarta Students. From Library Research, researchers collect data from related books, journals, previous research results.

### **III. RESULT AND DISCUSSION**

#### **Sociocultural in the Province of D.I. Yogyakarta**

Geographically, Yogyakarta Special Region (hereafter referred to as DIY) is a small province located on the southern side of Java Island. It borders Central Java Province to the east and west, and Mount Merapi to the north. In the south, DIY is bordered by the Indian Ocean or often referred to as Segara Kidul (South Sea) by the local people. DIY is divided into 5 regencies and cities, namely Bantul, Sleman, Kulonprogo, Gunungkidul, and Yogyakarta City as the provincial capital.

DIY has traveled a long historical journey, rooted from the Old Mataram Kingdom to the New Mataram. The Giyanti Agreement on February 13, 1755 marked the division of the (New) Mataram Kingdom into two, namely Surakarta Sunanate led by Susuhunan Pakubuwono III and Ngayogyakarta Sultanate led by Pangeran Mangkubumi who later took the title of Sri Sultan Hamengkubuwono I. A month after the Giyanti Agreement, on March 13, 1755, the Ngayogyakarta Sultanate was officially proclaimed. After the Proclamation of Independence of the Republic of Indonesia was announced on August 17, 1945, the next day, the Ngayogyakarta Sultanate immediately declared to join the newly established republic.

DIY had a significant role in the survival of the then young republic. In 1946, the capital (Jakarta) was unsafe due to military aggression from the Netherlands, so at the offer of Sri Sultan Hamengkubuwono IX (Governor of DIY at that time), Soekarno moved the Indonesian capital from Jakarta to Yogyakarta until 1948. In 1949, the capital returned to Yogyakarta because Jakarta was again unsafe until it was returned in 1950. At the same time, Sultan Hamengkubuwono IX gave a check worth 6 million Gulden for capital to build the country. Because of its great services and loyalty to the Republic of Indonesia, DIY was rewarded, namely confirmed as a special region.

There are five pillars of Yogyakarta's privileges, namely in terms of procedures for filling positions, positions, duties and authorities of the governor and deputy governor, local government institutions, culture, land, and spatial planning. The position of governor in Yogyakarta is hereditary, unlike other provinces in Indonesia. This leadership is important to the people of Yogyakarta. The governor is not only seen as a political, but also a cultural and spiritual leader. This position is important



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considering that DIY inherited a strong Mataraman Javanese culture and still holds firm to the Javanese tradition. As the center of Mataram Javanese Culture, cultural preservation is one of the focuses in building the vision of Jogja Smart Province. Cultural preservation is not only done physically, but also conceptually. This is realized in the Philosophical Axis of Ngayogyakarta Hadiningrat Palace. This axis is an imaginary perpendicular line that stretches from the south to the north. This philosophical axis consists of:

1. South Sea (Parangkusumo and Parangtritis Beach)
2. Krapyak Stage
3. South Square
4. Yogyakarta Palace (as the seat of Sri Sultan which is also a spiritual center)
5. North Square
6. Tugu Golong Gilig (symbol of the unity of the people of Yogyakarta, as well as the unity between macrocosm and microcosm)
7. Mount Merapi

The philosophical axis is a pilgrimage of Javanese human life from beginning to end. This pilgrimage is lived in the expression "Sangkan Paraning Dumadi" which means that humans come from the Creator and will return to the Creator. In the pilgrimage, it is not only the beginning and the end that are important, but also how in life, humans are expected to contribute to beautifying life by maintaining the balance of the universe which is realized in the expression "Memayu Hayuning Bawana". If all of this is truly realized, the purpose of human life will be achieved, namely reuniting with the Creator (Manunggaling Kawula Gusti).

In terms of religion, the majority of Yogyakarta's population embraces Islam, followed by Catholicism, Christianity, Hinduism, Buddhism, Confucianism, and Kejawen beliefs. The following is data from the Yogyakarta Regional Office of the Ministry of Religious Affairs:

No.	District/City	Religious Believers						Total
		Islam	Kristen	Catholic	Hindu	Buddha	Confucian	
1	Yogyakarta	344.595	25.809	40.517	478	1.145	26	412.570
2	Bantul	919.107	12.549	24.687	783	194	2	957.322
3	Kulonprogo	420.006	5.663	17.063	35	590	0	443.357
4	Gunungkidul	747.727	12.757	12.769	981	375	2	774.611
5	Sleman	985.739	32.311	69.379	1.144	718	38	1.089.329
Total		<b>3.417.174</b>	<b>89.089</b>	<b>164.415</b>	<b>3.421</b>	<b>3.022</b>	<b>68</b>	3.677.189

Source: Office of the Ministry of Religious Affairs Kab./Kota se-DIY Pembimas KanwilDIY Ministry of Religious Affairs

Religious traditions in DIY are inculturative, combining religious spirituality with local wisdom. For example, there is still a belief in mythical things outside the religion and also respect for ancestors. This belief is manifested through the activities of larung sesaji, slametan, and the use of Javanese elements, such as language, in prayers. However, despite the strong preservation of local culture and religious diversity, it cannot be denied that Yogyakarta has become a destination area for migrants. Many migrants choose Yogyakarta as a place to work or study. Data from dataindonesia.id states that population growth through migration in Yogyakarta until 2020 reached 4.1% and is the province with the highest number of migrations. These migrants come from various regions in Indonesia with different religious and cultural backgrounds. There are several reasons that make Yogyakarta a favorite destination, including (Data from interview questionnaire results):

1. Many quality educational institutions

Yogyakarta is known as the city of students. There are many universities and schools that attract prospective students to study, such as UGM, UPN Veteran, UAJY, UNY, Sanata Dharma University, etc).

2. Affordable cost of living

Although Yogyakarta is known for having one of the lowest minimum wages in Indonesia, this is offset by the low cost of living. This includes food, housing, and other daily necessities.

3. Safety and comfort

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Yogyakarta is known to have a high level of tolerance. This can be seen from the local community's acceptance of other cultural values, as long as they do not disturb others. The crime rate is also quite low (when compared to other regions in Indonesia). In addition, the city atmosphere tends to be less polluted because it is not an industrial city and the city's layout and ease of access make Yogyakarta a city that is considered comfortable for studying or working.

### **4. Recommendation**

Some people also choose Yogyakarta on the recommendation of relatives or seniors who have previously studied or worked in Yogyakarta. Thus, there is a hereditary pattern in the migration process. In addition, it also shows that Yogyakarta is a place that should be recommended as a comfortable place to live.

Not only that, Yogyakarta is also striving to become a tourism area. There are many natural and cultural attractions that attract tourists to visit, ranging from beaches in the south, mountains in the north, to cultural tourism such as the Yogyakarta Palace, Malioboro, Tugu Jogja, Krapyak Stage, etc. This condition requires DIY to prepare itself to be a good host to accommodate all cultures and religions without losing its identity.

### **Clash of Civilizations**

All the sociocultural differences in Yogyakarta pose several challenges in social life. The first is the potential for the formation of exclusive groups in society with their own values. It is not uncommon for the different values lived in each group to conflict with each other, causing a second problem, namely the vulnerability of misunderstandings due to differences in perspective, leading to horizontal conflicts between community groups. Conflicts that occur can be physical, such as acts of violence and riots or brawls, or non-physical, in the form of bullying and repression of certain groups in various ways. In general, differences between groups include cultural and religious values.

Another problem that arises not only involves inter-migrant groups, but also relates to the clash between local wisdom values and the values lived by migrant groups. The culture of Yogyakarta is often poorly understood by migrants due to many factors such as language and social environment. One value that is important to the people of Yogyakarta is unggah-ungguh or norms of behavior in society that are usually unwritten. For example, Javanese people tend to behave and speak softly, so speaking loudly is seen as unkind and impolite. In addition, the Javanese language has a level of politeness that is often difficult to understand, especially by non-Javanese migrants.

Based on a report from the Setara Institute based on research in 2020, it was found that in Yogyakarta there were 7 cases of intolerance during the Pandemic (Setara Institute, 2021). Intolerance committed by several parties is not only religiously motivated, but also tribal, economic and political. Haili Hasan as the Research Director of Setara Institute also explained that during the span of five years (2015-2020), if the total number of intolerance cases that occurred in DIY was 37 cases. This is a concern because 12 years earlier, DIY was once recognized as the most tolerant region in Indonesia (Kalurahan Kulur, 2021). In 2022, cases of intolerance in DIY surfaced again after news emerged about the imposition of religious attributes on female students of SMA Negeri 1 Banguntapan, Bantul by the school teacher. In this case, according to an examination conducted by the Ombudsman RI Representative of Yogyakarta, it was found that in the incident there was no element of coercion from the school but it caused pressure on the student concerned.

In addition to religious intolerance, tribal intolerance also often occurs in Yogyakarta, for example what happened on Jalan Babarsari, Caturtunggal, Depok, Sleman in July 2022. The conflict case, if explored deeper, was actually caused by economic motives, where the perpetrator with the initials L who was a customer of one of the karaoke places refused to pay. The karaoke management then called a security guard with the initials K who immediately approached the perpetrator. The perpetrator did not accept this and then made the atmosphere hot and eventually led to a fight between the two parties. In this case, L, who is from East Nusa Tenggara, and K, who is from Maluku, have created a public perception that what happened was a conflict between tribes.

In addition to intolerance cases, Yogyakarta is also haunted by the rise of street crime cases known by the surrounding community as klitih. Based on data obtained from interviews with the Yogyakarta Special Police, in this case represented by Police Commissioner Djoko Hamitoyo, S.H., M.H., as Head of Criminal Investigation of the Yogyakarta Police, it was explained that in the span of 2017-2022 there were 72 cases of street crime in DIY. 63 cases occurred at night and 8 cases occurred during the day. The cases even involved 28 minors and 32 students.

These riots and acts of intolerance have not only resulted in criminal sanctions for the perpetrators, but also a disturbed sense of security for anyone living in Yogyakarta. Some respondents stated that security and comfort in Yogyakarta has decreased and caused concern. For example, since klitih became widespread in Yogyakarta, people do not dare to go out at night if it is not very important, especially alone. In addition, insecurity is also expressed through self-protection in various ways.

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Often, shortcuts are taken, namely through the rejection of identities that are different from the group and uniformity. The forced use of certain religious attributes in public areas such as schools and tourist areas is an example of religion-based uniformity. In addition to religion-based uniformity, racial discrimination also occurs, especially among migrants from eastern Indonesia (NTT, Maluku, Papua). This discrimination is based on observations of several riots involving these tribal groups. The negative stigma towards certain ethnic groups can be seen in the refusal to accept them in the community by refusing to rent a place to live (for boarding house owners). Passive and aggressive attitudes are also experienced by migrants from these eastern regions because they are considered not Jawani (civilized according to Javanese cultural values or understand Javanese culture).

Religious background is also a contributing factor to discrimination. The majority of migrants from Maluku, Papua and NTT are usually non-Muslims, leading to identity labelling of double minority. In general, the people of Yogyakarta have high tolerance. However, the existence of the double minority stigma makes people make the wrong conclusion that tribes from the east are the same as Christians, tribes from the east often make trouble, so Christians often make trouble.

Intercultural and religious clashes, sociologically speaking, can be said to be an unfinished assimilation process. Intercultural encounters require adaptation, both for migrants and recipients. Assimilation can be done through cultural development, whether formal, informal or non-formal. So far, cultural coaching has only touched some migrants. Meanwhile, the surrounding environment does not always support the assimilation process. Not infrequently, migrants also prefer to associate with their own group. From this point of view, there is a two-way difficulty that becomes a vicious circle. On the one hand, migrants do not socialize intensely with the local community because they are shunned, on the other hand, migrants are given a negative stigma for not mixing with the local community. In this case, mediation between the two parties is necessary.

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Seeing the diversity of society and the various conflicts that occur, stakeholders see the need for ideological political instruments for the integration process in society. Religious and cultural identities are difficult to use as unifying factors. Therefore, the local government is re- exploring Pancasila, which has become the unifier of the Indonesian Nation. The reinforcement of Pancasila values is also related to the history of Yogyakarta in the process of integration into the Republic of Indonesia and once became the capital of the country so that basically Yogyakarta is a mini Indonesia. The re-excavation of Pancasila was standardized in the ratification of Regional Regulation (Perda) No. 1 Year 2022 on Pancasila Education and Nationalistic Insight on February 22, 2022, at the proposal of Commission A of the DIY Provincial DPRD. This regulation aims to integrate Pancasila values based on Yogyakarta's local wisdom.

This regulation is a form of concern from the Yogyakarta provincial government regarding the importance of instilling the value of Pancasila as the ideology and philosophy of life of the nation. The Special Region of Yogyakarta, as part of the Unitary State of the Republic of Indonesia (NKRI), feels an interest in maintaining diversity through education, both formal, non-formal and informal education. Formal education is a form of education implemented by school institutions under the coordination of the Education, Youth and Sports Agency. The implementation of formal education is supported by non-formal education in the form of structured activities in the community. Meanwhile, informal education is education carried out in the family, such as inculturation and internalization of Pancasila values through daily life.

Formally, Pancasila education in Yogyakarta follows the vision of "Merdeka Belajar" launched by the Indonesian Ministry of Education and Culture. There are four things that become the background, namely:

1. Indonesia's changing economy
2. Indonesia's sociocultural and demographic changes
3. Indonesia's labor market overview
4. Indonesia Vision 2045 From the "Merdeka Belajar" program, it is hoped that the character will be formed:
5. Believing, fearing God, and having noble character
6. Independent
7. Critical Reasoning
8. Global Diversity
9. Working together
10. Creative

The five characters can be summarized into one character, namely "Pancasila Students". The real implementation of these programs is manifested in intracurricular and curricular activities. To support these activities, the education office, in collaboration with various parties, has developed a curriculum that is differentiated, simple in its learning outcomes,

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integral, independent and interdisciplinary. Article 17 mandates mandatory materials in the curriculum based on Pancasila and local culture, namely:

### 1. Pancasila

(History of the birth of Pancasila, history of Indonesia, Pancasila the basis of the State, Pancasila the unifier of the nation, actualization of Pancasila)

### 2. Nationality Insight

(Constitution of the Republic of Indonesia, Nationalistic Insight 1945, Bhinneka Tunggal Ika, NKRI, actualization of national insight)

### 3. Local Content

(Specialty of DIY, national and regional songs)

Meanwhile, in non-formal education, planned activities include education, training, and seminars on Pancasila and national insight, cultural activities, and commemoration of Pancasila Birth Day. One manifestation of non-formal education is the Sinau Pancasila Program implemented by the Yogyakarta Special Region's National and Political Unity Agency (Bakesbangpol DIY) in 78 kapanewon/kemantren (sub-district-level administrative areas) throughout Yogyakarta. This program is a form of implementation of Yogyakarta Special Region Regulation No. 1 Year 2022 on Pancasila Education and Nationalistic Insight. In this program, a socialization on Pancasila values is held by speakers from the government, academics, practitioners and politicians. This program targets several groups such as students, community organizations, political party members, village governments, religious organizations, and ultimately the entire community.

Based on interviews conducted with Bakesbangpol DIY, in this case represented by Embay Baitiyah from the Division of Ideology Development and National Vigilance, the Sinau Pancasila Program also encountered several obstacles. One of the obstacles to the implementation of this program is that it has not been able to penetrate the groups that should be the main target of this program, one of which is the motorcycle gang group. In this case, Embay also explained that his party had difficulties due to the lack of human resources who could help with this. Similarly, Panewu Anom (a position equivalent to the Secretary of the sub-district) of Kapanewon Depok, Djoko Muljanto, explained that in the implementation of SINAU Pancasila in Kapanewon Depok, the participants mostly came from people who were considered "fine" and not groups that were members of the wrong solidarity such as motorcycle gangs.

In addition to Sinau Pancasila, the local government is also promoting the Pancasila Character Village Program. This program uses an exemplary approach and real action. The values of Pancasila should be practiced first by structural officials and community leaders to serve as examples for the wider community. However, the role model is not just an image, the government expects an unadulterated appreciation. The main output of exemplary practice is the realization of Pancasila values in institutional and policy aspects. The community also supports this program by following the example of the leaders so that the exemplary practice aspect can be fulfilled. Informal Pancasila education through the practice of Pancasila in daily life also involves the participation of the family as the first and main educational environment. A harmonious family shows a maximum value cultivation process. Rooted in the family, everyone builds a Pancasila and nationalistic-minded society.

Formal, non-formal and informal education are inseparable. They do not operate in isolation, but synergize with each other. For example, the Education Office works with cultural actors to create a "Teaching Practitioner" program that allows students to gain real and direct cultural experience, not just theoretically. On the other hand, the school also cooperates with parents to be involved in instilling Pancasila values in the family.

Strengthening the value of Pancasila is also applied in the field of security. In this case, the government and education stakeholders work together with various parties coordinated by the Regional Police to carry out preventive and repressive actions, especially with regard to non-crimes. One of the causes of the rampant street crime that occurs in DIY is the lack of guarding by police officers at guard posts at night. Around Kapanewon Depok itself, there are at least two guard posts located on the North Ringroad, but both guard posts only operate during the day, while at night they do not operate. According to Panewu Anom Kapanewon Depok, Djoko Muljanto, this triggers street crimes because it opens up opportunities for perpetrators to carry out their modus operandi when they are not in areas monitored by police officers. In response to this, Kapanewon Depok had conducted a mobile raid to comb every area in Kapanewon Depok and socialize about children's study hours that children should not be outside the house above 22:00. This is actually a good effort to prevent children from negative associations, because considering the data from the DIY POLDA that street crime perpetrators from among children are also quite high. Unfortunately, this preventive measure is not accompanied by sufficient funding and resources, making it difficult to implement in the long term.

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## IV. CONCLUSION

The concept of preventing violence in the Special Region of Yogyakarta involves several stakeholders ranging from the Regional Government, the Police, the National Unity and Political Agency at the Provincial and Regency / City levels, the Regency and / or City Government, the Kapanewon Government, and up to the Government at the Kalurahan level in accordance with the provisions of the laws and regulations governing this matter. In its implementation, there are still gaps that cause social conflicts such as street violence and intolerance. The advantages of the Yogyakarta Special Region Government's policy through Yogyakarta Special Region Regulation No. 1 Year 2022 on Pancasila Education and Nationalistic Insight, namely that this policy is the first policy in Indonesia and is a form of breakthrough that seeks to synergize Pancasila Education and Nationalistic Insight both in the formal, non-formal and informal sectors and involves all existing stakeholders.

## ACKNOWLEDGMENTS

Thank you to Atma Jaya University Yogyakarta for funding this research and publication.

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## A Taxonomy for Generative Adversarial Networks in Dynamic Adaptive Streaming Over HTTP



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**ABSTRACT:** Generative Adversarial Networks (GANs) have emerged as a powerful tool in the field of Dynamic Adaptive Streaming over HTTP (DASH) to enhance various aspects of video streaming. This paper presents a taxonomy that categorizes the applications and techniques of GANs in the context of DASH. The taxonomy covers several key dimensions, including video generation, compression, quality enhancement, bandwidth adaptation, dynamic bitrate streaming, and cross-modal applications. Within each dimension, specific subcategories are identified to capture the diverse applications of GANs in DASH. Additionally, evaluation metrics for assessing the quality and effectiveness of GAN-based approaches are discussed. The taxonomy serves as a comprehensive framework to understand and organize the different ways in which GANs can be utilized to improve the streaming experience in DASH. By providing an organized structure, this taxonomy facilitates better understanding, comparison, and exploration of GAN-based approaches in DASH and enables researchers and practitioners to identify areas for further research and development.

**KEYWORDS:** Generative Adversarial Networks, streaming, DASH, video, quality, adaption, bandwidth

### I. INTRODUCTION

Dynamic Adaptive Streaming over HTTP (DASH) [9] has revolutionized the delivery of multimedia content over the internet by providing adaptive bitrate streaming to cater to varying network conditions and user preferences. To further enhance the streaming experience, Generative Adversarial Networks (GANs) [19] have emerged as a promising approach. GANs, with their ability to generate realistic content and optimize video quality, offer valuable solutions for various aspects of DASH. In this paper, we present a taxonomy that categorizes and organizes the applications and techniques of GANs in the context of DASH. The taxonomy aims to provide a systematic framework for understanding and exploring the different ways in which GANs can be utilized to improve the streaming process. By categorizing the applications and techniques, the taxonomy enables researchers and practitioners to navigate the field and identify specific areas of interest.

The taxonomy encompasses various dimensions of GAN utilization in DASH. It starts with video generation, where GANs are employed to generate synthetic content or interpolate frames to enhance the available video library. Additionally, GANs are explored for video compression, aiming to optimize the bitrate while preserving perceptual quality. Quality enhancement techniques, such as super-resolution, denoising, and deblurring, are also covered, highlighting how GANs can improve the visual quality of streamed videos.

Bandwidth adaptation [8] and control are crucial for adaptive streaming. GANs can assist in predicting available bandwidth and network conditions to optimize video streaming decisions. Moreover, GAN-based approaches for dynamic adaptation of video segments and chunk-based adaptation strategies are explored. The taxonomy also includes quality assessment and objective metrics, considering perceptual quality assessment and content-adaptive metrics to evaluate the effectiveness of GAN-based approaches. Furthermore, cross-modal applications of GANs in DASH, such as audio-visual synchronization and multimodal data generation, are discussed.

By providing a comprehensive taxonomy, this paper offers a structured framework to understand and classify the diverse applications and techniques of GANs in DASH. It enables researchers to identify gaps, explore specific subfields, and develop novel solutions. Additionally, it serves as a valuable resource for practitioners seeking to leverage GANs for optimizing the streaming experience, improving video quality, and enhancing user satisfaction in Dynamic Adaptive Streaming over HTTP. This paper consists of five sections. The key elements of dynamic adaptive streaming over HTTP is outlined in section two. A description of

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Generative Adversarial Networks (GANs) with explanations of how it works is given in section three. In section four the taxonomy for generative adversarial networks in Dynamic Adaptive streaming over HTTP is given. Section five gives a discussion of the taxonomy. Finally, the conclusion is given in section six.

### II. DYNAMIC ADAPTIVE STREAMING OVER HTTP (DASH)

DASH stands for Dynamic Adaptive Streaming over HTTP. It is a popular streaming protocol used for delivering multimedia content, such as videos, over the internet. DASH is designed to provide a high-quality streaming experience [10]] by dynamically adapting the video quality based on the available network conditions.

The key components of DASH are as follows. The Media Presentation Description (MPD) [21]] is an XML file that serves as a manifest or index for the media content. It provides information about the available video representations, their URLs, and other metadata. The client uses the MPD to request and select the appropriate video quality based on network conditions. DASH divides the video content into small segments of fixed duration, typically a few seconds long. Each segment represents a part of the video that can be independently requested and played. Different video representations are available in multiple quality levels, and each quality level is divided into segments. The client dynamically selects the most suitable quality level based on the current network conditions.

The adaptation logic [11]] is responsible for dynamically adjusting the video quality based on the available network bandwidth and client capabilities. The client monitors the network conditions and requests segments at the highest quality level that the network can support without buffering. If the network conditions deteriorate, the client may request lower-quality segments to avoid interruptions and buffering. Media players are responsible for fetching the video segments, decoding them, and rendering them on the playback device. They interact with the DASH server to request the segments and use the MPD to determine the appropriate video quality to request. Media players can be built into web browsers, mobile apps, or dedicated video players.

The DASH server is responsible for storing the video content and serving it to the clients. It receives requests from the media players for specific video segments and responds with the requested segments encoded at the appropriate quality level. The server uses the MPD to generate the necessary URLs for the requested segments. Before delivering the content via DASH, the video content needs to be encoded into different representations or bitrates to support adaptive streaming. The content preparation stage involves creating multiple versions of the video at different quality levels, with each version encoded to match the target bitrate. These representations are then made available on the DASH server, and the client can switch between them based on network conditions. In effect, DASH enables adaptive streaming by dynamically adjusting the video quality based on the network conditions, allowing viewers to enjoy a smooth streaming experience even in varying network conditions.

There are three different components or approaches that can be used to implement the streaming system: client-side, serverside, and in-network DASH [12]]. Let's take a closer look at each one. In client-side DASH, the adaptation logic and video quality selection are performed on the client-side, typically within the media player or streaming application. The client-side player receives the media presentation description (MPD) from the server, which contains information about the available video representations and their URLs. The player monitors the network conditions, such as available bandwidth, and based on that information, it dynamically selects the most suitable video quality from the available representations. The client requests the corresponding video segments from the server and plays them back. Client-side DASH provides flexibility and control to the client, allowing it to adapt the streaming experience based on its own assessment of the network conditions.

In server-side DASH, the adaptation logic is performed on the server-side rather than on the client. The server receives requests from the client for video segments, and based on the client's network conditions, it selects and delivers the appropriate video quality to the client. The server-side implementation can take into account additional factors such as server load, content popularity, and real-time network conditions across multiple clients to make adaptive bitrate decisions. Server-side DASH can offload the adaptation complexity from the client and centralize the decision-making process on the server side, providing more consistent and controlled streaming experiences.

In-network DASH, also known as network-assisted DASH or collaborative DASH, involves incorporating network information and intelligence into the adaptive streaming process. It leverages the capabilities of the network infrastructure, such as the routers or caches, to assist in delivering the content efficiently. In this approach, network devices or proxies actively monitor the network conditions and make decisions on behalf of the client or server. They can detect congestion or bandwidth fluctuations and dynamically adjust the video quality before the video reaches the client, optimizing the streaming experience. In-network DASH requires collaboration between the network infrastructure and the streaming system to exchange relevant information and make informed decisions.

Each approach has its advantages and considerations. Client-side DASH offers flexibility and control to the client device, allowing it to adapt the streaming experience based on its assessment of the network conditions. Server-side DASH centralizes the

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adaptation logic on the server-side, enabling better coordination and control over the streaming experience. In-network DASH leverages network intelligence to optimize streaming, but it requires cooperation and support from the network infrastructure. The choice of the DASH implementation approach depends on various factors, including the specific streaming requirements, network capabilities [8]], and desired level of control.

### III. GENERATIVE ADVERSARIAL NETWORKS

Generative Adversarial Networks (GANs) are a class of machine learning models that are widely used for generating new data samples that resemble a given dataset. GANs consist of two main components: a generator network and a discriminator network. These networks are trained together in an adversarial setting, where they compete against each other, hence the term "adversarial." We now discuss how GANs work. The generator network takes random input, typically from a low-dimensional noise vector, and generates synthetic data samples, such as images or audio. The generator starts with random noise and gradually learns to generate more realistic samples that resemble the training data. Initially, the generated samples may not resemble the real data, but as training progresses, the generator improves its ability to generate more convincing samples.

The discriminator network acts as a binary classifier. It takes input data samples and tries to distinguish between real samples from the training dataset and fake samples generated by the generator. The discriminator is trained on labeled data, where real samples are labeled as "real" and generated samples are labeled as "fake." The discriminator's objective is to correctly classify the real and fake samples. The generator and discriminator networks are trained in an adversarial manner. The generator aims to generate samples that the discriminator cannot distinguish from real samples, while the discriminator aims to correctly classify the real and fake samples. The networks play a "minimax" game, where the generator tries to minimize the discriminator's ability to correctly classify the samples, and the discriminator tries to maximize its accuracy in distinguishing real and fake samples.

During training, the generator and discriminator networks are updated iteratively. The generator generates fake samples, and the discriminator classifies them. The discriminator's classification results are then used to update both the discriminator and generator networks. This iterative process continues until the generator learns to generate samples that are realistic enough to deceive the discriminator. As the training progresses, the generator improves its ability to generate samples that are increasingly similar to the real data distribution. Ideally, the generator and discriminator reach a point where the generator produces samples that are indistinguishable from real samples, and the discriminator cannot differentiate between real and fake samples with high confidence.

GANs have demonstrated remarkable capabilities in various domains [23]], including image synthesis, text generation, and even video generation. They have been used for tasks like image generation, style transfer, data augmentation, and anomaly detection. GANs have also inspired numerous advancements, such as conditional GANs, progressive GANs, and cycle-consistent GANs, which have further expanded their applications. GANs provide a powerful framework for generating realistic and novel data samples by training two competing neural networks in an adversarial manner.

We now give two ways GANs can support DASH. Before delivering the content via DASH, the video content may go through a content preparation stage, where different quality levels or representations of the video are created. GANs can be used in this process to generate or enhance video content. For example, GANs can be employed to upscale low-resolution videos, enhance image quality, or generate high-quality versions of the content. By using GANs during content preparation, the generated or enhanced video representations can then be made available for adaptive streaming using DASH. GANs can also be used to enhance the perceived quality of video content during the adaptive streaming process. For example, GANs can be employed on the client-side to perform real-time video upscaling or denoising to improve the visual quality of the streamed video. This can be particularly useful when the available network bandwidth is limited and the video quality needs to be enhanced to compensate for the lower bitrate. These GAN-based enhancements can be integrated into the DASH client or media player to improve the viewing experience.

### IV. TAXONOMY

Taxonomy for Generative Adversarial Networks (GANs) in Dynamic Adaptive Streaming over HTTP (DASH):

*Video Generation:*

a. *Content Generation [1]:* GANs used to generate synthetic video content, such as scenes, objects, or characters, to enhance the content library for DASH applications. Content Generation using Generative Adversarial Networks (GANs) has been a breakthrough in the field of computer vision and artificial intelligence. GANs are now being utilized to generate synthetic video content, including scenes, objects, and characters, with the aim of enhancing the content library for Dynamic Adaptive Streaming over HTTP (DASH) applications. DASH is a popular streaming protocol that dynamically adapts the quality of video content based on network conditions and device capabilities. To provide a seamless streaming experience, DASH applications require a diverse



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and extensive library of video content. However, creating such content manually can be time-consuming, expensive, and limited in scope.

To address these challenges, researchers and developers have turned to GANs, which are deep learning models consisting of two neural networks: a generator and a discriminator. The generator network learns to generate synthetic video content by capturing patterns and structures from a given dataset, while the discriminator network learns to distinguish between real and synthetic content. In the context of enhancing the content library for DASH applications, GANs can be trained on existing video datasets to generate new synthetic video content. For example, GANs can learn the visual features, dynamics, and spatial relationships of different scenes, objects, or characters from a large collection of videos. Once trained, the GAN can generate novel video content that closely resembles the characteristics of the original dataset.

The generated synthetic video content can then be integrated into the content library of DASH applications. This expands the variety of available scenes, objects, and characters, enabling a more diverse and engaging streaming experience for users. Additionally, the synthetic content can be generated on-demand, allowing for real-time adaptation and personalization based on user preferences, network conditions, or other contextual factors. It's important to note that the quality and realism of the generated content heavily rely on the training data, the architecture of the GAN model, and the optimization techniques used during training. Further advancements in GAN research and techniques, along with improvements in computing power, will likely contribute to the generation of even more realistic and high-quality synthetic video content for DASH applications in the future.

b. *Frame Interpolation [20]*: GAN architectures designed to generate intermediate frames between existing frames to improve video smoothness during streaming. Frame interpolation is a technique used to generate intermediate frames between existing frames in a video sequence, with the aim of improving the smoothness and visual quality of the video. Recently, Generative Adversarial Networks (GANs) have been utilized to create advanced architectures specifically designed for frame interpolation tasks during video streaming. In traditional video streaming, the frame rate is fixed, and the video player displays each frame at a constant rate. However, this can sometimes result in jerky or choppy motion, especially when the original video has a low frame rate. Frame interpolation addresses this issue by generating additional frames that fill in the gaps between the existing frames, resulting in a higher frame rate and smoother motion.

To achieve frame interpolation, GAN architectures are trained using pairs of consecutive frames from a video dataset. The architecture typically consists of a generator network and a discriminator network. The generator network is responsible for generating the intermediate frames, while the discriminator network evaluates the realism and quality of the generated frames. During training, the generator network learns to generate visually coherent and smooth intermediate frames by capturing the temporal dependencies and motion patterns present in the training data. The discriminator network provides feedback to the generator network, helping it improve its frame generation capabilities over time. This adversarial training process allows the GAN to generate high-quality intermediate frames that seamlessly blend with the original frames.

When integrated into video streaming applications, GAN-based frame interpolation can significantly enhance the viewing experience by providing smoother and more visually appealing videos. The interpolated frames fill the temporal gaps, reducing judder and improving the perception of motion. This is particularly useful in scenarios where the original video has a low frame rate or when streaming over networks with limited bandwidth. It's worth noting that the success of GAN-based frame interpolation depends on factors such as the complexity of the video content, the training dataset's diversity, the architecture of the GAN model, and the optimization techniques employed during training. Ongoing research in GANs and frame interpolation techniques continues to refine and improve the performance of these models, leading to even better video smoothness during streaming in the future.

### *Video Compression and Quality Enhancement:*

a. *Video Compression [18]*: GANs utilized to optimize video compression algorithms, reducing the required bitrate while maintaining perceptual video quality. Video compression is a crucial technology used to efficiently store and transmit video content by reducing its file size while preserving its quality. Generative Adversarial Networks (GANs) have emerged as a promising tool in optimizing video compression algorithms to achieve higher compression ratios without sacrificing perceptual video quality. Traditional video compression algorithms, such as those based on the H.264 or H.265 standards, employ various techniques like motion estimation, transform coding, and entropy coding to compress video data. However, there is often a trade-off between compression efficiency and visual quality. Higher compression typically leads to more data loss and degradation in video quality.

By integrating GANs into the video compression pipeline, researchers aim to improve the visual quality of compressed videos by training GAN models to generate visually appealing content from compressed video data. The GANs are typically trained on a large dataset of uncompressed videos, learning to capture the statistical properties, textures, and details of high-quality video frames. During training, the generator network of the GAN learns to generate visually similar frames to the original video frames, given the compressed video data as input. The discriminator network evaluates the realism and perceptual quality of the

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generated frames. Through an adversarial training process, the GAN models learn to produce synthetic frames that preserve essential visual information, effectively compensating for some of the loss incurred during compression.

By incorporating GAN-based optimization techniques into video compression algorithms, it is possible to achieve higher compression ratios without compromising perceptual video quality. The generated frames can fill in missing details, improve texture reproduction, and enhance overall visual fidelity. This allows for a reduced bitrate requirement while maintaining the desired quality level, resulting in more efficient video transmission and storage. It's important to note that the performance of GAN-based video compression heavily relies on the training dataset's diversity, the architecture of the GAN model, the compression algorithm's design, and the specific optimization techniques employed. Ongoing research in this field aims to further refine GAN-based video compression methods, enabling even more efficient compression and higher perceptual quality in future video streaming and storage applications.

b. *Super-Resolution [24]*: GAN models employed to enhance the resolution of video frames, enabling better visual quality and detail during streaming. Super-resolution is a technique used to enhance the resolution of images or video frames, enabling better visual quality, sharper details, and improved perception of fine textures. Generative Adversarial Networks (GANs) have proven to be effective in achieving high-quality super-resolution results, and they can be employed to enhance the resolution of video frames during streaming. GAN-based super-resolution works by training a generator network to upsample low-resolution video frames to a higher resolution. The generator network is trained using pairs of low-resolution and high-resolution video frames. The generator's objective is to generate high-resolution frames that closely resemble the corresponding high-resolution frames from the training dataset.

The training process involves an adversarial setup where a discriminator network evaluates the realism of the generated high-resolution frames. This adversarial training helps the generator network learn to produce visually plausible and sharp frames that are indistinguishable from the true high-resolution frames. Additionally, perceptual loss functions are often employed to ensure that the generated frames preserve important details and visual characteristics. When integrated into video streaming applications, GAN-based super-resolution techniques allow for the real-time enhancement of video frames, resulting in improved visual quality and finer details. Low-resolution video frames can be upsampled to a higher resolution, enhancing the viewing experience for users.

Super-resolution using GANs can be particularly beneficial when streaming content over bandwidth-limited networks or when the original video source has a lower resolution. By enhancing the resolution of video frames during streaming, viewers can enjoy videos with crisper details and improved image fidelity, creating a more immersive and visually satisfying experience. It's worth noting that the success of GAN-based super-resolution techniques depends on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization methods employed during training. Ongoing research in this area aims to further refine GAN-based super-resolution methods, enabling even higher levels of detail and visual quality in streaming video applications.

### *Bandwidth Adaptation and Quality Control:*

a. *Bandwidth Prediction [16]*: GAN-based models used to predict future network conditions and available bandwidth to optimize video streaming decisions, such as bitrate selection. Bandwidth prediction is a critical component of video streaming systems, as it enables adaptive bitrate selection and ensures an optimal streaming experience for users. Generative Adversarial Networks (GANs) have been utilized to develop models that can predict future network conditions and available bandwidth, allowing for more informed video streaming decisions. In the context of bandwidth prediction, GANs are trained on historical network data, such as past bandwidth measurements, network congestion levels, and other relevant features. The GAN consists of a generator network and a discriminator network, similar to other GAN architectures. However, in this case, the generator network's task is to generate future bandwidth predictions based on the historical data, while the discriminator network assesses the accuracy and quality of these predictions.

During training, the GAN learns to capture the temporal dependencies and patterns in the historical network data. The generator network is trained to generate plausible future bandwidth values, while the discriminator network distinguishes between real and generated bandwidth sequences. The adversarial training process enables the GAN model to generate accurate and realistic predictions of future bandwidth conditions. By employing GAN-based bandwidth prediction models in video streaming systems, bitrate selection and other streaming decisions can be optimized. The predicted future bandwidth information can be used to adaptively adjust the streaming bitrate to match the available network conditions. When bandwidth is expected to be high, the system can select a higher bitrate to deliver higher-quality video. Conversely, if bandwidth is predicted to be low, the system can choose a lower bitrate to avoid buffering or interruptions.

By leveraging GAN-based bandwidth prediction, video streaming systems can dynamically adapt their streaming strategies to optimize the trade-off between video quality and smooth playback, providing users with the best possible streaming experience

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given the predicted network conditions. It's important to note that the accuracy of GAN-based bandwidth prediction models depends on factors such as the availability and quality of historical network data, the architecture and design of the GAN model, and the specific optimization techniques employed during training. Ongoing research in this area aims to improve the accuracy and reliability of bandwidth prediction models, leading to more efficient video streaming over varying network conditions.

b. *Rate Adaptation [17]*: GAN architectures utilized to adaptively adjust the video bitrate based on network conditions and user preferences, ensuring smooth and uninterrupted streaming. Rate adaptation refers to the process of dynamically adjusting the video bitrate during streaming based on network conditions and user preferences. While Generative Adversarial Networks (GANs) are not typically utilized directly for rate adaptation in streaming systems, we will explain an alternative approach that incorporates GAN architectures to achieve adaptive bitrate adjustments. One approach to rate adaptation that incorporates GAN architectures is to leverage the power of GAN-based video super-resolution. Super-resolution techniques aim to enhance the quality of low-resolution videos by generating high-resolution versions. By utilizing GANs for video super-resolution, the adaptive streaming system can dynamically adjust the bitrate based on network conditions and user preferences while ensuring smooth and uninterrupted streaming.

Here's how this GAN-based rate adaptation could work. At the start of the streaming session, an initial video bitrate is selected based on the user's device capabilities, network conditions, and user preferences. This initial bitrate ensures a reasonable quality level for smooth playback. Throughout the streaming session, the system continuously monitors the network conditions, including available bandwidth, latency, and fluctuations in the network quality. This real-time monitoring allows the system to adapt the bitrate on the fly to optimize the streaming experience. When the network conditions change or deteriorate, and the current bitrate may no longer be sustainable, the system initiates a quality adjustment decision. In this step, the GAN architecture comes into play. Instead of directly reducing the video bitrate, the system employs GAN-based video super-resolution techniques. The low-resolution video frames from the current bitrate are fed into the GAN architecture. The GAN then generates high-resolution frames that maintain or enhance the perceived quality, even at lower bitrates.

After generating the high-resolution frames, the system dynamically adjusts the video bitrate downwards while maintaining the improved visual quality. This adaptive bitrate adjustment ensures that the streaming experience remains smooth and uninterrupted, despite the reduced network conditions. The process of real-time network monitoring, quality adjustment decisions, GAN-based super-resolution, and bitrate adjustments continue throughout the streaming session. The system continually evaluates the network conditions, user preferences, and available resources to optimize the streaming experience. By integrating GAN-based video super-resolution techniques into the rate adaptation process, this approach can adaptively adjust the video bitrate while ensuring that the perceived quality remains high. It enhances the streaming experience by leveraging GAN architectures to generate high-resolution frames that compensate for lower bitrates caused by network limitations.

We now provide an overview of how GAN architectures could potentially be utilized in client-side, in-network and server-side for adaptive bitrate adjustment. In a client-side DASH scenario, GAN architectures can be employed to enhance the video quality on the client-side based on network conditions and user preferences. GAN-based video super-resolution techniques can be utilized to generate high-resolution frames from lower bitrate video segments. By adapting the bitrate dynamically while leveraging GAN-generated high-resolution frames, the client can maintain an improved visual quality, even under varying network conditions. In the context of in-network DASH, GAN architectures can be utilized within the network infrastructure to assist in adaptive bitrate adjustment. Network devices or proxies equipped with GAN-based video super-resolution capabilities can enhance the video quality before delivering it to the client. By generating high-resolution frames within the network, the system can optimize the streaming experience and ensure smooth playback even with limited network resources.

In server-side DASH, GAN architectures can be employed to enhance the video quality before it is delivered to the clients. The server can leverage GAN-based video super-resolution techniques to generate high-resolution frames from lower bitrate video representations. By dynamically adjusting the bitrate while utilizing GAN-generated frames, the server can optimize the streaming experience for clients with varying network conditions and user preferences. It's important to note that while GANs can provide benefits in terms of enhancing video quality, the actual implementation and integration of GAN architectures in client-side, in-network, or server-side DASH systems would require careful consideration of factors such as computational requirements, latency, and scalability. The utilization of GAN architectures for rate adaptation in DASH implementations, irrespective of the specific context, would involve leveraging GAN-based video super-resolution techniques to enhance the visual quality of the streamed content while adapting the video bitrate based on network conditions and user preferences.

*Dynamic Adaptive Bitrate Streaming:*

a. *Video Segment Selection [3]*: GANs employed to select appropriate video segments based on network conditions, user preferences, and video content characteristics to optimize the streaming experience. Video segment selection plays a crucial role in optimizing the streaming experience by choosing appropriate segments of a video based on factors such as network conditions,

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user preferences, and video content characteristics. Generative Adversarial Networks (GANs) have been utilized to develop models that can assist in the selection of video segments, improving the streaming experience for users. In the context of video segment selection, GANs can be trained on a variety of data, including user preferences, historical viewing patterns, network conditions, and video content metadata. The GAN architecture typically consists of a generator network and a discriminator network. The generator network is responsible for generating candidate video segments, while the discriminator network evaluates the quality, relevance, and suitability of these segments.

During training, the GAN learns to capture the relationships between different factors and generate video segments that align with user preferences, network conditions, and video content characteristics. The discriminator network provides feedback to the generator network, helping it improve its segment selection capabilities over time. This adversarial training process enables the GAN model to generate appropriate video segments that optimize the streaming experience based on the given context. By employing GAN-based video segment selection models, streaming systems can adaptively choose video segments that cater to specific user preferences and network conditions. For example, if the network conditions are poor, the system may prioritize selecting lower bitrate segments or shorter segments to ensure smooth playback and minimize buffering. Conversely, if the network conditions are stable and user preferences indicate a preference for higher-quality content, the system may select higher bitrate segments with longer durations.

The GAN-based segment selection models can also take into account video content characteristics such as genre, scene complexity, or specific content features to further optimize the streaming experience. This ensures that the selected video segments align with the content being streamed and provide an enhanced viewing experience. It's important to note that the effectiveness of GAN-based video segment selection relies on factors such as the diversity and quality of the training data, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this field aims to improve the accuracy and personalization capabilities of video segment selection models, leading to more tailored and optimized streaming experiences for users.

b. *Chunk-Based Adaptation [7]*: GAN models utilized to determine the optimal chunk size and quality level for video streaming, dynamically adjusting the streaming parameters. Chunk-based adaptation is a technique used in video streaming to dynamically adjust the size and quality level of video chunks based on network conditions and user preferences. Generative Adversarial Networks (GANs) have been employed to develop models that can determine the optimal chunk size and quality level, optimizing the streaming parameters for an enhanced viewing experience. In the context of chunk-based adaptation, GANs can be trained on various data sources, including historical network measurements, user behavior, and video content characteristics. The GAN architecture typically consists of a generator network and a discriminator network. The generator network generates candidate chunk configurations, including different chunk sizes and quality levels, while the discriminator network evaluates the quality and suitability of these configurations.

During training, the GAN learns to capture the relationships between network conditions, user preferences, and video content characteristics to generate optimal chunk configurations. The discriminator network provides feedback to the generator network, enabling it to improve its decision-making capabilities over time. This adversarial training process allows the GAN model to generate chunk configurations that maximize the streaming experience based on the given context. By employing GAN-based chunk adaptation models, streaming systems can dynamically adjust the size and quality level of video chunks. For instance, if the network conditions are favorable and user preferences indicate a preference for high-quality content, the system may select larger chunks with higher quality levels. In contrast, if the network conditions deteriorate or user preferences lean towards minimizing buffering, the system may choose smaller chunks with lower quality levels to ensure smooth playback.

The GAN-based chunk adaptation models take into account factors such as available bandwidth, latency, video complexity, and user preferences to optimize the streaming parameters. This ensures that the streaming system dynamically adapts to the changing network conditions and user requirements, delivering an optimal balance between video quality and smooth playback. It's worth noting that the effectiveness of GAN-based chunk adaptation depends on factors such as the training dataset's diversity and quality, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this area aims to improve the accuracy and real-time adaptation capabilities of chunk-based adaptation models, leading to more efficient and personalized video streaming experiences.

*Quality Enhancement and Restoration:*

a. *Video Denoising [2]*: GAN architectures utilized to remove noise and artifacts from video streams, enhancing visual quality during streaming. Video denoising is a technique used to reduce noise and artifacts in video streams, resulting in improved visual quality and a more pleasant viewing experience. Generative Adversarial Networks (GANs) have proven to be effective in addressing video noise and artifacts by generating clean and visually appealing video frames in real-time during streaming. In the context of video denoising, GANs are trained on pairs of noisy and clean video frames. The generator network in the GAN is

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responsible for generating denoised frames that resemble the clean frames, given the corresponding noisy frames as input. The discriminator network evaluates the realism and perceptual quality of the generated frames.

During the training process, the GAN model learns to capture the noise characteristics and patterns present in the training data, allowing it to generate denoised frames that effectively remove noise and artifacts while preserving essential visual details. The adversarial training process helps the generator network produce realistic and visually pleasing frames that are perceptually close to the clean frames. When integrated into video streaming applications, GAN-based video denoising techniques can enhance the visual quality of streamed videos by reducing noise, compression artifacts, and other imperfections. This results in a clearer and more enjoyable viewing experience for users, especially in scenarios where the video content may have been affected by low light conditions, high compression ratios, or transmission errors. It's important to note that the performance of GAN-based video denoising methods depends on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this field aims to further refine GAN-based video denoising techniques, enabling even higher levels of noise reduction and visual quality improvement during video streaming.

b. *Video Deblurring [5]*: GAN models employed to reduce motion blur and improve the sharpness of video frames during streaming. Video deblurring is a technique used to reduce motion blur and enhance the sharpness of video frames, resulting in improved visual quality and clarity during streaming. Generative Adversarial Networks (GANs) have emerged as a powerful tool in addressing video blur by generating sharp and clear frames in real-time. In the context of video deblurring, GANs are trained on pairs of blurred and sharp video frames. The generator network in the GAN is responsible for generating deblurred frames that resemble the sharp frames, given the corresponding blurred frames as input. The discriminator network evaluates the realism and perceptual quality of the generated frames.

During the training process, the GAN model learns to capture the motion blur characteristics and patterns present in the training data, enabling it to generate deblurred frames that effectively reduce the blur while preserving important visual details. The adversarial training process helps the generator network produce deblurred frames that are visually realistic and closely resemble the sharp frames. When integrated into video streaming applications, GAN-based video deblurring techniques can significantly enhance the visual quality of streamed videos by reducing motion blur and improving sharpness. This is particularly beneficial in scenarios where the video content may have been affected by camera shake, fast motion, or other factors causing blur during video capture.

By applying GAN-based deblurring in real-time during streaming, the perceived sharpness and clarity of video frames can be significantly improved. This leads to a more enjoyable viewing experience for users, where details are more pronounced, and the overall visual quality is enhanced. It's important to note that the performance of GAN-based video deblurring methods relies on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this field aims to further refine GAN-based video deblurring techniques, enabling even better motion blur reduction and visual quality improvement during video streaming.

c. *Video Colorization [14]*: GAN-based approaches used to add color to grayscale or low-quality videos, enhancing visual experience during streaming. Video colorization is a technique used to add color to grayscale or low-quality videos, enhancing the visual experience and making the content more engaging and realistic. Generative Adversarial Networks (GANs) have been employed to develop models that can effectively colorize videos in real-time during streaming. In the context of video colorization, GANs are trained on pairs of grayscale or low-quality video frames and their corresponding colorized versions. The generator network in the GAN is responsible for generating colorized frames that closely resemble the true colors of the input frames. The discriminator network evaluates the realism and quality of the generated colorized frames.

During the training process, the GAN model learns to capture the relationship between grayscale/low-quality frames and their colorized counterparts. This allows the generator network to generate colorized frames that accurately depict the original colors and visual characteristics of the input frames. The adversarial training process helps the generator network produce colorized frames that are visually realistic and visually pleasing. When integrated into video streaming applications, GAN-based video colorization techniques can significantly enhance the visual experience by adding color to grayscale or low-quality videos. This is particularly useful in scenarios where the original video content is in grayscale, historical footage lacks color, or low-quality videos need visual enhancement. The colorization process can make the content more appealing, realistic, and immersive for viewers.

By applying GAN-based colorization in real-time during streaming, the grayscale or low-quality videos can be transformed into vibrant and visually pleasing content. This enhances the overall visual experience for users, making the content more engaging and enjoyable. It's important to note that the performance of GAN-based video colorization depends on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization techniques

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employed during training. Ongoing research in this field aims to further refine GAN-based video colorization methods, enabling even better color accuracy and visual quality improvement during video streaming.

*Quality Assessment and Objective Metrics:*

a. *Perceptual Quality Assessment [13]*: GAN-based models utilized to assess the perceived quality of streamed videos, Providing objective quality metrics for adaptive streaming algorithms. Video colorization is a technique used to add color to grayscale or low-quality videos, enhancing the visual experience and making the content more engaging and realistic. Generative Adversarial Networks (GANs) have been employed to develop models that can effectively colorize videos in real-time during streaming. In the context of video colorization, GANs are trained on pairs of grayscale or low-quality video frames and their corresponding colorized versions. The generator network in the GAN is responsible for generating colorized frames that closely resemble the true colors of the input frames. The discriminator network evaluates the realism and quality of the generated colorized frames.

During the training process, the GAN model learns to capture the relationship between grayscale/low-quality frames and their colorized counterparts. This allows the generator network to generate colorized frames that accurately depict the original colors and visual characteristics of the input frames. The adversarial training process helps the generator network produce colorized frames that are visually realistic and visually pleasing. When integrated into video streaming applications, GAN-based video colorization techniques can significantly enhance the visual experience by adding color to grayscale or low-quality videos. This is particularly useful in scenarios where the original video content is in grayscale, historical footage lacks color, or low-quality videos need visual enhancement. The colorization process can make the content more appealing, realistic, and immersive for viewers.

By applying GAN-based colorization in real-time during streaming, the grayscale or low-quality videos can be transformed into vibrant and visually pleasing content. This enhances the overall visual experience for users, making the content more engaging and enjoyable. It's important to note that the performance of GAN-based video colorization depends on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this field aims to further refine GAN-based video colorization methods, enabling even better color accuracy and visual quality improvement during video streaming.

b. *Content-Adaptive Metrics [22]*: GAN architectures used to develop metrics that consider content-specific quality aspects, such as video complexity, motion, or scene semantics. Content-adaptive metrics play a crucial role in assessing the quality of streamed videos by considering content-specific aspects that influence the perceived quality. Generative Adversarial Networks (GANs) have been employed to develop metrics that capture content-specific quality aspects, such as video complexity, motion, or scene semantics. In the context of content-adaptive metrics, GANs are trained on pairs of videos and corresponding subjective quality scores obtained through human assessments. The generator network in the GAN is responsible for generating quality scores or features that capture content-specific quality aspects. The discriminator network evaluates the realism and relevance of the generated quality scores or features.

During the training process, the GAN model learns to capture the relationships between video content and subjective quality assessments, enabling it to generate content-adaptive quality metrics. These metrics take into account the specific characteristics of the video content, such as its complexity, motion characteristics, or semantic information, to provide quality assessments that align with human perception. By employing GAN-based content-adaptive metrics, video streaming systems can utilize quality metrics that are tailored to the specific content being streamed. This enables more accurate and meaningful quality assessments that consider the content-specific aspects influencing the perceived quality. Such metrics can be used in adaptive streaming algorithms to make informed decisions on video representation selection or bitrate adaptation, ensuring optimal quality for different types of content.

The use of GAN-based models in developing content-adaptive metrics allows for a more fine-grained analysis of video quality that goes beyond traditional metrics. GANs can capture complex content characteristics and generate quality metrics that are sensitive to those aspects, providing a more comprehensive assessment of video quality that aligns with human perception. It's important to note that the effectiveness of GAN-based content-adaptive metrics depends on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this field aims to refine and improve GAN-based content-adaptive metrics, enabling more accurate and context-aware quality assessment in video streaming applications. *Cross-Modal Applications:*

a. *Audio-Visual Synchronization [4]*: GAN models employed to synchronize audio and video streams during DASH playback, ensuring lip-sync accuracy and improving the user experience. Audio-visual synchronization is a critical aspect of video streaming to ensure that the audio and video streams are properly aligned, resulting in accurate lip-sync and an improved user experience. Generative Adversarial Networks (GANs) have been utilized to develop models that can synchronize audio and video streams during Dynamic Adaptive Streaming over HTTP (DASH) playback. In the context of audio-visual synchronization, GANs are trained

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on pairs of misaligned audio and video streams. The generator network in the GAN is responsible for generating synchronized audio and video streams by adjusting the temporal alignment between them. The discriminator network evaluates the synchronization accuracy and perceptual quality of the generated streams.

During the training process, the GAN model learns to capture the relationship between audio and video streams and adjust the temporal alignment to achieve accurate synchronization. The adversarial training process helps the generator network produce synchronized audio and video streams that closely match the original timing and lip movements. By employing GAN-based audio-visual synchronization models, video streaming systems can ensure that the audio and video streams are properly aligned, resulting in accurate lip-sync and a seamless user experience. This is particularly important in scenarios where misalignment between audio and video can lead to a significant degradation in the viewing experience.

When integrated into DASH playback, GAN-based audio-visual synchronization techniques can dynamically adjust the temporal alignment between audio and video streams to compensate for network delays, buffering, or other factors that may cause synchronization issues. This ensures that the audio and video remain properly aligned throughout the playback, enhancing the overall viewing experience and maintaining lip-sync accuracy. It's important to note that the performance of GAN-based audio-visual synchronization methods depends on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this field aims to further refine GAN-based audio-visual synchronization techniques, enabling even more accurate and robust synchronization for seamless video streaming.

b. *Multimodal Data Generation [15], 6]*: GAN architectures utilized to generate multimodal data, such as synchronized audio and video streams, for enhanced streaming experiences. Multimodal data generation refers to the generation of data that combines multiple modalities, such as synchronized audio and video streams, to create a richer and more immersive streaming experience. Generative Adversarial Networks (GANs) have been employed to develop architectures that can generate multimodal data, allowing for enhanced streaming experiences. In the context of multimodal data generation, GANs are trained on paired examples of multimodal data, such as synchronized audio and video streams. The generator network in the GAN is responsible for generating new instances of multimodal data, combining audio and video modalities in a synchronized manner. The discriminator network evaluates the realism and quality of the generated multimodal data.

During the training process, the GAN model learns to capture the relationships between the audio and video modalities and generate synchronized instances that resemble the training data. This enables the generator network to produce new, realistic, and synchronized audio and video streams. The adversarial training process helps ensure the generated multimodal data is perceptually accurate and visually and audibly plausible. By employing GAN-based multimodal data generation models, streaming applications can enhance the user experience by generating immersive and synchronized audio and video content. This can be particularly valuable in scenarios where synchronized audio and video are crucial, such as in video conferencing, virtual reality, or interactive streaming applications.

The use of GANs in generating multimodal data enables the creation of diverse and realistic combinations of audio and video streams, leading to more engaging and immersive streaming experiences. This technology can be used to generate content that matches specific user preferences or to create interactive and personalized streaming applications. It's important to note that the performance of GAN-based multimodal data generation depends on factors such as the diversity and quality of the training dataset, the architecture and design of the GAN model, and the optimization techniques employed during training. Ongoing research in this field aims to further refine GAN-based multimodal data generation techniques, enabling even more realistic and immersive streaming experiences.

This taxonomy provides an overview of the different aspects and applications of Generative Adversarial Networks (GANs) in the context of Dynamic Adaptive Streaming over HTTP (DASH). It covers various stages of the streaming pipeline, including video generation, compression, adaptation, quality enhancement, and cross-modal applications. Note that the field of GANs in DASH is evolving, and new architectures, techniques, and applications may emerge in the future.

## V. DISCUSSION

The taxonomy presented for Generative Adversarial Networks (GANs) in Dynamic Adaptive Streaming over HTTP (DASH) provides a structured framework to categorize and organize the various applications and techniques of GANs in the context of video streaming. In this discussion, we explore the significance and implications of the taxonomy. The taxonomy covers a wide range of dimensions in which GANs can be applied to improve DASH (Comprehensive Coverage). It encompasses video generation, compression, quality enhancement, bandwidth adaptation, dynamic bitrate streaming, and cross-modal applications. This comprehensive coverage ensures that the taxonomy captures the major areas where GANs can play a vital role in optimizing the streaming experience.

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The taxonomy recognizes the specific applications of GANs in DASH, addressing important aspects such as content generation, frame interpolation, video compression, super-resolution, denoising, deblurring, and more. By organizing the applications within the taxonomy, researchers and practitioners can easily identify the specific areas of interest and relevance to their own work or domain. The taxonomy acknowledges the importance of adaptation and quality control in DASH. GAN-based approaches for bandwidth prediction, rate adaptation, video segment selection, and chunk-based adaptation are included. These techniques are crucial for optimizing video streaming decisions, ensuring smooth playback, and providing the best possible video quality under varying network conditions.

The taxonomy highlights the significance of evaluation metrics for assessing the effectiveness of GAN-based approaches in DASH. It discusses metrics such as perceptual quality assessment, content-adaptive metrics, and objective metrics like Inception Score and Fréchet Inception Distance. By considering various evaluation metrics, the taxonomy emphasizes the need for quantitative analysis and comparison of different GAN models and techniques. The taxonomy also points to emerging research areas within the scope of GANs in DASH. For example, the cross-modal applications category recognizes the importance of audio-visual synchronization and multimodal data generation. These areas offer opportunities for further exploration and innovation, where GANs can contribute to enhancing the immersive and synchronized streaming experience.

The taxonomy has practical implications for researchers and practitioners working on video streaming and DASH applications. It provides a structured framework that facilitates understanding, comparison, and exploration of GAN-based approaches. The taxonomy enables researchers to identify gaps in the field, identify specific subcategories of interest, and develop novel solutions for improving video quality, bandwidth adaptation, and user satisfaction in DASH. The taxonomy presented for GANs in DASH serves as a valuable resource for understanding the different dimensions, applications, and techniques of GANs in the context of video streaming. By organizing the diverse aspects within a structured framework, the taxonomy enables researchers and practitioners to navigate the field, identify areas for further research, and leverage GANs to optimize the streaming experience in Dynamic Adaptive Streaming over HTTP.

## VI. CONCLUSIONS

The taxonomy presented for Generative Adversarial Networks (GANs) in Dynamic Adaptive Streaming over HTTP (DASH) provides a comprehensive and structured framework for understanding and organizing the applications and techniques of GANs in the context of video streaming. It covers various dimensions, including video generation, compression, quality enhancement, bandwidth adaptation, dynamic bitrate streaming, and cross-modal applications. By categorizing and organizing the different aspects of GANs in DASH, the taxonomy facilitates better understanding, comparison, and exploration of GAN-based approaches. It enables researchers and practitioners to identify specific areas of interest, address research gaps, and develop novel solutions to enhance the streaming experience. The taxonomy highlights the relevance of GANs in key areas such as content generation, compression, quality enhancement, adaptation, and cross-modal applications. It recognizes the significance of evaluation metrics for assessing the effectiveness of GAN-based techniques and emphasizes the need for quantitative analysis and comparison. Furthermore, the taxonomy points to emerging research areas within the scope of GANs in DASH, such as audio-visual synchronization and multimodal data generation. These areas offer opportunities for further exploration and innovation, contributing to the development of more immersive and synchronized streaming experiences. The taxonomy serves as a valuable resource for researchers and practitioners involved in video streaming and DASH applications. It provides a structured framework to navigate the field, identify relevant subcategories, and leverage GANs to optimize video quality, bandwidth adaptation, and user satisfaction in the context of Dynamic Adaptive Streaming over HTTP.

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## Legal Consequences of Breach of Promise for Buyers in the Sale and Purchase of Purchase Order (Po) System



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**ABSTRACT:** Purchase Order (PO) is an anonymous agreement not regulated in codification, especially in the Civil Code, including the legal consequences of default in buying and selling PO systems. This research aims to know, analyze, and find the legal status of purchase orders (PO) as a buying and selling system. This research is also to know, analyze and find the legal consequences of a case of default for the Buyer in the purchase order system (PO). Parties who have agreed to make a sale and purchase using PO, sometimes one party needs to carry out its obligations to the detriment of the other party. This research was conducted using the normative juridical method. The results showed that PO has legal force and is an agreement. Therefore, legal consequences in the form of sanctions must be accepted by parties who are negligent in their obligations, such as providing compensation and receiving sanctions with the cancellation of the agreement based on a court decision.

**KEYWORDS:** Analysis, Legal Consequences, Agreement, Buy and sell, Purchase Order (PO)

### I. INTRODUCTION

Society as a social being always needs each other. This need is marked by the existence of legal relationships that exist in society because humans are social creatures. One of the parties that have a legal relationship is buying and selling. Buying and selling are included in mutually beneficial activities between sellers and buyers. Based on developments, buying, and selling can be done in various forms, one of which uses a Purchase Order (PO). PO is a letter of agreement between the two parties that must be carried out as agreed upon following rights and obligations. Based on the understanding of the PO, the parties who agree on the goods and prices must be responsible for their respective obligations to be mutually beneficial.

Jeremy Bentham (utilitarianism theory) expressed his opinion simply regarding the purpose of the law. The purpose of the law is a process to maximize the usefulness of action so that from the process that occurs, the subject can obtain a benefit, happiness, profit, and enjoyment, which hopefully does not cause feelings that make the subject unhappy (Endang Pratiwi et al., 2022, p. 277). One party often violates its obligations to the other party's detriment when buying and selling the PO system. The existence of these losses is certainly not in line with the purpose of the law, according to Bentham, because there is no happiness and profit.

Parties who have agreed to use POs as a sale and purchase must carry out all their obligations without exception, according to Article 1513 of the Civil Code (KUH Perdata), which explains the Buyer's obligation, namely to give the money according to the price of the goods as promised. Based on the facts, buyers still violate their obligations to the detriment of the other party, namely the seller.

Based on Judge Decision Number 730/Pdt.G/2019/PN Jkt. However, The seller (PT Elektra Baru Sukses) and the Buyer (PT Multi Sistem Komunikasi) initially agreed to provide goods using the PO system. The Buyer has paid 10% of the agreement and the remaining 90% payment after the goods arrive. The seller then fulfilled his obligations by delivering the goods according to the predetermined quantity and time and even arrived before time. However, the Buyer then broke his promise or did not fulfill his obligations by making payment of the remaining 90% of the agreed-upon time. The seller filed a lawsuit with the Court. However, the Judge refused because the PO did not have legal status as an agreement, so it was necessary to examine whether the PO was included as an agreement or not according to the Civil Code because the PO was a new type of agreement. The Buyer has violated his obligations according to Article 1513 of the Civil Code. One party does not carry out its obligations according to the PO agreement, which means that it has legal consequences. Therefore, analyzing the legal consequences of the Buyer's actions that have harmed the seller in the sale and purchase carried out using the PO system is necessary.

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This research has 2 (two) objectives; the first is to know, analyze and find the legal status of the purchase order (PO) as a buying and selling system. The second research objective is to find out, analyze and discover the legal consequences of a case of breach of promise for the Buyer in the purchase order system. The research differs from other studies, such as those by Dhoni Yusra and Nelly Nilam Sari; they discuss the "analysis of purchase orders as a sale and purchase agreement" in *Lex Jurnalica* Vol. 9, No. 1, April 2012. The research discusses PO as an agreement in terms of the Civil Code, namely Article 1320 of the Civil Code, and the principle of contract law or agreement, namely the principle of freedom of contract. While the author in this study analyses using the theory of legal objectives or utility from Jeremy Bentham and then describes it with the contents of other articles of the Civil Code (BW) related, the author also reviews the latest sources of contract or agreement law books with the opinions of experts, as well as the principles of contract law, namely the principle of consensual and the principle of *pacta sunt servanda*.

The following research that can be distinguished from the author's research is Sri Wahyuni's research which discusses "Legal Protection for Business Actors as a Result of Unilateral Cancellation by Consumers in the Online Buy and Sell Pre-Order (PO) System" This is a thesis in 2019. This researcher discusses in terms of legal protection, but the author discusses in terms of legal consequences, so there are no similarities in this research. Then another similar research belonging to Debora related to "Purchase Order (PO) Seen from the Law of the Agreement and its Juridical Implications." This researcher discusses that the PO approved by the two subjects is a letter that can be mentioned as a source of formal law. POs give rights and obligations to parties who agree to use them. Meanwhile, the author discusses the same thing looking for the legal force of the PO, but analyses using the theory of legal objectives and principles of agreement and reviews the relevant articles in the Civil Code.

The next difference is in other studies that discuss the late issuance of purchase orders, thus proving their legal strength. This research differs from the author's research because it discusses that the Purchase Order (PO) can be used as evidence in Court if there is a dispute or if one party fails to carry out its obligations. This research discusses the proof of PO letters published late, but the author discusses the legal status of PO letters according to the publication time agreed by both parties. The author discusses the same thing but further reviews the legal force of the PO using the principles of the agreement and is analyzed using the theory of legal objectives and articles in the Civil Code that are related in order to specifically explain that the PO is an agreement and can be used as evidence. Thus, this author's research has nothing in common with other researchers' research because there is no similarity even though it uses the same theme.

## II. METHODS OF RESEARCH

This research uses legal research, which means research used to find solutions to various legal issues that arise (Peter Mahmud Marzuki, 2021: 83). The problems or legal issues are answered using normative juridical research. Normative juridical research collects and uses secondary data and focuses on laws and regulations (Muhaimin, 2020, p. 45). Secondary data consists of related law books, journals, and others supporting this research (Muhaimin, 2020, p. 61); therefore, it does not use primary data. The data were analyzed using qualitative analysis techniques and conclusions using deductive-inductive conclusions, namely departing from general matters and then ending in specific matters specifically related to the problem (Suteki, Galang Taufani, 2018: 180-181).

## III. RESULT AND DISCUSSION

### A. Review Of The Broken Promise And Buy And Sale Of Purchase Order (PO) System

#### 1. Setting and definition of breach of promise

The regulation of default is regulated in Article 1239 of the Civil Code, which states that if the debtor is unable to fulfill the obligation, the settlement provides for reimbursement of costs, losses, and interest, whether the obligation is intended to do something or not to do something. Article 1243 of the Civil Code also explains agreements that are not fulfilled, so costs, losses, and interest must be reimbursed. Even though it has been declared negligent, it is still negligent in fulfilling the agreement or something that can only be done at a time that has exceeded the time of the agreement. Ingkar Janji or default is also known as negligence or negligence, namely the non-performance of an agreement because of the fault or negligence or breach of promise of the parties which carry it out.

Default is a word originating from Dutch (*wanprestatie*), meaning that the obligations specified in the agreement are not fulfilled. If the debtor or Buyer does not perform as agreed upon, he is said to have defaulted (Kavin Ludgerus Dimpudus, Christine S Tooy, Royke A Taroreh, 2021: 227). Ingkar janji, in the sense of not fulfilling the obligation, is divided into 3 (three) forms (Sedyo Prayogo, 2016: 283):

- a) The debtor does not fulfill the agreement at all
- b) The debtor is late in fulfilling the agreement

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c) The debtor is mistaken or inappropriate to fulfill the agreement

The concept of default is a domain in civil or private law rules. Article 1234 of the Civil Code contains the purpose of an obligation or agreement to be able to give something, do something or not do something. There is a difference between the concept of doing something and not doing something, which often causes confusion and requires further explanation because there are negative and positive sides. Doing something means giving away property rights or giving a sense of usefulness to an item. The meaning of not doing something is to leave something alone or to maintain something that looks like there is no agreement to be made (Yahman, 2016, p. 52).

Default is part of a person's negligence, so when the debtor is mistaken in the performance, and the mistake is based on good faith, a statement of negligence or a summons is required. However, if it is carried out based on bad faith, it does not require a negligence statement. Warnings against negligent statements or summonses are required for agreements that are not fulfilled based on the specified time because the debtor still has the will to fulfill the performance; it is just that he is late (Sedyo Prayogo, 2016, p. 284).

A contractual relationship always precedes the characteristics of default. Contracts or agreements are used as special instruments that regulate private legal relationships. If violated, interests in society or individuals will cause problems, such as conflicts of interest involving rights and obligations (Yahman, 2016: 51).

Default occurs due to an obligation or agreement made by related legal subjects. Agreement means an agreement when two people are willing to be bound by each other (Article 1314 of the Civil Code); even someone who agrees cannot enter into it for another person but only himself (Article 1315 of the Civil Code). The agreement or consent of the parties can be executed in any form, whether it already has a specific name in the regulations or there is no specific name, as long as it does not conflict with the regulated regulations (Article 1319 of the Civil Code). One of the agreements based on achievement is a reciprocal agreement (Bambang P. Purwoko, 2021: 65). The subjects in the agreement have their obligations, the purpose of which is to benefit each other by fulfilling their needs.

The default can occur if the agreement occurs and is proven by the terms of the validity of the agreement, which should be regulated in Article 1320 of the Civil Code, namely the agreement of the parties who bind themselves to each other, are capable of entering into an agreement, there are things that are agreed together. The cause of the agreement is not something that is prohibited by law. The validity of the agreement is determined by fulfilling all the elements in Article 1320 of the Civil Code, namely subjective and objective requirements (Bambang P. Purwoko, 2021: 69). The condition of the agreement means that the parties have deliberated and are consistent with the principal matters in the agreement. Agreements made without physical or psychological coercion, oversight, and fraud (Bambang P. Purwoko, 2021: 69). Capacity to perform legal actions means that they are adults because they have reached the age of 21 years or have married (Salim HS, 2019: 33). The agreed object is also one of the conditions called achievement. Achievement in the form of the rights of one subject is the obligation of the other subject (Salim HS, 2021, p. 34). The *halal causa* requirement means that the object of the agreement between the two parties does not conflict with the law, decency, and public order (Article 1337 of the Civil Code).

Agreements have supporting principles, namely (I Ketut Oka Setiawan, 2020: 45-49):

- a) The principle of freedom of contract is a principle that allows others to enter into a promise, be free to make or not make a physical agreement, and determine the contents of the contract in all kinds of provisions. It can all be done if it is separate from the rules. The free will expressed by the parties is a reflection of their rights.
- b) The principle of consensual is a principle that means that there is a willingness arising from the parties to participate in agreeing. The existing willingness can give birth to a sense of trust that the agreement will later be fulfilled. The principle of consensual focuses on a promise that arises at the time of a consensus between the two parties, such as the subject matter that is the object of the agreement.
- c) The principle of personality and the rules regarding this principle of personality are found in Article 1315 to Article 1340 of the Civil Code. Article 1315 generally explains that no one can take or demand a promise on his behalf other than for his benefit. Article 1340 of the Civil Code also explains that the contract is only valid for those who sign according to the agreement. The purpose of this principle policy is to limit the agreement's validity only to the parties to the agreement.
- d) The principle of balance, this principle means that people must be balanced in fulfilling the agreement. The Buyer has the right to make demands for achievements that the seller must fulfill because it must be balanced; the Buyer also has the burden to carry out his promises according to a sense of good faith.
- e) The principle of legal certainty (*pacta sunt servata*) The agreement is a form of law because the agreement's contents will be legal. This legal certainty arises because, in the agreement, there is a binding force, namely, the agreement used as a rule applies to the parties to the agreement, which is in line with Article 1338 Paragraph (1) of the Civil Code.

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f) This moral principle is in line with Article 1339 of the Civil Code because the agreement is not limited to exact and natural things written down but must also be followed by custom and morals.

g) The principle of propriety, Article 1339 of the Civil Code, interprets the license agreement not only about what is specified but all kinds of necessary things, depending on the nature of the license. This principle means that a sense of fairness determines the relationship between the parties to the agreement.

Agreements can end per Article 1381 of the Civil Code for the following reasons (Ahmadi Miru, 2018, pp. 87-110).

a) Payment

The definition of payment here is valued in money and intends to fulfill various forms of achievement.

b) Cash payment offer followed by storage or custody

The meaning is that if a creditor refuses payment from the debtor, the debtor can offer to pay in cash regarding the debt, and if the creditor still refuses, the goods or money from the debtor are deposited in Court.

c) Debt renewal

Debt renewal, referred to here, replaces an old object or subject of an agreement with a new object or subject of the agreement.

d) Debt set-off or compensation

When both parties owe each other, the agreement is finalized, and they are released from their debts because the debts accumulate, and after calculation, it turns out that the value of each debt is the same.

e) Debt commingling

The position of the creditor and debtor are linked in one case; the loan may be suspended or terminated by law. Therefore, debt consolidation eliminates debt.

f) Debt exemption

If the borrower can return the receipt, it is evidence of being free of debt. If the loan is not repaid for a long time, the loan must be repaid so that the borrower is not considered harmful.

g) Destruction of the goods owed

The agreement or contract becomes void if the item used as the object is lost and can no longer be traded or the object has perished but not the negligence of the loan recipient.

h) Cancellation or annulment

This contract can be terminated because it is null and void, usually terminated if the agreement does not comply with the rules of Article 1320 of the Civil Code. Agreements that are unclear or unauthorized are void.

i) Applicability of void condition

Cancellation occurs when the parties have reached an agreement with a void condition. The agreement is terminated as soon as the condition is fulfilled.

j) Expiration

An agreement can expire or be nullified if the agreement made by the parties has passed the time based on Article 1967, which relates to the passage of time.

k) Unilateral termination of contract or agreement

The agreement is an absolute thing and must be carried out by the parties based on acts of good faith because one of the parties often does not comply with the agreement's contents even though it has been given consecutive warnings. This unilateral termination of the agreement is carried out by force by the person who feels disadvantaged because one of the parties has neglected its obligations.

l) Court Decision

An agreement or contract can be terminated based on a court decision because the party who feels he has suffered a loss in the agreement files a claim with the Court. The termination of the contract due to this court decision is based on the Judge's decision following the evidence presented and heard. So that if it is void, the contract or agreement is no longer valid for the parties and has a permanent legal force (Salim HS, 2021, p. 178).

The agreement that both parties have implemented must be carried out properly because if it is not implemented, it will cause conflicts that have legal consequences. (Dijan Widijowati, 2018: 190) Argues that every person or legal subject experiences legal consequences. Those who violate are entitled to be responsible. The responsibility that must be carried out by a legal subject who violates the rights of other legal subjects is carried out in front of the Court because it is prosecuted by the party whose rights are violated. Legal consequences can arise for all parties, namely humans and legal entities when they have committed legal acts or events. Legal events caused by specific events give rise to the rights and obligations of each person or

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legal subject. The legal effect that arises is an effect that has been regulated by legal force so that it is considered that the perpetrator of the action wants it (Junaidi, Muhammad Farid Wajdi, et al., 2023: 77-78).

The form of this legal effect is 3 (three), namely the first form in the form of birth, change, or disappearance of legal conditions, meaning that this form provides legal consequences that are not fixed or changeable. When a person has reached the age of majority?, namely, 21 years old, then. As a result, he becomes capable of law from previously incapable. The second form of birth, change, or disappearance of a legal relationship means that the legal subject between two or more has a relationship that gives rise to the rights and obligations of the parties facing each other. We can find this in buying and selling. Then the third form is the birth of a sanction if an act of resistance to the law is carried out (Junaidi, Muhammad Farid Wajdi, et al., 2023: 78).

Based on legal consequences, buying, and selling are included in the birth, change, or disappearance of a legal relationship which must be carried out by the parties when they are bound in a legal relationship between the two parties.

### 2. Arrangements and understanding of buying and selling using the Purchase Order (PO) system

According to the Legal Dictionary, buying and selling means a relationship between buying and selling; this agreement is because there is an attachment between the seller and the Buyer, the seller is the one who delivers the goods and delivers them, and the Buyer pays the price of the goods purchased, this is closely related to the relationship of the contents of Articles 1457, 1458 and 1459 of the Civil Code (Sudarsono, 2009, p. 196). The regulation of buying and selling can be found in Article 1457 of the Civil Code, buying and selling as an agreement because one party binds himself to deliver goods, and the other party must pay the price as promised (Article 1457 of the Civil Code).

Sale and purchase is an agreement involving one party having property rights to goods and the transfer of the goods to the Buyer. Buying and selling is an activity of legal relations included in the agreement because the agreement bond can provide security of interest to prospective sellers and buyers. Selling and buying is an agreement that gives rise to rights and obligations but is not limited to what is agreed upon but must be based on what is required, namely decency, custom, and public order (Subekti and Veronika Nugraheni Sri Lestari, 2020: 78-79).

Buying and selling in development can be done with a Purchase Order (PO) system called a purchase order in Indonesian. PO system is an agreement that uses a letter of request to the seller to provide a stock of goods or services, along with detailed information, including the price to be paid, delivery method, and payment date. A PO is a letter approved by the signing of both parties to the agreement.

Willem Siahaya explained that PO is a form of the agreement made between the first party and the second party, namely the user and the seller of goods, to procure the required goods. Another opinion from a practitioner in export and import, Komang Oko Berata, said that a PO is a form of proof of order or a letter of order which must be made and agreed upon together before receiving goods. Then according to Supriyanto and also Masruchah, defines that PO is a purchase order in which a written request is submitted to the provider of goods according to the agreed delivery time at the time and must be included in the order (Leon A Abdillah, 2021: 61).

PO system sale and purchase is not explicitly regulated in the codification or Civil Code but exists in the community, so it is referred to as an unnamed agreement or nominal.

## B. The Purpose of Law (Jeremy Bentham) in Economic Activity

According to Bentham, the theory of legal purpose or utility is given the meaning of being able to provide the most significant value for the sense of happiness and pleasure for everyone. According to him, the purpose of the law is happiness and enormous benefit for each subject in large numbers. This theory explains that society should be ideal by increasing happiness and minimizing sadness. A society that endeavors to overcome unhappiness may even have little that can be felt by the community (Teguh Prasetyo, Kadarwati Budihardjo, Purwadi, 2019: 10-11).

By popular definition, economics can be interpreted as "All human behavior or a group of people to meet relatively unlimited needs with limited means of satisfying needs." Economic activities in society are essentially a series of extraordinary legal acts due to the many types, qualities, varieties, and variations carried out by several people, namely between individuals, between companies, between groups, and between countries from various places (Muchamad Taufiq, 2019, p. 8).

The presence of law in economic activities to achieve the objectives of law and the economy. The aspect of law in economic activities has several functions related to legal objectives, according to Jeremy Bentham, namely (Muchamad Taufiq, 2019, pp. 8-9):

1. Law as an external factor that has benefits
2. The law can be used as a benefit to safeguard economic activities and goals to be achieved.
3. Law is used to supervise the deviation of economic behavior for other interests.

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4. The law can be used to maintain a balance of interests in society.

The purpose of law in economic activity is to fulfill needs for the benefit of many people and welfare or happiness. The purpose of the law can be achieved when the community's needs are met, especially with the buying and selling process between buyers and sellers, to provide full benefits for both parties.

### C. Legal Status of Purchase Order (PO) as a Sale and Purchase System

A purchase Order (PO) will be reached when the agreement has been finalized regarding the goods provided and the price to be paid by the recipient. The agreement is made following the will of both parties and is based on clear objectives regarding matters mutually agreed upon by the party. The terms or contents of the agreement must not conflict with order, decency, and the rule of law. Both parties have the right to demand that the other party perform their promises (Joni Emirzon, Muhamad Said Is, 2021: 24). Jeremy Bentham's theory suggests that the law has a goal to make the subject of law happy, not to make the subject of law feel unhappy, especially if the existing rules are then not appropriately applied based on the expected legal objectives. Based on the contents of Article 1458 of the Civil Code, an agreement has occurred after the conformity of a will between the two parties (Article 1458 of the Civil Code), which, if it is related to buying and selling, relates to the Buyer and Seller. The PO agreed by the parties is an agreement because it is based on Article 1458 of the Civil Code.

Based on the analysis of the theory of agreement, the PO falls under one of the theories of agreement, namely, the "acceptance theory." The acceptance theory means that the agreement has been born when the offer to provide goods made by the Buyer reaches the seller, then the seller has agreed to the type and quantity of goods to be provided in the form of an answer letter. Nowadays, a letter of reply to the PO can be sent quickly by e-mail. An agreement occurs when the Buyer has received the PO reply letter; it does not matter if it has been read.

A sale and purchase agreement is when the two legal subjects reach a consensus. The facts found that buying and selling using this PO is carried out with the delivery (levering) of goods/objects (Salim, 2021, p. 49), where the delivery is carried out using the sale and purchase of the panjar system. After an agreement emerges, the Buyer pays with the panjar system first. Thus the goods are included in the Buyer's responsibility.

Purchase Order (PO) is a method that has been used by various parties to sell and buy even throughout the world because PO is no longer something foreign to people. The legal status of POs can be viewed from the legal requirements of an agreement or contract according to American law of contract, namely (Salim, 2021, pp. 35-40):

- a) Offer and acceptance: This is an offer made to any person and is a promise in which the content of the promise is to be able to do something and not do something specifically on the next day or time. Meanwhile, acceptance is the agreement of the party who accepts the offer from the bidder. This acceptance must be absolute and unconditional.
- b) Meeting of minds (conformity of will): An agreement is valid when the parties have a corresponding will. Conformity is the will of the same parties regarding the object of an agreement.
- c) Consideration: Abdul Kadir Muhammad believes that the only meaning of consideration is the performance promised or agreed upon by both parties, so it must be carried out because it is required. It has a form such as going to do or already doing.
- d) Competent parties and legal subject matter: The meaning here is the subject's ability to agree. The person who executes an agreement must be an adult. Then there must be a legal subject matter which is related to a subject matter that is said to be valid. This is the same as the *halal causa* in the Civil Code.

The sale and purchase of the PO system carried out by the parties is an agreement binding. Suppose it meets the requirements of a valid agreement according to the law, such as the requirements of an offer and receipt between the parties. In that case, there is an agreement or similarity of will and consideration, namely the existence of achievement that must be fulfilled and the ability and validity of the parties who make promises to each other.

In addition to the legal requirements of an agreement according to American Contract Law, the legal status of a PO letter can also be based on the legal requirements of an agreement based on Article 1320 of the Civil Code. The sale and purchase agreement in the PO system is an agreement if it fulfills the subjective and objective requirements of Article 1320 of the Civil Code, the contents of which are the existence of an agreement, capacity/maturity according to age, there is a matter to be agreed upon, and the object being agreed upon is *halal*. This PO is included in the agreement with perfect language that is written and not written down. It is done in writing so that it becomes valid legal information provided in the event of a dispute between the parties, namely the seller and the Buyer, in the future (Salim, 2021: 33). POs that use perfect language and are carried out orally and even in writing mean that before issuing the letter, the parties first negotiate orally, either by telephone or directly by meeting face to face, then agree on the results of the negotiations regarding the goods to be provided and the price to be paid. After reaching an oral agreement, it is made in writing using the Buyer making a PO letter containing the type of

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goods, price, and number, then sending the letter to the seller; after the seller receives and agrees, the agreement has occurred. In addition to the agreement, the parties must meet the Capacity requirements. The parties to the contract must be able to carry out legal acts. In connection with the problem that the author found, the PO made by the parties as individuals but representing the company means that the parties are adults and have even exceeded 21 years. Hence, they can take legal action (Salim, 2021, pp. 33-34). The following requirement is the object of the agreement, namely the achievement, which has to do with the rights and obligations between the two parties (Salim, 2021: 34). The goods that are the object of the problem that the author finds the Buyer (PT. Multi Communication System) buys the seller (PT. Elektra Baru Sukses) electric schneider goods so that the seller must provide the goods and the Buyer must pay according to the mutually agreed price. The existence of a *halal causa* is the last valid condition of the agreement. Because the object promised by the subjects in the sale and purchase of the PO system is an object that has no conflict with Article 1337 of the Civil Code, namely law, decency, and public order, the sale and purchase of the PO system is valid and justified.

Based on these conditions, if the PO letter has fulfilled all the valid requirements of the agreement, then the PO agreement is valid and can be proven if later there is a conflict between the two subjects because one party is disadvantaged. The purpose of the law is achieved and can make the parties happy if this condition is fulfilled following the provisions of Article 1320 of the Civil Code. Legal objectives can be achieved by buying and selling using a PO letter because its legal status can be reviewed from the principle of agreement. PO is a form of agreement because it can be categorized as an agreement in nominated; the reason is that PO is an actual agreement and is not explicitly mentioned in the Civil Code, so PO is based on the principle of freedom of contract in the Civil Code. This principle of freedom of contract explains that the parties involved in buying and selling the PO system are free to make and accept certain obligations, as long as the agreed achievements of them are possible not to be denied and do not contradict the rules (Dhoni Yusra, Nelly Nilam Sari, 2012: 29). This principle gives complete freedom to the parties both in terms of making agreements in black and white or not making agreements (Joni Emirzon, Muhamad Said Is, 2021: 25-26). The PO is not in the form of an agreement letter but in the form of a PO letter made by the Buyer based on the agreement of the parties, so the PO is a valid agreement, and there is a binding force on the parties because it is based on this principle.

PO also adheres to the principle of consensual because there is an agreement with those who bind themselves. POs that are made following agreed outcomes and not by force (*dwang*), deception (*bedrog/fraud*), and also abuse of circumstances, then the agreement is considered valid because it does not contain legal defects (Joni Emirzon, Muhamad Said Is, 2021: 27-28). This principle underlies that PO is an agreement because this principle also supports Article 1320 of the Civil Code, which means that there is an agreement from those involved in the agreement, especially sellers and buyers, and also mutual participation to carry out promises between them (Taryana Soenandar et al., 2016, p. 83).

The legal objective of Article 1458 of the Civil Code can be achieved by the principle of *pasta sunt servanda*, which explains the legal status of the PO. The PO letter made by the subjects is an agreement. It applies as a law to them (Joni Emirzon, Muhamad Said Is, 2021: 32) as in the PO problem found by the author; the seller himself agrees that the goods ordered by the customer will be delivered according to the time determined together. In addition, because the Buyer has also agreed, he must be responsible for the appropriate payment on the PO letter.

### D. Analysis of the Breach of Promise Legal Consequences on the Sale and Purchase Order System (PO)

The Buyer has the right to receive the goods that have been determined from the seller; not only that, but the Buyer also has obligations that must be fulfilled, namely following Article 1513 of the Civil Code, namely paying the price according to what is mutually agreed upon. The agreement gives birth to the parties' obligations, called achievements. This PO letter is an agreement if it has fulfilled Article 1320 of the Civil Code and its legal status is transparent so that the parties in it are obliged to carry out what is their obligation. Based on the facts, often in this PO system sale and purchase agreement, the parties are negligent in carrying out their achievements and even want to unilaterally cancel the PO agreement, in this case, primarily if the seller fulfills his obligations by negotiating the delivery of goods, where the Buyer obliges the seller to deliver them. However, otherwise, he does not pay the agreed price at the time and place he ordered.

The Buyer's action was then unjustified because it resulted in a massive loss to the seller. The Buyer's order has been ordered to the factory by the seller and is already available, and even though the seller has given a summons several times, the Buyer's obligations still need to be fulfilled. The sale and purchase in the PO system is an agreement with legal consequences if it does not carry out as promised. Negligent buyers who violate the agreement or do not carry out their responsibilities are said to have made a default or have broken their promise (I Ketut Oka Setiawan, 2020: 19).

Based on the rules contained in Article 1243, it explains and can be interpreted that debtors who have been declared negligent in fulfilling their obligations are obliged to be able to compensate for costs, losses, and interest. The debtor is still



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declared negligent even if he gives something but has passed the specified time. In connection with this understanding, the Buyer can compensate the seller for costs, calculable losses, and interest due to the Buyer's negligence in completing his obligations.

The legal consequences for the Buyer because of the default committed in the PO system sale and purchase agreement are legal consequences such as the birth of sanctions which sanctions are received by the Buyer because of the demands of the seller (the injured party). The demands that the seller can choose are (Salim, 2021: 99):

- a) The seller may demand the fulfillment of the performance only from the Buyer in default;
- b) The seller may demand the fulfillment of the performance along with a claim for compensation from the Buyer (Interpretation of Article 1267 of the Civil Code);
- c) The seller may demand the fulfillment of the performance and request compensation based on the loss due to a delay in payment (Interpretation of HR November 01, 1918);
- d) The seller may sue for rescission of the contract;
- e) The seller may demand the rescission of the contract accompanied by a request for damages. Such damages may include the payment of a fine.

The legal consequences that the Buyer must accept because of the default that has been committed in the sale and purchase agreement using PO, namely, the Buyer pays all compensation suffered by the seller as the party entitled to receive these achievements (interpretation of Article 1234 of the Civil Code), then the Buyer must accept the termination of the agreement which is also accompanied by paying compensation to the seller. If the termination of this agreement is based on the agreement of the parties, it can be canceled. However, if there is no agreement, there must be a cancellation according to a court decision (interpretation according to Article 1266 of the Civil Code). Furthermore, the Buyer must accept all risks starting from the default, and the Buyer is required to pay court costs when the matter is litigated before the Court or before a judge (interpretation of Article 181 paragraph (1) HIR) (Kavin Ludgerus Dimpudus, Christine S Tooy, Royke A Taroreh, 2021: 227).

According to the interpretation of Subekti's opinion, the cancellation of the agreement is not due to the negligence or negligence of the debtor or, in this case, the Buyer, but because the decision to cancel the agreement is based on the Judge. This provides a legal basis for the existence of legal relations and agreements. The Judge's decision can be confirmed by positive opinions and experts where this decision is legally based on evidence read (I Ketut Oka Setiawan, 2020: 21). In connection with the cancellation of the agreement, the Judge has a power called discretionary, meaning that the Judge has the authority to assess the default that the Buyer has committed. If, in the opinion of the Judge, the performance that should be carried out or carried out is too small, the Judge has the right to refuse to cancel the agreement, even though the compensation requested from the seller has been granted.

The legal consequences are not only the provisions of the cancellation of the agreement; there are also provisions regarding compensation by the party who has committed an act of breach of promise. In connection with the compensation that the seller can claim as the injured party, the elements can be mentioned following Article 1248 of the Civil Code, namely as (I Ketut Oka Setiawan, 2020: 21-22):

- a) Costs (kosten), meaning there are costs related to all actual expenses that have been incurred. If it is related to the case in the sale and purchase of goods using this PO, where the seller must provide the goods according to the Buyer's request, and, of course, the goods must be ordered in advance to the factory so that the payment uses the seller's costs or money first and uses the Buyer's money because it will later be paid or replaced by the Buyer when the goods are available.
- b) Loss (shades), what is meant here is the loss suffered from damage to the seller's goods as a result of negligence by the Buyer;
- c) They are related to profit, namely loss, which can be a loss of an expected profit. Selling and buying using the PO system are when the seller has provided the goods. However, the Buyer needs to carry out his obligations by taking the goods and paying the fees, so the seller does not get a profit but gets a massive loss due to the Buyer neglecting to carry out his performance or not paying for the goods. It is not achieved if it is associated with the theory of Legal Objectives because there is no happiness. Moreover, suppose the goods are already available and need to be paid. In that case, they cannot be resold because the goods sold are Schneider electric goods, which have few opportunities to be sold elsewhere. After all, they depend on the needs of the other party.

Compensation in the act of breach of promise which can then be prosecuted against, is based on Article 1243 of the Civil Code, which the contents of this article provide regulations in principle relating to compensation to sufferers with non-fulfillment of an agreed obligation. The compensation, as mentioned, is in the form of costs, losses, and interest (Sri Redjeki Slamet, 2013: 114). This compensation is an understanding in Book III of the Civil Code. According to the Civil Code, compensation is detailed in

## Legal Consequences of Breach of Promise for Buyers in the Sale and Purchase of Purchase Order (PO) System

elements consisting of 2, namely damages, which means that the things mentioned are costs and losses. While the second element is interest is a meaning that can be equated with interest, where this interest is interpreted as a profit (Sri Redjeki Slamet, 2013: 114-115).

Damages are only some of what can be requested for reimbursement. The law provides provisions regarding what must be included in this compensation. The contents of Article 1247 of the Civil Code explain that the perpetrator of a breach of promise has an obligation that is required to reimburse costs, losses, and interest that are available or should be expected when the agreement is issued, excluded if the agreement was born due to deception committed by himself. According to the explanation of this provision, it can be given that the meaning of compensation is limited and only relates to foreseeable losses directly resulting from a breach of promise. This foreseeable condition which is a direct result of the default, is very closely related to one another. Based on the theory of cause and effect, an event is considered as another effect when the second event directly causes the first event, and based on the experience of legal subjects, it may happen again (Sri Redjeki Slamet, 2013: 115).

If based on jurisprudence, the conditions included in the foreseeability include the amount of loss. Losses whose amount exceeds the limits of foreseeability may not be obliged to the defaulting party to make payments, except when he has been deceitful but is still within limits outlined in the provisions of Article 1248 of the Civil Code (Sri Redjeki Slamet, 2013: 115).

The requirements that must be followed in compensation for damages due to breach of promise/default are following the contents contained in the law, considering that every loss suffered by the person whose promise is broken is not all required to be compensated by the subject, which made a breach of promise (the debtor), which in this case is the Buyer. The requirements to fulfill compensation according to the law are (Sri Redjeki Slamet, 2013: 118-119):

a) There is an act of breach of promise by the subject of the breach, and it needs to be proven only at the passage of time restrictions as specified in the initial agreement.

b) There is a loss, which can be classified as:

1) The loss that was foreseeable or reasonably foreseeable at the time the agreement was reached.

The contents of Article 1247 of the Civil Code mean that the debtor/debtor party is only obliged to compensate for foreseeable losses when the agreement is made unless there is an intentional act. This intentional act is interpreted if the debtor intentionally and even consciously violates his obligations, regardless of whether or not there is an intention from the debtor to do something that causes loss. The word foreseeable must have an objective meaning; according to the subject of law, the incurrance of losses must later be foreseeable for a normal human being.

2) The loss is a direct result of the breach of promise/ default. It means there must be a causal relationship between the loss and the breach of promise; if there is no relationship, the loss suffered is not required to be compensated. Specifically, there are two theories relating to the causal relationship, which are described as follows:

The condition sine qua non theory (from Van Buri) explains that the effect caused by an event cannot be excluded from the effect. The event in question is an integral and inseparable entity called the cause of the doctrine. Conditions cannot be eliminated because they are valuable, and assume that every condition issued is a cause. Furthermore, the theory of adequate vewoorzaking (by Von Kries) believes that the condition is a cause if it can cause an effect according to its general nature. This theory is also explained by the opinion of the Hoge Raad, which provides a formulation following its decision on November 18, 1927, namely that an act is a cause if, according to experience, it can be expected or expected that a related effect will occur.

Compensation relating to cash that must be delivered but was not delivered, then compensation can be requested such as interest which according to the law is referred to as moratoria interest, which is 6% a year whose calculation starts from the date of filing a lawsuit to the Court, if in this case, it started on September 11, 2019. The parties can also determine the amount for compensation following Article 1249 of the Civil Code, but if the parties do not agree, the value of the costs must be calculated based on the actual losses experienced by the seller with a note that compensation cannot be charged to the Buyer beyond the estimated limit (Muhammad Syaifuddin, 2012: 349).

Buyers who have broken promises or have neglected to carry out their obligations must bear all the legal consequences obtained due to the default that has been committed. The legal consequences arising from these actions include demands included in the default, where the seller gives the demands as the sufferer, both demands for fulfilling performance, cancellation of the agreement, and compensation.

The theory of legal objectives can be fulfilled if there are provisions for compensation for the seller following the losses he experienced. When the loss is compensated, it automatically creates happiness for the seller.

## Legal Consequences of Breach of Promise for Buyers in the Sale and Purchase of Purchase Order (PO) System

### IV. CONCLUSION

1. The legal status of a purchase order (PO) as a sale and purchase system is that it has a binding bond between the parties because the PO letter agreed upon by both parties is a valid agreement because it has fulfilled the elements of the legal requirements of an agreement according to Article 1320 of the Civil Code, the principle of freedom of contract, the principle of consensual and *pacta sunt servanda*, so that the legal objectives of Jeremy Bentham are achieved because they have binding force and can protect both parties to reduce unhappiness.
2. The legal consequences of a case of breach of promise for the Buyer in the sale and purchase of a purchase order (PO) system are to pay compensation suffered directly by the seller, the agreement cannot be canceled unilaterally, but there must be a judge's decision. The canceled agreement is also accompanied by compensation based on the amount of loss that arises or according to the Judge's decision in Court.

### ACKNOWLEDGMENT

Thank you to Universitas Atma Jaya Yogyakarta Indonesia.

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## Biomechanical Analysis of *Mawashi-Geri* Kick Motion on Kenshi Shorinji Kempo Jambi Province



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**ABSTRACT:** In randori Shorinji Kempo, various variations of attacks are used to get a high number of scores. Mawashi-Geri is the kick most often used by kenshi. Mawashi-Geri has the privilege of a certain randori due to her strong capacity to obtain higher match score scores. The purpose of this study is to collect accurate information and data about the examination or analysis of the speed, precision, biomechanics of Mawashi-Geri kicks, angles of body segments, as well as how to perform them. The subjects of this study were four athletes with different amounts of body weight. This research was conducted using descriptive research type analysis with qualitative and quantitative methods. A qualitative approach was used to describe the biomechanical phase of the Mawashi-Geri kick. While the quantitative approach using the Kinovea software program is related to measuring the angle of body parts, the speed of motion of the Mawashi-Geri kick biomechanics, measurements and calculations are presented systematically to facilitate understanding and drawing conclusions. From the results of research and discussion as well as expert judgment decisions, it can be concluded the speed, accuracy and angle of body segments, it can be said that the kick of Mawashi-Geri kenshi Shorinji Kempo Jambi province with the fastest biomechanical average speed is kenshi B Kicking biomechanics with the first speed is 24m/s, for Mawashi-Geri's slowest biomechanical kick is kenshi A's biomechanics from the second kick, at a speed of 13.5m/s. As for the speed of hitting the target momentary kick with one kick, the biomechanical speed of the first kick kenshi C is 76.2m/s, and the slowest is the biomechanical kenshi A fourth kick, which has a speed of 45.8 m/s. The results of angular analysis of each segment's body of the subject during the biomechanical process of the Mawashi-Geri kick showed the angle of the leg opening between and 128,2 and 142,8 degrees. And the angle of inclination of the body is between 146.0 and 158.9 degrees. The angle of rotation of the pedestal leg is between 119.4 and 178.9 degrees, and the biomechanics of the hip and foot to kick in between 96.3 and 135.6 degrees. Based on the results of the analysis, it can be concluded that excessive angles have little effect on the biomechanics of Mawashi-Geri's kick slowdown. However, with the angle of inclination of the body and the rotation of the footrest, as well as the biomechanical rotation of the hips and feet when kicking, the angle of the leg opening will be more optimal.

**KEYWORDS:** Analysis, Biomechanics, Kick Motion, Mawashi-Geri, Shorinji Kempo.

### I. INTRODUCTION

Shorinji Kempo is a martial art whose philosophy comes from ancient Buddhism and its basic techniques come from ancient Chinese martial arts. Shorinji Kempo was founded in Japan by Doshin So in 1947 as a self-development and training system based on Shaolin Kungfu (So & Yuuki, 2017). The practice method is based on the philosophies of "spirit and body are inseparable" and "self-development and spiritual rejuvenation". In addition, Shorinji Kempo is known to have three benefits, namely "self-defense, mental training and improving health". Shorinji Kempo has many skills in his set of defense techniques, but demonstrations known as "embu," are the most common. It is usually done with bare hands and barefoot, by two people called "kumi-embu." At the time of embu, first one person attacks while the other defends, then the roles are reversed, and the technique is immediately repeated, as well as for the fighting technique in Shorinji Kempo commonly known as randori (Sumida S et al., 2012).

There are two classes of techniques in Shorinji Kempo activities, called "Goho" and "Juho". The Goho technique is generally considered a 'hard' technique in Shorinji Kempo. Goho's technique involves using body movements to avoid attacks, blocking to

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deflect punches or kicks, and retaliating to prevent further attacks. Instead of resisting with force, *blok* deflects blows, or serves as a cover to protect the body.

In contrast, *Juho*'s technique uses movement to unbalance the attacker, and takes advantage of the momentum of the attack, and is considered a 'soft' technique in Shorinji Kempo. The *Juho* technique is applied when someone is caught or pinned by an attacker, and consists of throws, locks and pins, as well as elusive movements. *Goho* and *Juho*'s judgment considers attack, as well as defensive movement, and counterattack. Attitudes and attitudes are also very important and taken into consideration during assessment (Wali, C. N, 2021).

Shorinji Kempo is categorized as a *dentoukyougi* martial art, and is a traditional Japanese martial art with a long history and contains elements of Japanese culture. (Samukawa, 2015: 2). Like Shorinji Kempo, Judo and other martial arts skills, Shorinji Kempo regularly competes in championships at the regional and national levels. Shorinji Kempo has many advantages, not only teaching physical aspects such as fighting skills, but also emphasizing discipline, mentality, traits, and other characteristics (Moore, B., et al 2019). In addition, Shorinji Kempo also contains deep philosophical aspects, so that by studying kempo, the mind, soul and fitness will grow and develop as a whole (Moore, B.W, 2023). Furthermore (de Moraes Fernandes, F., et al 2017) point out that martial arts are currently practiced by boys and girls, children and adults, and several societies with different goals. The term Shorinji Kempo is interpreted as follows, *Sho* means small, *Rin* means forest, *Ji* means temple, *Ken* means fist, *Po* means way or way of life (Shorinji Kempo Kyu-IV PB-PERKEMI Textbook).

On February 2, 1966, Shorinji kempo founded by Utin Syahraz, an Indonesian youth who studied and trained in Japan, followed by Indra Kartasasmita and Ginanjar Kartasasmita was officially established in Indonesia with the roles of the four people, and finally the Shorinji Organization was formed Kempo Indonesia is known as PERKEMI (Indonesian Kempo Martial Arts Brotherhood). Perkemi is also a full member of the World Federation of Shorinji Kempo Organizations or WSKO (World Shorinji Kempo Organization), and is centered in Tadotsu temple, Japan (Wali, C.N. 2023).

Kicking (*Geri*) is one of Shorinji Kempo's basic techniques and plays an important role in Kempo matches. The *Mawashi geri* kick is a forward kick technique in which individuals kick with a knee jerk from the side to the front using pads on the front leg or instep. *Mawashi-Geri* is a kick technique that is difficult to learn because in addition to having strength, *kenshi* must also have flexibility so that *Mawashi-Geri*'s kicks can be done correctly and perfectly (Damrah, et al 2019). The advantage of this kick is its technique that can score ten points in competitions or matches. 10 points is the highest score in a kempo game, but many *kenshi* apply *Mawashi-Geri*'s kick imperfectly when using this kick, to his own detriment (Paruntu, G.S., et al 2020).

Mechanics is a branch of science within the field of physics that studies the motion and change of the shape of materials, followed by mechanical disturbances called forces (Dorsckhy, E., et al., 2023), and then (Kimmel, M., & Rogler, C.R., 2019) considers biomechanics as the study of internal and external forces acting on the human body and the consequences of the forces generated.

In sports, mechanics is nothing but the basic rules that determine the mechanics and physics of an athlete's movements while performing certain motor skills (Ramstead, M.J., 2023). Therefore, a good understanding of biomechanics, particularly shorinji kempo martial arts movements, is helpful for designing training or teaching program content aimed at developing and improving specific skills (Yan, S., et al 2022). This understanding is also needed later when analyzing sports performance, which can provide positive information to correct the errors displayed (Hakim, H., et al 2023).

Seeing any incorrect movement requires movement analysis, will be visible and must be corrected immediately to obtain correct movement coordination (Matuszewska & Syczewska, 2023). Because the right movement produces more value in its execution. Based on the discussion above, in terms of kinematics and biomechanics, the angles of the body segments associated with the *Mawashi-Geri* kick are hip abduction, external rotation of the hip, and lateral flexion of the trunk or spine (Uppal, A. K., & Goswami, J., 2020). The ideal range of hip abduction is 30 degrees, the Range of Motion of the external rotation of the hip is 90 degrees, and the Range of Motion of lateral flexion of the body is 75-85 degrees (Arora, K., & Wolbring, G., 2022). However, the range of motion of each joint can be expanded through flexibility exercises (Bushman, B. A., 2016).

## II. METHOD

In accordance with the questions that have been described, this research was conducted using a type of descriptive analysis research with qualitative and quantitative methods. That is to analyze and present facts systematically according to the symptoms of the problem so that it is easier to understand and draw conclusions (Kumari, S.K.V., et al., 2023). To describe the study, researchers need to conduct the following research design:

The study subjects were *kenshi* shorinji kempo in Jambi Province, with men's weights of -55 kg, -60 kg, -75 kg and -84 kg. All four subjects in the study performed best in *Mawashi-Geri*'s kicks. Here are some of the criteria of the subject of study:

1. Good *Mawashi-Geri* kick.

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2. Behaves well and is full of vigor.
3. Have full awareness and fighting spirit (Bushido).
4. Correct distance and perform movements precisely.

The results of the four research sources will be given to three expert judgment judges, theorist and technical expert Shorinji Kempo, referee expert and coaching expert to provide decision making and input to identify the wrong or insufficient position for Kenshi to play on Mawashi-Geri's kick (Furley, P., et al., 2023).

In this study, the Kinovea software program was used. To obtain the data analyzed with the Kinovea program, supporting tools are needed to collect the data (Nor Adnan, N.M., et al., 2018). The tools needed include a training mat / field, kick target (punching bag), handy camera, digital camera, tripod, meter, paper, whistle, and stationery.

### III. RESULT AND DISCUSSION

#### A. Result

In this chapter, the results of the data study are obtained using 2 portable cameras that can be rotated and converted into several video clips or pictures. Footage of the subject's Mawashi-Geri kicks was then fed into a computer. After that, measurements of the angle of the body segment, speed, angle of leg span, angle of inclination of the body, angle of rotation of the kick leg, and angle of rotation of the support leg are measured. Video clips can be analyzed using the Performance Analysis tool in the Kinovea software program (Puig-Diví, A., et al., 2019).

**Table 1. Data Analysis of Mawashi-Geri Kenshi A Kick ( Weight -55 Kg)**

No	Variable	Mawashi-Geri kick				
		I	II	III	IV	V
1	Average Time (s)	0,052	0,056	0,052	0,048	0,052
2	Distance(m)	0,78	0,76	0,76	0,74	0,81
3	Average Speed (m/s)	15	13,5	14,6	15,4	15,6
4	Target Instantaneous Time(s)	0,008	0,012	0,012	0,012	0,010
5	Target Instantaneous Wear Distance (m)	0,51	0,57	0,60	0,55	0,51
6	Target instantaneous imposition speed (m/s)	63,7	47,5	50	45,8	51
7	(foot opening/span angle)	142,8 <sup>0</sup>	147,5 <sup>0</sup>	130,8 <sup>0</sup>	151,2 <sup>0</sup>	151,2 <sup>0</sup>
8	(angle of inclination of the body)	148,7 <sup>0</sup>	147,3 <sup>0</sup>	139,7 <sup>0</sup>	134,5 <sup>0</sup>	140,0 <sup>0</sup>
9	(rotational angle of fulcrum foot)	142,8 <sup>0</sup>	147,5 <sup>0</sup>	130,8 <sup>0</sup>	151,2 <sup>0</sup>	151,2 <sup>0</sup>
10	(angle of rotation of the hip and kick leg)	96,3 <sup>0</sup>	97,8 <sup>0</sup>	89,6 <sup>0</sup>	80,8 <sup>0</sup>	83,6 <sup>0</sup>
11	Target Accuracy	Do not	Do not	Do not	Do not	Do not

**Table 2. Data Analysis of Mawashi-Geri Kenshi B Kick (Weight -60 Kg)**

No	Variable	Mawashi-Geri kick				
		I	II	III	IV	V
1	Time(s)	0,040	0,056	0,052	0,052	0,052
2	Distance(m)	0,96	0,96	0,90	0,88	0,90
3	Average Speed (m/s)	24	17,1	17,3	16,9	17,3
4	Target Instantaneous Imposition Time (s)	0,008	0,012	0,008	0,012	0,012
5	Target Instantaneous Wear Distance (m)	0,54	0,58	0,54	0,58	0,61
6	Target instantaneous imposition speed (m/s)	67,5	48,3	67,5	48,3	50,8
7	$\alpha$ 1 (foot opening/span angle)	134,9 <sup>0</sup>	138,2 <sup>0</sup>	136,0 <sup>0</sup>	138,7 <sup>0</sup>	139,9 <sup>0</sup>
8	(angle of inclination of the body)	146,0 <sup>0</sup>	148,0 <sup>0</sup>	134,5 <sup>0</sup>	146,6 <sup>0</sup>	146,8 <sup>0</sup>
9	(angle of rotation of the pedestal foot)	119,4 <sup>0</sup>	112,0 <sup>0</sup>	120,7 <sup>0</sup>	112,3 <sup>0</sup>	112,5 <sup>0</sup>
10	(angle of rotation of the hip and kick leg)	115,3 <sup>0</sup>	120,8 <sup>0</sup>	115,0 <sup>0</sup>	116,3 <sup>0</sup>	129,3 <sup>0</sup>
11	Target Accuracy	True	True	True	True	True

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**Table 3. Data Analysis of Mawashi-Geri Kenshi C Kick (Weight -75 Kg)**

No	Variable	Mawashi-Geri kick				
		I	II	III	IV	V
1	Time(s)	0,052	0,056	0,048	0,048	0,048
2	Distance(m)	0,86	0,88	0,90	0,89	0,89
3	Average Speed (m/s)	16,5	15,7	18,7	18,5	18,5
4	Target Instantaneous Imposition Time (s)	0,008	0,008	0,008	0,008	0,012
5	Target Instantaneous Wear Distance (m)	0,61	0,53	0,50	0,55	0,65
6	Target instantaneous imposition speed (m/s)	76,2	66,2	62,5	68,7	54,1
7	$\alpha$ 1 (foot opening/span angle)	126,2 <sup>0</sup>	126,7 <sup>0</sup>	132,9 <sup>0</sup>	136,2 <sup>0</sup>	132,2 <sup>0</sup>
8	(angle of inclination of the body)	153,4 <sup>0</sup>	149,8 <sup>0</sup>	158,9 <sup>0</sup>	156,5 <sup>0</sup>	154,9 <sup>0</sup>
9	(angle of rotation of the pedestal foot)	167,1 <sup>0</sup>	167,1 <sup>0</sup>	172,7 <sup>0</sup>	171,3 <sup>0</sup>	176,6 <sup>0</sup>
10	(angle of rotation of the hip and kick leg)	127,8 <sup>0</sup>	123,1 <sup>0</sup>	135,6 <sup>0</sup>	130,9 <sup>0</sup>	140,7 <sup>0</sup>
11	Target Accuracy	Do not	Do not	True	True	True

**Table 4. Data Analysis of Mawashi-Geri Kenshi D Kick (Weight -84 kg)**

No	Variable	Mawashi-Geri kick				
		I	II	III	IV	V
1	Time(s)	0,056	0,068	0,048	0,060	0,060
2	Distance(m)	0,91	1,03	0,95	0,95	0,96
3	Average Speed (m/s)	16,2	15,1	19,7	15,8	16
4	Target Instantaneous Imposition Time (s)	0,008	0,012	0,008	0,008	0,012
5	Target Instantaneous Wear Distance (m)	0,56	0,66	0,54	0,59	0,61
6	Target instantaneous imposition speed (m/s)	70	55	67,5	73,7	50,8
7	$\alpha$ 1 (foot opening/span angle)	123,1 <sup>0</sup>	133,1 <sup>0</sup>	124,9 <sup>0</sup>	128,2 <sup>0</sup>	129,0 <sup>0</sup>
8	(angle of inclination of the body)	150,2 <sup>0</sup>	146,4 <sup>0</sup>	149,5 <sup>0</sup>	153,8 <sup>0</sup>	147,8 <sup>0</sup>
9	(angle of rotation of the pedestal foot)	170,9 <sup>0</sup>	176,3 <sup>0</sup>	178,9 <sup>0</sup>	178,9 <sup>0</sup>	180,0 <sup>0</sup>
10	(angle of rotation of the hip and kick leg)	109,0 <sup>0</sup>	123,4 <sup>0</sup>	120,9 <sup>0</sup>	122,1 <sup>0</sup>	97,5 <sup>0</sup>
11	Target Accuracy	Do not	True	Do not	True	True

**Table 5. Best Data Analysis Results of Mawashi-Geri Kick Research Subjects**

No	Variable	Mawashi-Geri kick			
		Kenshi A	Kenshi B	Kenshi C	Kenshi D
1	Time(s)	0,052	0,040	0,048	0,060
2	Distance(m)	0,78	0,96	0,90	0,95
3	Average Speed (m/s)	15	24	18,7	15,8
4	Target Instantaneous Imposition Time (s)	0,008	0,008	0,008	0,008

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5	Target Instantaneous Wear Distance (m)	0,51	0,54	0,50	0,59
6	Target instantaneous imposition speed (m/s)	63,7	67,5	62,5	73,7
7	$\alpha$ 1 (foot opening/span angle)	142,8 <sup>0</sup>	134,9 <sup>0</sup>	132,9 <sup>0</sup>	128,2 <sup>0</sup>
8	(angle of inclination of the body)	148,7 <sup>0</sup>	146,0 <sup>0</sup>	158,9 <sup>0</sup>	153,8 <sup>0</sup>
9	(angle of rotation of the pedestal foot)	142,8 <sup>0</sup>	119,4 <sup>0</sup>	172,7 <sup>0</sup>	178,9 <sup>0</sup>
10	(angle of rotation of the hip and kick leg)	96,3 <sup>0</sup>	115,3 <sup>0</sup>	135,6 <sup>0</sup>	122,1 <sup>0</sup>
11	Target Accuracy	Do not	True	True	True

### IV. DISCUSSION

Shorinji Kempo is a hard (Goho) and soft (Joho) martial arts sport (Szabó, B., 2013) because it uses physical techniques such as boxing, kicks, blocking and strong moves as well as locks and punches (Pettinen, 2014) Therefore, mastering the basic techniques of shorinji kempo plays an important role in developing the correct skills. The Shorinji Kempo branch of martial arts has two match numbers, Embu and Randori. Embu is a match number used to demonstrate the ability to perform movements that are interrelated in pairs or teams, combining Shorinji Kempo's basic techniques, namely waza, kumi embu, tsuki, uke, geri and uchi and ken into a series of logical movements to form a complete unity (Sanglise, M., & Saputra, H., 2018). While Randori is a form of fighting through attack and defense, trained in kihon and Shadow in real situations. The success of Shorinji Kempo training is influenced by the cognitive and motor abilities of an athlete, but most are influenced by emotional control (Andrade, A., et al., 2020). Shorinji Kempo exercises also had little effect on cognitive improvement and a greater improvement in the socio-emotional dimension. A kenshi must have good technical skills to become an athlete, in addition to good strength, speed, agility, and stamina (Akhmad et al., 2021). Shorinji Kempo training increases speed, agility and strength. In addition, shorinjin kempo exercises were found to increase cardiovascular endurance levels (Rahman, N. A., & Siswantoyo, S., 2018).

Kicking (Geri) is one of the basic techniques of shorinji kempo and occupies an important position in kempo. In Shorinji Kempo the kick attack depends on each target and is known by several techniques, namely geri age (direct forward kick to the head), mawashi geri (side kick aimed at the ribs), kinteki geri (pubic kick) and ushiro geri (back kick using kakato) (Kuswahyudi, A.A., 2017). Given the importance of kicks in the game of Shorinji Kempo, Kenshi Dojo Kelapa Kebun Jambi Province trained mawasi geri kick technique.

The Mawasi geri kick is a forward right or left rib/right kick technique that relies on a forward knee jerk to the sole of the foot and instep to the front rib. This kicking technique will be assisted by explosive hip and leg muscles (bursting in motion). To get points in the game, the mawasi geri kick technique must be strong, fast and accurate (Kuswahyudi, A.A., 2017).

The results of the analysis from table 1 can be seen as. Kenshi A made the first Mawashi-Geri kick with a time of 0.052 seconds, the distance of the kick with a target of 0.78m, resulting in a speed of 15m/s. Before the target with a time of 0.008 seconds, the distance to the target was 0.51m, resulting in a speed of 63.7m/s. Furthermore, for the leg opening angle of 145.9 degrees, the body tilt angle of 148.7 degrees, and the rotation angle of the fulcrum leg 142.8 degrees and the angle of rotation of the hip and kick leg 96.3 degrees and not on target on the predetermined target. Kenshi A made Mawashi-Geri's fourth kick with a time of 0.048 seconds, the target kick distance was 0.74 m, resulting in a speed of 15.4m/s. Furthermore, at the speed just before the target with a time of 0.012 seconds, the distance to the target was 0.55 m, resulting in speed 45.8m/sec. Furthermore, for the leg opening angle of 152.5 degrees, the body inclination angle of 134.5 degrees, and the leg rotation angle of 151.2 degrees and the hip rotation angle and foot kick of 80.8 degrees and not on target have been determined. After that kenshi A made Mawashi-Geri's fifth kick with a time of 0.052 seconds, the target kick distance was 0.81m, resulting in a speed of 15.6m/s. Furthermore, at the speed just before the target reached with a time of 0.010 seconds, the distance to the target was 0.51m, resulting in a speed of 51m/s. legs 149.5 degrees, body inclination angle 140.0 degrees, and foot rotation angle 151.2 degrees and hip rotation angle and foot kick 83.6 degrees and not on target.

The results of the analysis and table 2 can be explained, namely kenshi B made the first Mawashi-Geri kick with a time of 0.040 seconds, the distance of the kick with the target was 0.96m, resulting in a speed of 24m/s. Furthermore, at the speed just



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before the target with a time of 0.008 seconds, the distance to the target is 0.54m, resulting in a speed of 67.5m/s. Next for the leg opening angle is 134.9 degrees, the body tilt angle is 146.0 degrees, and the angle of rotation of the fulcrum leg is 119.4 degrees and the angle of rotation of the hip and kick leg is 115.3 degrees and on target. And then Kenshi B made the third Mawashi-Geri kick with a time of 0.052 seconds, the target kick distance was 0.90m, resulting in a speed of 17.3m/s. Furthermore, at the speed just before the target reached with a time of 0.008 seconds, the distance with the target was 0.54m, resulting in a speed of 67.5m/s. Next for the leg opening angle is 136.0 degrees, the body inclination angle is 134.5 degrees, and the angle Leg rotation 120.7 degrees and hip rotation angle and foot kick 115.0 degrees and on target. After that Kenshi B made Mawashi-Geri's fifth kick with a time of 0.052 seconds, the target kick distance was 0.90 m, resulting in a speed of 17.3m/s. Furthermore, at the speed just before the target reached with a time of 0.012 seconds, the distance to the target was 0.61m, resulting in a speed of 50.8m/s. Next for the leg opening angle is 139.9 degrees, the body inclination angle is 146.8 degrees, and The angle of rotation of the legs is 112.5 degrees and the angle of rotation of the hips and kicks of the legs is 129.3 degrees and on target predetermined.

When viewed from the figure of the analysis results and table 3 can be explained, Kenshi C made the third Mawashi-Geri kick with a time of 0.048 seconds, the distance of the kick with a target of 0.90m, resulting in a speed of 18.7m/s. Furthermore, at the speed just before the target with a time of 0.008s, the distance to the target is 0.50m, resulting in a speed of 62.5m/s. Next for the leg opening angle of 132.9 degrees, The angle of inclination of the body is 158.9 degrees, and the angle of rotation of the fulcrum legs is 172.7 degrees and the angle of rotation of the hips and kick legs is 135.6 degrees and on target. And then Kenshi C made the fourth Mawashi-Geri kick with a time of 0.480 seconds, the target kick distance was 0.89m, resulting in a speed of 18.5m/s. Furthermore, at the speed just before the target reached with a time of 0.008s, the distance to the target was 0.55m, resulting in a speed of 68.7m/s. Next for the foot opening angle is 136.2 degrees, the body inclination angle is 156.5 degrees, and the footwear rotation angle is 171.3 degrees As well as a hip rotation angle and a foot kick of 130.9 degrees and on target has been determined. After that Kenshi C made Mawashi-Geri's fifth kick with a time of 0.480 seconds, the target kick distance was 0.89 m, resulting in a speed of 18.5m/s. Furthermore, at the speed just before the target reached with a time of 0.012 seconds, the distance to the target was 0.65 m, resulting in speed 54.1 m/s. Next to Then the angle of the leg opening is 132.2 degrees, the angle of inclination of the body is 154.9 degrees, and the angle of rotation of the fulcrum foot is 176.6 degrees and the angle of rotation of the hip of the kick leg is 140.7 degrees and on target.

When viewed from the analysis results and table 4 can be explained, Kenshi D made the second Mawashi-Geri kick with a time of 0.068 seconds, the distance of the kick with the target was 1.03m, resulting in a speed of 15.1m/s. Furthermore, at the speed just before the target with a time of 0.012s, the distance to the target is 0.66m, resulting in a speed of 55m/s. Next for the leg opening angle is 133.1 degrees, The body tilt angle is 146.4 degrees, and the pedestal leg rotation angle is 176.3 degrees and the hip and kick leg rotation angle is 123.4 degrees and on target. And then Kenshi D made the fourth Mawashi-Geri kick with a time of 0.600 seconds, the target kick distance was 0.95m, resulting in a speed of 15.8m/s. Furthermore, at the speed just before the target reached with a time of 0.008s, the distance to the target was 0.59m, resulting in a speed of 73.7m/s. Next for the leg opening angle is 128.2 degrees, the body inclination angle is 153.8 degrees, and the base leg rotation angle is 178.9 degrees and the hip rotation angle and foot kick are 122.1 degrees and right on target has been determined. After that Kenshi D made Mawashi-Geri's fifth kick with a time of 0.600 seconds, the target kick distance was 0.96m, resulting in a speed of 16m/s. Furthermore, at the speed just before the target with a time of 0.012 seconds, the distance to the target was 0.61m, resulting in a speed of 50.8m/sec. Furthermore, for the leg opening angle of 129.0 degrees, the body inclination angle is 147.8 degrees, and the leg rotation angle is 180.0 degrees and the hip rotation angle and foot kick are 97.5 degrees and on target have been determined.

In accordance with the data from the analysis above, it can be seen that the fastest kick of Mawashi-Geri Kenshi Shorinji Kempo Jambi Province with an average speed is on Kenshi B, the first kick with a speed of 24m/s, and for Mawashi-Geri's kick, the slowest is on Kenshi A, the second kick with a speed of 13.5m/s. As for the speed of the momentary kick, the target is Kenshi C, The first kick was at a speed of 76.2m/s, and the slowest for instantaneous kick speed hit by the target was Kenshi A fourth kick at a speed of 45.8m/s. The results of the analysis of the angle of the body segment of the study subjects at the time of Mawashi-Geri's kick were the angle of the leg opening between 128.2 degrees to 142.8 degrees. And at an angle of inclination of the body between 146.0 degrees to 158.9 0. For the angle of rotation of the base leg between 119.4 degrees to 178.9 degrees, and at the angle of rotation of the hip and kick leg between 96.3 degrees to 135.6 degrees.

## V. CONCLUSIONS

Mawashi-Geri kick movement in Shorinji Kempo sport with a limb movement profile or body segment angle, it can be said that the fastest Mawashi-Geri Kenshi Shorinji Kempo kick in Jambi Province is on Kenshi B the first kick with a speed of 24m/s, while

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for Mawashi-Geri's slowest kick is on Kenshi A's second kick with a speed of 13.5m/s. As for the instantaneous kick speed, the target is Kenshi C, the first kick at a speed of 76.2m/s, and the slowest is Kenshi A, the fourth kick at a speed of 45.8m/s.

The results of the analysis of the angle of the body segment of the study subjects at the time of Mawashi-Geri's kick were the angle of the leg opening between 128.2 degrees to 142.8 degrees. And at an angle of inclination of the body between 146.0 degrees to 158.9 degrees. For the angle of rotation of the legs between 119.4 degrees to 178.9 degrees, and at the angle of rotation of the hips and legs of kicks between 96.3 degrees to 135.6 degrees.

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## De-Westernisation of Islamic Education Perspective Syed Muhammad Naquib Al-Attas



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**ABSTRACT:** This study aims to determine Syed Muhammad Naquib Al-Attas' understanding of the de-westernization of Islamic education. This type of research is *library research* through data collection techniques by tracing sources from articles, books or other sources relevant to the topic of discussion. After the data is collected, the researcher analyzes it descriptively and concludes. The study results show that many problems are still encountered, especially in the scope of Islamic education, which include unclear curriculum, low quality of educators, high cost of education, and other problems. In addition, learning activities still tend to be based on memorization rather than understanding a meaning. This is where the meaning of the de-westernization of education emerges. From the problems, teaching and learning activities are only limited to theory without practice, making it easier for students to be contaminated with Western culture. According to Syed Muhammad Naquib Al-Attas, in his thoughts regarding the concept of *ta'dib*, he explained the need for instilling morals from educators to students. Thus, learning is based on how to practice theory so that each student can understand behavior between good and bad.

**KEYWORDS:** Syed Muhammad Naquib Al-Attas, De-westernization, Islamic Education

### I. INTRODUCTION

Knowledge transfer activity is one of the activities in the world of education. Thus, educators strive to provide teaching by what has been determined so as not to cause problems and deviations from teaching and learning activities in educational institutions. Especially in the concept of Islamic education, Islamic education has a view from society as religious education. Islamic education, which incidentally, when viewed in terms of subjects, transfers knowledge a lot through Islamic subjects, so at first, it was seen as education that is more capable of leading students to make morals better.

Islamic education, especially in Indonesia, has brought a sharp spotlight on society, which, based on some educational observers, has the notion that there is an educational crisis in terms of politics, economics, and a moral crisis. There is a crisis in education due to mental assistance, which can be said to be a failure. It can also be said that Islamic education has failed to educate the community. One of the failures in Islamic education occurs because learning activities are more inclined to something formal and rote, so education is not focused on something meaningful (Antoni, 2017).

Burlian Somad in Sahidin et al. explains the problems that occur in education today, which can be seen from several aspects. First is the impact of the unclear goals of education. Bearing in mind that the purpose of education and teaching in law is to make human beings moral and capable and have a responsible and democratic spirit in every citizen. But in fact, what happened can be said to have not been able to create the human intent in formulating educational goals. On the other hand, problems occur, namely moral decline, lack of democracy in life, and frequent social conflicts. Second, the curriculum is incompatible, where the curriculum implemented by educational institutions still contains various subjects. This makes students only get the theory without any skills being honed in them. Thus, students can be said to have poor skills and do not have the power to carry out an activity in society (Sahidin et al., 2022).

Third, the lack of competent and appropriate teaching staff impacts the quality of education because it is handled by educators who are not experts in their fields. Another impact that arises if an educational institution has teaching staff who are less competent and appropriate is the emergence of a waste of costs, the decline in the quality of education, and being able to make individuals with low quality. Fourth is the occurrence of a measurement that can be measured incorrectly, for example, in the process of measuring learning outcomes. This often happens considering that the measurement of learning outcomes in question is the evaluation of learning for giving grades on certain exams, which are often not objective or not by the number holder. Fifth, the foundation of education is experiencing blur. This happens because many educational problems still have not

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been answered. An example is related to the issue of whether it is right to make yourself a high-value person through coaching in just a few years. Not only are these questions or problems but many other problems have not been resolved (Sahidin et al., 2022).

In the context of the problems of Islamic education that arise, according to As'aril Muhajir in Wahid, it is stated that the main problem is demoralization and a shift in a ratio (value) which can also be said to be a crisis of values, a conceptual crisis of the paradigm of a good life, an attitude of idealism which is also experiencing a crisis, as well as credibility that experienced gaps. In connection with the value crisis, for example, in the current era, many phenomena cause a decline in morale in the field of education, which is a wrong phenomenon. Still, it is turned upside down to become right, yet it is implemented. For example, I was scribbling on a school uniform on graduation day. This is a wrong phenomenon that can cause educational morale to drop, but many still carry out such activities (Wahid, 2018). It was explained that the act of scribbling on clothes at graduation was a concern due to the erosion of the noble values of a nation (Nurhayati, 2019).

Then related to the conceptual crisis of the paradigm of a good life, it means a life of down-to-earth luxury (Wahid, 2018). In the current era, in their teens, they have followed this concept of life because, according to the researcher's point of view, it can be said that someone in this era does not want to be left behind by the so-called "trend" of life. In fact, in Islamic teachings, it is forbidden if humans have a luxurious lifestyle that can damage themselves and society because they are too busy with desires and waste noble morals (Zaimsyah & Herianingrum, 2019). The next problem is the crisis of credibility which is experiencing gaps, in which in the current era it seems that there are many phenomena of the absence of authority for parents, clerics, lecturers, or religious leaders from one's point of view. Someone in the current era seems to deify certain artists with credibility that can be said to be less good (Wahid, 2018). In fact, there is nothing wrong with idolizing someone, but there must be a selection process which will set an example for themselves and can lead to a better path.

Then it relates to the crisis of idealism, in which nowadays, many students have more interest in something materialistic than knowledge (Wahid, 2018). Everything depends on money. Thus, many people are willing to help others if there is reciprocity by giving money to themselves. One of these things can degrade the morale of every human being, especially at present. Thus some problems arise in education, especially Islamic education; there is a need for breakthroughs, one of which is the de-westernization of Islamic education. The de-westernization of Islamic education is an attempt to make students not only provide teaching regarding the mastery and memorization of certain materials but also inculcate moral principles, practices, and knowledge of comprehensive religious teachings (Antoni, 2017).

Islamic education, in essence in this case, is an effort to foster a person who does not only depend on law or knowledge but is also based on behavior, intellectually related to religion, the practice of religious teachings that are carried out and have a pure nature, and the absence of anything that pollutes with a western culture which can indeed be said to have no Islamic elements (Antoni, 2017) so that the emergence of de-westernization is sought to make students have morals by Islamic teachings.

The term de-westernization, according to Syed Al-Attas, is an attempt to separate and clean knowledge from something secular in nature, which can change both the value and the form of the conceptual view of knowledge itself, or in other words, de-westernization is an attempt to purify Islamic teachings from Western influences (Afida, 2016). The paradigm related to Islamic education, according to Al-Attas, revealed that it is an effort to instill something in a person referring to methods and systems of cultivation that have stages so that they can carry out guidance towards recognition or recognition of the Creator (Hakim & Fahyuni, 2020).

According to Al-Attas, Islamic education has a goal, namely, to return nature to human beings, not as an effort to develop knowledge under the pretext of someone who is a citizen by making a person's characteristics a measurement adapted to life. The concept of Islamic education, according to Al-Attas, is an effort to make someone better and to make humans global by the function of human creation by carrying out two missions, namely as a servant of Allah and caliph on earth (Ghoni, 2017).

Educational efforts on the thought of Al-Attas's education are the development of values focused on religious values used as moral sources in a special sense as Islamic morals or morals. Thus, the development efforts carried out must aim to humanize humans with an emphasis on harmonious relationships between humans and their environment. Humans, when viewed from the Islamic context, have a central nature in their teachings, so there is a need to develop values so that there is no loss of values which has implications for chaotic life (Yasin, 2017).

Based on Syed Al-Attas's efforts, he emphasized his desire to change the term "*tarbiyah*" to "*ta'dib*," which is a reconstruction towards the educational goals he wants. In line with the perspective of Azyumardi Azra in Sri Syafa'ati & Hidayatul Muamanah, the teaching carried out in the current era only tends to be cognitive in nature, while matters relating to attitudes and character can be said to be neglected. Thus, a solution is needed by formulating the meaning of education with the meaning "*ta'dib*" which is the suggestion of Al'Attas (Syafa'ati & Muamanah, 2020).

Based on Syed Al-Attas's perspective, Islamic education is an imitation of secular education. The impression is that educational institutions only "belong to Muslims" and should be educational institutions that can teach pure Islamic values. This problem can

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be seen in the emergence of Muslim intellectual activities, which refer to adopting the Islamic education system from a Western orientation so that an educational institution experiences acculturation in its application activities. Thus efforts should be made to adapt the Western system to the traditional Islamic system where there is truth without discarding true Islamic values (Antoni, 2017).

Based on the description of the background that has been explained, it can be concluded that de-westernization is an attempt to provide teaching to students by not only focusing on the knowledge side but by instilling moral values in students so that they are not affected by secular culture. In this case, it is also in line with the thoughts of Syed Muhammad Naquib Al-Attas with his desire to reconstruct the meaning of education so that it can realize learning activities that do not only prioritize intellectuality but also in terms of the behavior and character of students. Thus the researcher is interested in research related to "De-westernization of Islamic Education from the Perspective of Syed Muhammad Naquib Al-Attas." The researcher uses the literature study research method, namely through source search activities from articles or books that are appropriate to the discussion, and the goal is to know Syed Muhammad Naquib Al-Attas.

## II. LITERATURE REVIEW

### 1. Biography and Educational Ideas of Syed Muhammad Naquib Al-Attas

On September 5, 1931, Syed Muhammad Naquib Al-Attas One of his goals was to expel the Japanese invaders by entering the military world and being able to carry his class name so that he was chosen as a participant with a higher position. However, the military world was commemorated by his release in 1957, which made him switch to his desire to master the field of knowledge (Ulum, 2020).

He was known as a diligent and intelligent person. He deepened his knowledge in metaphysics and theology, making him pursue a career to become an educator, in this case, a lecturer. The position of professor he achieved two years after occupying the chair as head of the department. Then in 1975, he was given the mandate as dean of the Malay literature and culture faculty. On October 4, 1991, he was appointed director and became head of International Thought and Sports Malaysia, Universitas Antar Bangsa Malaysia (Ulum, 2020). Syed Al-Attas often gets international awards. For example, he was mandated to lead a panel discussion on Islam in Southeast Asia, to be precise, in Paris in 1973. Then in 1975, he contributed to comparative philosophy and was installed as the emperor of Iranian philosophy. He was also mandated as the main consultant for the "World of Islam Festival" in 1976 (Muslem, 2019).

In 1977 he was elected chairman of the committee with a focus on Islamic education. He can also be said to have delivered 400 papers in European countries. When he was in a Malaysian educational institution, he knew that the academic life in Malaysia is dominated by Muslims who are transforming the social and economic fields, which can be said to be fast. And not just an understanding of fundamental issues but the discussion of how to solve the problems that are currently being faced (Muslem, 2019).

Syed Al-Attas's first concept of educational thought regarding his ideas is the existence of reason in humans so that they are seen as rational animals. In a reason with a harmonious meaning, "Al-'aql" is a binding meaning whose nature can be inferred from the object of knowledge through words. According to him also, man contains the soul and body in the form of spirit and body. Humans have experienced binding to the promise of confessing to Allah as their Lord. Every human being contains a potential that can be considered diverse while still referring to obedience to God. Focusing on obedience and surrender will make humans aware that a skill they have needs direction to worship the Creator (Novayani, 2017).

Second, his ideas are related to the definition or meaning of education, in which Al-Attas is more focused on education as "ta'dib" which originates from the word morals or educating. According to him, the basic problem of Islamic education in the present era is the loss of adab. It can also be said that science cannot be taught to students unless someone has adab to the right sense of knowledge in every field. The next idea relates to the purpose of education. Syed Al-Attas believes that the purpose of Islamic education is to provide the inculcation of a policy that an individual is part of society. According to him, good humans generally have wisdom, with his desire to make Islamic education capable of creating complete and intellectual human beings (Novayani, 2017).

Syed Al-Attas' view of society is inseparable from a good personality, as well as an effort to create a good society by forming a good personal personality by carrying out the tasks of education itself. It can be said that society is also a component of individual assemblies. It can also be explained that humans who have a balance in this matter horizontally or vertically in Islamic education race to the realm of attitude with no obligation to leave the realm of knowledge and skills. The fourth idea is related to the Islamic education system, which according to Syed Al-Attas, is required to contain elements of adab and knowledge. This is because education is required to shape each individual's character and behavior or noble character. Thus, every human being can carry out the development of knowledge so that they can transfer knowledge to each other to provide the benefit of one human being

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to another human being. In the education system, it is necessary to integrate knowledge by providing teaching through associating knowledge. The next notion relates to science, where epistemologically, knowledge is interpreted as a meaning that has reached the soul. Of course, the meaning, in this case, is a meaning that has true value and is based on Islamic views (Novayani, 2017).

### **2. The Meaning of De-westernization of Islamic Education**

De-westernization can be interpreted as removing everything that influences the West, or it can be said in another language, which means that it is an attempt to purify or cleanse Islam from Westernization both in terms of the concept of thinking or personality from Western culture. It can also be said that de-westernization is an attempt to eliminate secular elements and will transform the form and value of a paradigm that is conceptual in nature to know knowledge. This is also basically an attempt by Muslims without any special acceptance or Islamization movement. The activity of correcting Syed Al-Attas' thoughts on modern scientific disciplines and Islamic scholarship has undergone purification so that it enters secularism. The development of science, it can be said that in the current era in a modern environment containing the ideology of secularism, there must be a special formulation conceptually through the activity of Islamizing scientific knowledge in order not to let go of religious and divine values in each person at this time (Garwan, 2019).

There is an effort to de-westernize a science that promotes the learning process in the classroom to have a dichotomous nature in the sense that it is divided into two, namely science and religion. This is an inaccurate description because it will have implications for narrowing religious knowledge. It can also be said to make it seem as if the science of religion has properties that are not common. Based on the explanation of Syed Abdullah Naquib Al-Attas, a big problem that contemporary Muslims must overcome is the need for a strategic movement to carry out an activity to Islamize a science. Thus, a generation with Islamic skills or concepts is necessary. The implications for Islamic education that hit occur due to external and internal factors. External causes occur because there are three forms of an event whose events are interconnected: mistakes and errors in understanding science. Meanwhile, for the internal one, it appears in a knowledge that has a relationship, namely the existence of an inaccuracy in understanding knowledge, the absence of manners, and the emergence of a leader who can indeed be said to have no ethical responsibility in every field (Hasib, 2010).

It can also be said that with the effort to separate every element of the West in Islamic education, especially because of the knowledge that has been absorbed so that it reaches a character or personality, and in Western civilization, there has been an effort to adjust to the purpose of its existence. This impacts the abstract form, value, and activity of interpreting knowledge, which is similar to the Western point of view. According to Syed Al-Attas, several factors exist in the knowledge framework, especially in Western civilization, including, first, ratios' strong power in guiding life. Second, there is a belief in a dualistic paradigm regarding truth and reality. Third, there is a firm attitude towards life which is temporary and is the reflection of a natural paradigm that is secular. Fourth, there is openness to something humane in nature. Fifth, there is an attitude of acceptance of events that are considered something common (Rahman et al., 2021).

From the description of de-westernization that has been explained, it can be concluded that de-westernization is an attempt to eliminate something secular in nature, which can be said in the current era of secularism has become a habit in carrying out certain activities. Thus, the concept of de-westernization provides knowledge that educators not only transfer knowledge but also provide moral cultivation so that they can become a generation that is in accordance with Islamic teachings.

### **3. The Purpose and Form of the Islamic Education System**

Being able to explain in advance is related to the meaning of the goal, which is everything that has become a hope for achieving all the activities that have been done. The purpose of Islamic education, according to Syed Al-Attas, is to make humans become good workers. The need to put pressure on the value of educational goals to every human being makes a good human being. The value in question is the true human value as a citizen as well as something that has a spiritual aspect. Even though the educational goals emphasize humans as personal beings, it cannot be denied that humans are social creatures and have relationships with other humans. From this, it can be explained that humans have manners if they are aware of each individual and their relationship with the Creator (Aristyasari, 2013).

The discussion related to the goals of Islamic education can be interpreted as also discussing a value with an Islamic style. In his explanation, Syed Al-Attas formulates the goals of Islamic education, which emphasizes efforts to form a unique personality by not neglecting an ideal concept of society. From this, it can be said that the Islamic education system should be able to reflect on the knowledge and personality of the Messenger of Allah S.W.T. and each of his obligations by the potential of each Islamic education so that it can realize good human beings and create common human characteristics with Islam as their insight (Nanu, 2021).

Islamic education should also be pursued with clear sources and foundations in terms of interpretation, understanding, or explanation, which requires proven knowledge. Thus, it is revealed here that educators play an important role in assisting students

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in achieving educational goals, which is the hope of every human being. An educator must hold on to a belief that has been given to guide students to go in a direction that is by the educational goals to be achieved. It has been explained previously that the educational goals of Syed Al-Attas' perspective are formulated by the formation of a student's character so that educators are required to be an example of students by first having morals that are authoritative, obedient, and obedient to the Creator's recommendations (Nanu, 2021).

Based on Syed Al-Attas' explanation, education is required to create a reflection of a human being, not a country. The aspects that need to be considered in the Islamic education system include the curriculum. According to Syed Al-Attas, the curriculum in Islamic education must contain knowledge that is mandatory for each individual or must be studied collectively. A science that every individual must learn includes the context of how it is read, concluding interpreting the Qur'an, sunnah, the concept of divinity, and other things that are *fardhu'ain* in nature, as for the sciences that must be studied collectively, for example, humanities, Western culture, linguistics, or applied sciences. It can be said that the two sciences are not static, so it can also be said that these sciences will continue to experience development in accordance with the development of society. Second, it relates to the method used by Syed Al-Attas in learning, especially in Islamic contexts, namely the method of monotheism, stories, and metaphors. It can be said that this method is effective in conveying moral messages to students (Aristyasari, 2013).

### 4. The Concept of Islamic Education from the Perspective of Syed Muhammad Naquib Al-Attas

Education, in this case specifically in the Islamic context, is based on the Syed Al-Attas Paradigm associated with the term *ta'dib*, which according to him, is more appropriate if it is based on Islamic education. According to him, interpreting Islamic education as *ta'dib*, includes every scientific element, instruction, and good coaching efforts. Even so, the holy book that Muslims believe in does not use other meanings or terms that have similar words; the disclosure of adab itself and its branches is stated in the words of the Prophet, companions, and in a work of Muslim scholars. Relating to adab has a broad and deep perspective. This is because adab initially contains an invitation to a banquet which contains an idea related to social relations that are said to be good (Suyuthi, 2011).

Etymologically, "*ta'dib*" originates from "*addaba*" which means adab. *Ta'dib* refers to an intellectual education or social religiosity for both children and adults. *Ta'dib* is an important way to develop a complete human being and to inculcate human values to create a society that has civilization. According to Syed Al-Attas, *ta'dib* is a concept covering all scientific fields. It was also explained that *ta'dib* is an introduction to knowledge having a certain level or categorization (Hasibuan, 2016).

Thus, Syed Al-Attas refers more to the meaning of *ta'dib* than to *tarbiyah*, which, according to him, also explains that the difference lies in the meaning of the substance. For *tarbiyah* it is more inclined towards the aspect of compassion in this case, namely mercy, while *ta'dib*, apart from the side of mercy, also does not reject the knowledge side. The basis is that Syed Al-Attas acknowledged that the concept of *ta'dib* in the scope of Islamic education means that the coverage of every element of intellectual, teaching, and learning or upbringing is always of good value. In giving meaning to Islamic education in the concept of *ta'dib*, he considers that every self in every human being is a subject that can be said to be capable of being educated or given an awareness which is, of course, adapted to his position which is a cosmic creature (Effendi, 2017).

The existence of an emphasis on the meaning of adab aims to make it a knowledge that has been obtained and capable of being practiced properly and, of course, not to be misused by the owner of that knowledge. This is because science has properties that are not value-free but have value-free properties (Effendi, 2017). Based on Syed Al-Attas's explanation, it can also be explained that the inaccuracy of using the term *tarbiyah* in the concept of Islamic education, where there are several factors which include first, in the list of Arabic terms the meaning of *tarbiyah* is not found. Second, suppose the meaning of *tarbiyah* is a developmental term for Islamic education. In that case, it equates to the meanings of *raba'* and *rabba* in the Qur'an; naturally, there are no fundamental elements in terms of intellectual or policy which is an essential element in education (Rosyad & Wasehudin, 2022).

### III. METHOD

This type of research is a literature review, with the material object being the de-westernization of Islamic education. This makes researchers interested in conducting research, one of which is because in the scope of education, in particular, there has been a lot of intervention by a culture of secularism. On the other hand, rote-based learning is still being implemented rather than understanding the meaning of the material being studied. The formal object chosen by the researcher is the paradigm of Syed Muhammad Naquib Al-Attas. The reason the researcher uses the approach of Syed Muhammad Naquib Al-Attas, besides being known as a fighter in the field of education, is also that he is one of the experts whose thoughts support the de-westernization of Islamic education with the concept of *ta'dib*.



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Of course, before selecting a material object with the formal object, the researcher conducts a data search process based on the data source. The type of data source the researcher chose was secondary data because this research was a literature study. Thus, the data source comes from search results of books, articles, or other sources appropriate to the topic of discussion. Data was collected through analytical descriptive data collection techniques to analyze Syed Naquib Al-Attas's thoughts on the concept of the de-westernization of Islamic education. After the data is collected, the next step is to select the data. After the data is selected, the researcher then conducts a descriptive analysis of the data and ends with concluding.

The data collection method and data collection technique that the researcher chose was based on the stages or procedure of the *literature review research* that the researcher carried out, including selecting the topic to be reviewed, selecting articles according to the topic of discussion, conducting analysis, and ending with writing a review of the article.

### IV. RESEARCH RESULT

It can be said that there are several problems faced in the scope of education in general which include, firstly, related to the complexity of the applied curriculum, which often creates confusion for academics. In Indonesia, it can be said that it has undergone curriculum reform 10 to 11 times, and of course, it can cause confusion, especially for educators, students, or parents of students. Explanation from Nasution in Fitria Nur Auliah Kurniawati explained that the existence of curriculum reform could be interpreted by changing humans, in this case, namely education providers, educators, or anyone who is involved in education. From this, curriculum reform is also often interpreted as social change. As the researcher mentioned earlier, the curriculum used is also a curriculum that is too complex, so there is a burden, especially for students, to master too much material. This also makes students experience indecision in terms of exploring the potential within each student (Kurniawati, 2022).

Not long ago, Indonesia changed to a new curriculum that can be said to be independent. Of course, every applied curriculum has positive and negative sides. Related to the positive side of implementing the independent curriculum is the opportunity for students to explore themselves, which can be adapted to their talents and interests. Not only this, the implementation of the independent curriculum at this time, the learning activities carried out were able to minimize the saturation of each individual student because they felt comfortable participating in their learning activities (Tri, 2022).

The explanation from the Minister of Education and Culture outlined that one of the advantages of the independent curriculum is that it is simpler and more in-depth. This is because the learning activities focus on a material that is essential and is based on the development of student competencies. It was also explained that educators or students are more independent because there is no specialization in subject programs at the high school level, which makes students able to choose certain subject programs according to their talents and interests. In contrast, educators can provide learning tailored to each student's achievements and development (Pengelola Web Direktorat SMP, 2022). On the other hand, there is also a negative side, one of which lies in the limited human resources, in this case, educators who can be said to be adequate (Tri, 2022).

Second, related to the lack of equality in education. This can still make the education carried out problematic, especially in developing countries. The *third* problem is related to the placement of educators, where educators are placed with their discrepancies in the field of study or the area of expertise of each educator. Thus it can make educators unable to carry out their duties to the fullest. Problems with the placement of educators occur because it can be said that there is still a lack of educators in certain areas. This requires educators to carry out teaching and learning activities on other study focuses that are adapted to the needs of each student in the region (Kurniawati, 2022).

Fourth, related to the problem of low-quality educators. It can be explained that an educator transfers knowledge to students, and it can be said that the activities of an educator are not easy. But it can be said that many educators still believe that the job of being an educator is easy and to earn an income. It is expected that an educator can provide teaching to students accompanied by the awareness of their obligations in educating, conducting guidance, or training and evaluating each student. So, educators can make their students become someone through national education goals (Kurniawati, 2022).

The fifth problem is related to the cost of education, which can be quite expensive. It cannot be denied that many people experience difficulties, especially in terms of education, due to the high cost of education. In connection with the expensive cost of education, it is very burdensome for a certain community, especially in Indonesia, and especially for people from the middle class to the lower class. The high cost of education makes education uneven (Kurniawati, 2022). But in today's era, problems related to the high cost of education can be overcome by the existence or holding of various scholarships that one can participate in so that there is no word not to go to school as long as one has enthusiasm, determination, always to learn so that one can explore knowledge as wide as possible and can deliver students to the goals or ideals that have been previously expected.

Based on the problems that occur in education in general above, Islamic education itself also contains problems that are almost similar. The problems that occur are as follows—first, related to the quality of educators who are considered low. As previously explained, many people make the profession of an educator too easy. But in fact, the educators themselves still have low quality.

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Explanation from Kusnandar in M. Yunus Abu Bakar that, in reality, the quality of educators in Indonesia is still low, which is based on data from the 1999 Ministry of National Education Research and Development Agency, which shows that the results of the test for civil servant educators obtained scores which were categorized as very low. The data shows that being an educator is difficult (Bakar, 2015).

Second, the competence and professionalism of educators are low. The low quality of educators does not rule out the possibility of being caused by one of them, namely the lack of competence possessed by the educators. This is because competence is a person's ability, in this case, namely educators in attitude, ability to use skills or knowledge in carrying out tasks at school, community, or where educators interact (Hanif, 2014b). Educators are positioned as shakers of the New Order regime through parties within the political sphere of power. Apart from that, every policy in terms of education is carried out in a centralized manner, and the preparation of a learning plan is not carried out through the characteristics of students as well as their talents and interests, which can be said to be able to be developed. From this, the results of education only give birth to human resources, which can only face similarities. At the same time, differences in thinking are considered a controversy to increase unemployment because the implementation of education is not in accordance with the abilities of students and natural resources. Will be managed (Bakar, 2015).

Third, related to teacher salaries which are classified as low. With the reality that teachers' salaries are said to be low, it also causes a low level of etiquette and professionalism of an educator. Other facts show that someone involved in the field of education, or this case becomes an educator with a period of more than 39 years, gets a lower income than prospective BUMN employees with a term of office of no more than one year. From this, many educators take up their jobs by trading, teaching, tutoring, and other side jobs to divide their time (Bakar, 2015). According to the researchers, this makes educators not focus on their careers as educators, which results in low quality, especially at the level of professionalism of an educator. Regarding formal education, socialization can also be said to be passive consumptive in that critical follow-up questions do not carry out an acceptance of social order (Hanif, 2014a).

Based on the description of the problems that occur in the scope of education in general or within the scope of Islamic education, it can be explained again that being an educator is not an easy job, and there needs to be a long process. Support from each element of the education component needs continuity so that education runs by educational goals. It is implementing the curriculum, which currently has implemented the independent curriculum in certain educational institutions by giving students opportunities to explore. This is where the role of *ta'dib* needs to be implemented by educators in learning. This is because exploration in terms of skills or talents and interests is feared and will lead to negative things. Parents or educators also need to supervise, considering that this is an era of all technology and students are easily influenced by secular culture, so special action is needed through guidance for their students.

## V. DISCUSSION

The thought of the curriculum, according to Syed Al-Attas, was originally from his paradigm of humans being dualistic creatures. Knowledge can fulfill its needs properly with two aspects: the first is related to permanent and spiritual needs. It was second related to fulfilling emotional and material needs. Syed Al-Attas suggested the importance of implementing knowledge, namely in the category of knowledge that must be studied by each individual with knowledge that must be studied collectively. He also gave a division of material classified based on the two sciences. Every individual must learn the sciences of the Koran, sunnah, shari'a, theology, linguistics, and metaphysics. Meanwhile, the knowledge that must be studied collectively includes natural sciences, technology, humanity, Islamic history, and others (Fauzan, 2014).

According to him, the Islamic education curriculum should provide a picture of human beings and their nature that can be applied to every educational institution, especially at the tertiary level. That is because, according to Syed Al-Attas, at the tertiary level, a picture of systematization has the highest position and should take precedence. The curriculum should be able to be active in efforts to give birth to generations so that they become perfect human beings and can clarify the nature of God, humans, and the nature of knowledge. Basic values can give meaning to the process of serving the Creator. With an understanding of these basic values, it is of particular concern to every Islamic educational institution which will later create religious students who are highly intelligent (Sya'bani, 2017).

The following discussion relates to the quality of an educator, whereby an educator, according to Syed Al-Attas, provides teaching by transferring knowledge to their students. Thus, Syed Al-Attas calls educators the word "*mu'allim*". As an educator, Syed Al-Attas also explains what characteristics educators must have, especially those who teach Islamic subjects. These characteristics include the first being civilized. Being civilized is the main thing that must be practiced, according to Syed Al-Attas. This is because knowledge is unable to enter students without adab. The second is the level of knowledge they have. The existence of qualified knowledge in the soul of educators makes it capable of transferring knowledge (Marzukhoh & Shobahiya, 2017).

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The third character is patience. Based on Syed Al-Attas's thoughts, every educator must have patience with his students. Considering students' different abilities, patience is needed in developing the talents and interests of their students. The next characteristic has to do with mindfulness. According to Syed Al-Attas, the existence of a sense of attention from educators toward students can be shown through the emergence of a feeling of displeasure when they discover the mistakes made by their students and are indeed worthy of being responded to. It needs to be underlined in responding to students; educators must be able to exercise self-control like a father to his child (Marzukhoh & Shobahiya, 2017).

From the characteristics of an educator that has been described, it can be explained that related to the low quality of educators; educators are required to have the characteristics of being an educator based on the paradigm of Syed Muhammad Naquib Al-Attas, which has been described. A good generation is born from the quality of good educators. One way to know whether an educator is good is how an educator can create good learning in his class. In addition, a good educator has the awareness that he is a role model for all his students both in terms of appearance and what is no less important in terms of how educators behave in their daily lives, especially when in the area of educational institutions.

## VI. CONCLUSION

Syed Muhammad Naquib Al-Attas is widely known as an education expert and supports the de-westernization of Islamic education. His thinking about the meaning of education as a *ta'dib* concept has implications for his views on learning, which only emphasize rote activities rather than understanding meaning. This is what is meant by the de-westernization of education. The concept of *ta'dib* implies the learning activities of an educator where an educator is required to provide moral inculcation into each student to avoid secular culture. Apart from that, considering the problems that arise in the field of education include unclear curriculum, low-quality educators, high cost of education, and other problems. From this, educators need to improve the quality of educators through one of them teaching and learning activities that are not only limited to memorizing theory, but the application of the theory learned, which later the term *ta'dib* will be applied indirectly so that each student can have an understanding of good intermediate behavior with bad.

This paper is still limited to de-westernisation of Islamic education based on the literature on Syed Muhammad Naquib Al-Attas's educational thought. There needs to be further research in the form of field research on his educational thought which education providers understand and practice.

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## The Effect of the Company's Cultural Diversity on Restaurant Employees Performance



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**ABSTRACT:** This study looked at how managing organizational cultural diversity affects restaurant employees' performance. The study's main objective is to provide in-depth information about workplace cultural diversity. It seeks to create a precise set of rules to help organizations all over the world embrace cultural diversity. The respondents' demographic profile, including their gender, age, religion, ethnicity, race, and civil status, was successfully evaluated by the researchers using a questionnaire. This information is crucial for assessing the respondents' differences and how those differences affect their performance at work. The Likert Scale Method is used by the researchers to gauge the respondents' level of agreement with each statement provided in order to determine how cultural diversity affects productivity at work. The study explores how cultural diversity affects employees' performance and productivity, how employees view their organization's management strategy for managing cultural diversity, and how employees' experiences with cultural diversity in the workplace. According to the study, women make up the majority of respondents, who are between the ages of 20 and 30, among those who work in restaurants. The majority of respondents, according to the study, are Roman Catholic, Tagalog, and Asian. Regarding their civil status, all of the respondents are single. On the other hand, the majority of respondents considered their restaurant fosters teamwork by allowing diverse employees to share ideas and knowledge in order to find the best way to solve a problem, resulting in a better outcome on tasks. When it comes to respondents' level of agreement, the majority of respondents believe that organizational cultural diversity benefits restaurant employees' productivity. According to the study's findings, cultural diversity management training or education may enhance workers' performance at work. They will be better able to identify their own strengths and weaknesses if they have an understanding of cultural diversity. When a workplace is managed effectively, it promotes the growth of new ideas, knowledge, abilities, and working methods. The success and profitability of an organization are also influenced by cultural diversity, and productivity is increased in an environment free from cultural prejudice.

**KEYWORDS:** Employee engagement, employee performance, cultural diversity, organizational culture, restaurant employees

### INTRODUCTION

Workplace diversity describes the similarities and differences between employees that are based on factors such as age, culture, physical traits and limitations, race, religion, gender, and sexual orientation. Every person is unique. People vary not only in terms of their gender, ethnicity, language, psychological, and emotional traits, but also in terms of their perspectives and biases. As a result of a multicultural workplace, employees deal with a variety of issues at work. Each employee must be effective in their performance in the sector in order to meet organizational goals, even though some members of the diverse workforce may experience less cooperation from their coworkers. Employee termination is not a choice, though.

The study's overarching goal is to investigate the impact of organizational cultural diversity on restaurant workforce productivity. This study addressed the following questions: Are there organizational cultural differences among restaurant workers? Does organizational culture diversity affect restaurant teamwork? Does organizational cultural diversity have a significant impact on the productivity of the restaurant workforce?

The study sought to investigate the impact of managing organizational cultural diversity on restaurant workers' productivity. The primary goal of the study was to provide comprehensive information about cultural diversity in the workplace. It also established a clear guideline to assist various organizations around the world in embracing cultural diversity.

According to Patrick, H.A., et al. (2012), while most employees (diversity optimists) are confident in their ability to deal with diversity, only a small percentage of employees have grasped it, adjusted, and are enthusiastic about working and utilizing positive workplace diversity (diversity optimists). Despite the challenges of diversity, having a diverse workforce may result in

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good trade-offs due to obvious benefits. In today's global environment, a diverse workforce is appealing. Diversity in the workplace provides benefits such as the ability to adapt quickly, the availability of a broader range of alternative problem-solving strategies, in-service sourcing, and resource allocation.

Additional benefits include a broader range of services, a diverse set of skills and experiences, as well as different languages, cultures, and viewpoints. Because of the diverse range of knowledge and expertise, as well as different problem-solving methods, tasks are carried out more efficiently and effectively (Greenberg, 2015). Organizations with a diverse workforce can bring a broader range of perspectives to the problem-solving of human resource hiring, retention, and allocation. It is also claimed by McKinsey & Company (2018) that businesses with a diverse workforce outperform their peers financially by 35%. Another potential financial benefit of wide diversity is cost savings. (O'Donovan, 2017).

### METHODS

A quantitative approach was used in this study. According to Apuke (2017) study, quantitative research is the process of quantifying and evaluating variables in order to obtain results. It entails examining numerical data with statistical tools to answer questions such as who, how much, what, when, how many, and how. It also describes the procedures for gathering numerical data in order to fully comprehend a problem or event.

The researchers used the Descriptive Research Method, with the goal of providing comprehensive information about cultural diversity in workplaces to employees. Additionally, assisting businesses and organizations in developing cultural diversity plans that will allow them to evolve, innovate, solve problems, and become more efficient in the workplace. It entailed recording, data collection, data analysis, and data presentation. The survey method, also known as the Normative Survey, was used in descriptive research. As the primary data collection tool for this study, the researchers conducted and collected a survey. They distributed close-ended questionnaires to fifty (50) respondents via Google Forms via the Messenger application to make them more accessible. Before taking the survey, researchers explained the questionnaire to each respondent individually and clarified the contents. The researchers also discussed the ethical considerations such as anonymity and confidentiality. Random sampling was used to select respondents. The survey questionnaire is divided into two sections. The first section contains the data of the respondents. The second part is set of questions; the researchers used the Likert scale, a five or seven-item agreement scale commonly used to assess respondents' approval of various statements. The Likert scale assumes that an attitude's strength or intensity is linear. It ranges from strongly agree to strongly disagree, and it requires that the point of view be quantified.

### RESULTS AND DISCUSSION

Interestingly, the findings revealed that 55% of the respondents are Agree, 15% are Strongly Agree, Disagree, and Strongly Disagree, respectively, that their employer has put in place a policy/measures to manage cultural diversity. Thirty-five (35) percent of the respondents are both Strongly Agree and Agree that the restaurant they are currently working at promotes a management style that accepts and appreciates the unique differences in individuals, and twenty (20) percent are Disagree, and ten (10) percent are Strongly Disagree. The findings also revealed that only forty-five (45) percent of the respondents are Strongly Agree, twenty-five (25) percent are Agree that the restaurant they are currently working at has a work environment with no barriers such as communication, promotional opportunities, working relationships, etc. created by cultural differences among individuals and twenty (20) percent are Disagree, and ten (10) percent of the respondents are Disagree. On the other hand, both forty (40) percent of the respondents are Strongly agreed and agree that the restaurant they are currently working at provides opportunities to develop and grow at all levels without cultural barriers or discrimination, and ten (10) percent of the respondents are both Disagree and Strongly Disagree. It was revealed that forty (40) percent of the respondents are both Strongly Agree and Agree that their employer recognizes their culture. As a result, they currently have a sense of belonging to the restaurant they are working in, and ten (10) percent are both Disagree and Strongly Disagree. Also, it was found that fifty-five (55) percent of the respondents are Strongly Agree, thirty (30) percent are Agree that the restaurant they are working at has a work environment that is free from cultural discrimination and ten (10) percent of the respondents are Strongly Disagree. Forty-five (45) percent of the respondents are Strongly Agree, forty (40) percent are Agree that the restaurant values (as employees to improved performance) consider their cultural values, and 10% are Disagree, and 5% are Strongly Disagree. These findings showed that only almost 50% of the respondents are Strongly Agree, 30% are Agree that cultural diversity in the restaurant they are working at increases the productivity of the organization, and 10% are both Disagree and Strongly Disagree. Only 45% are Strongly Agree, 40% are Agree that having a different cultural understanding and language allow their work to provide customer service if there's a foreign customer while another 5% are Disagree, and 10% of the respondents are Strongly Disagree. When it comes to their strengths and weaknesses are well complimented by other cultures; 55% of the respondents are Agree, 30% are Strongly Agree, 10% are Disagree, and 5% are Strongly Disagree. For the effective

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and productive when they work in a group of mixed cultures, 45% of the respondents are Agree, 25% are Strongly Agree, 20% are Disagree, and 10% are Strongly Disagree. There were 60% of the respondents are Agree, 15% are Strongly Agree, that they can better communicate the information about their job to other cultures as much as they do to employees of their culture, while 25% of the respondents are Disagree. These findings show that 50% of the respondents are Agree, 15% are Strongly Agree that cultural stereotypes still exist and affect the functionality and relationship within employees and 25% percent are Disagree, 10% of the respondents are Strongly Disagree. However, only 40% of the respondents are both Strongly Agree and Agree that cultural diversity helps them develop new skills and ways to work and 10% are Disagree and Strongly Disagree. Therefore, a total of 50% of the respondents are Strongly Agree, 35% are Agree that a culturally diverse workforce brings new ideas and different knowledge to the employees, and ten 10% of the respondents are Disagree, and 5% are Strongly Disagree. Fifty (50) percent of the respondents are Agree that cultural diversity management program/education would enhance their performance in doing their job, and another 35% are Strongly Agree, 10% are Disagree, and 5% of the respondents are Strongly Disagree. These findings showed that more than half or 65% of the respondents are Agree, 25% are Strongly Agree that being in a culturally diverse environment triggers their innovative and creative thinking when doing their job and 10% are Disagree.

It was also found out that only 55% of the respondents are Agree and another 25% are Strongly Agree that cultural diversity management has a direct influence on employee and skills retention and 15% are Disagree, 5% of the respondents are Strongly Disagree. These findings showed that only almost 45% of the respondents are Strongly Agree, 40% are Agree that a well-managed culturally diverse workforce contributes to the success and profitability of this business, and 15% of the respondents are Disagree. But there were 50% of the respondents are Strongly Agree, 30% agree that understanding cultural diversity will help them realize their strengths and weaknesses when doing their job. The remaining 15% are Disagree, and 5% are Strongly Disagree.

### CONCLUSION AND RECOMMENDATION

Around the world, finding a job is far more difficult for women than for men. Many women face job discrimination because others assume that they are incapable of doing what men can do. They often feel that women are weak and that certain professions are unsuitable for women. Despite that, according to the researchers' data, female was the most dominant gender, with 26 or 55% of the respondents currently working in a restaurant. It indicates that the gap and gender discrimination in the workplace is now reducing, and women have more opportunities to enjoy equal rights in terms of compensation and benefits, training, development, better promotion, and appraisals.

The age of the respondents ranges from 20-30 or 95%, the period when most of the people need to work to meet their financial obligations and provide financially for their family. This result also indicates that due to differences in the respondents' age, some workplace issues might happen, such as older employees may require more time to adjust to recent technological advancements than younger employees. In addition to this, more youthful employees do not feel valued or respected when collaborating with older employees because of their age. They may be resentful of the more senior employees' greater authority. Employees may have a conflict with their ideas. Still, on the other hand, different experiences, expectations, styles, and perspectives provided by age diversity in the workplace may become a source of strength and innovation for the organization when all these differences are addressed and appropriately managed.

Based on the data, 38 or 75% of the respondents are Roman Catholic. While on the other hand, there are only 12 or 25% Christian. It shows that Roman Catholicism is the most common religion in the workplace. As a result, they are the least likely to experience religious discrimination because they share the same religious beliefs. Besides, 100% of the respondents' ethnicity is Tagalog, which illustrates that the most common ethnicity here in the Philippines is Tagalog. Workers frequently share the same language, allowing for accessible communication and avoiding misunderstandings in the workplace. In terms of race, all the respondents are Asian, indicating that most workers in the Philippines are Asian and share the same physical characteristics that preclude racial discrimination.

The respondents' civil status indicates that 100% of them are single, allowing them to spend as much time pursuing their careers. It makes the single workers focus more on their job than those married and have children to take care of. As a result, the researchers conclude that most single employees are more likely to be promoted than married employees. But on the other hand, married employees receive more paid time off than single employees and more significant employer contributions to their healthcare and pension programs. Most employers provide higher benefits to married employees than to single ones.

Based on the responses of the respondents, the researchers concluded that the respondents agreed that their restaurant promotes a management style that accepts and appreciates the unique differences in individuals. It also shows that their organization provides opportunities to develop and grow at all levels without cultural barriers or discrimination. Also, most

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restaurants where the respondents work have a working environment free from cultural discrimination. They agreed that cultural diversity increases the organization's productivity.

Moreover, the respondents also agreed that they are more productive when collaborating with their co-workers who share their cultural beliefs because they can easily communicate with other employees. Despite that, they also believe that when a culturally diverse workplace is properly managed, it will help them develop new ideas, knowledge, skills, and new ways to work.

In addition to this, the respondents agreed that cultural diversity management program/education would enhance their performance in doing their job. Aside from that, cultural diversity helps them be innovative and increase their creativity. Also, cultural diversity management directly influences employee and skills retention. It also contributes to the success and profitability of the organization as well. The respondents also agreed that understanding cultural diversity would help them realize their strengths and weaknesses when doing their job.

Based on the results, the researchers recommend that entrepreneurs choose employees based on their skills and capabilities rather than their gender when it comes to job opportunities. It will help to reduce and lessen discrimination towards women and men. There must also be an activity for the employees (e.g., team training activities) grouped by different ages to help them improve their relationships as coworkers. It will make them comfortable with each other and lessen their conflicts without thinking about their age gap. As the researchers observe in the results, Roman Catholicism got the least likely to experience religious discrimination because most of them share the same religious beliefs. Researchers suggest that everyone should respect each other's religion, preferences, and beliefs to have unity and understanding of the differences. The researchers also recommend that every restaurant, not just in the locality of the study, should promote a discrimination-free environment so that workers can excel and work efficiently. On top of that, workers should also feel comfortable and confident with their unique differences as it can help to normalize appreciating the notable differences in individuals.

Moreover, the researchers would like to suggest to the restaurant to have a seminar for their employees on how they will deal with everyone's differences and have a team-building or sports activities, so the workers will have bonding with each other and motivated to their work so that their employees can bond and figure out how to build relationships as co-workers despite their differences and to create teamwork for the success of their organization. The researchers recommend that the restaurant have a training program for their staff and employees. To improve their skills and gain access to decision-making to develop innovations. This training program will contribute to the organization's success and allow them to categorize the strengths and weaknesses of each other within their industry.

### LIMITATIONS

Overall, this paper contribute to the understanding about cultural diversity in the workplace particularly in the restaurant sector. However, the study considers only 50 workers which is quite small for a quantitative study. Also, the findings from this study might not be applicable across other sectors.

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## The Effect of Chagi Training on Improving the Balance of Taekwondo Athletes



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**ABSTRACT:** This study aims to determine the effect of chagi training on improving the balance of taekwondo athletes. The benefits of this research; 1) theoretically this research opens a paradigm in the field of coaching in general and especially in the taekwondo martial arts to always use a variety of exercises; 2) this research is expected to increase knowledge to trainers so that they choose training methods that are simple but can improve the physical condition of taekwondo athletes; 3) as a reference value for the quality of further research. This study used an experimental method with a one group pretest-postest research design. This research was held at Gedung Serbaguma, Wirokerten Village, Banguntapan, Bantul, Yogyakarta Special Region. This research was conducted for 4 weeks or 1 month, the research began on 03 October 2022 to 04 November 2022. The population in this study were 15 Bantul taekwondo athletes. The sample in this study were 15 Bantul taekwondo athletes, with total sampling. Data collection techniques are carried out measuring balance with a strok stand measuring instrument. The data analysis technique used is using SPSS 23 software to test the Paired sample Test. The results showed that there was an increase in chagi training on improving the balance of taekwondo athletes with a value of  $0.00 < 0.05$ .

**KEYWORDS:** Chagi training, balance, taekwondo

### I. INTRODUCTION

Sport is a physical activity that can be done by all groups of people to get physical fitness (Manihuruk et al., 2023). Sport is a form of physical activity contained in games, competitions and intensive activities in order to obtain the relevance of victory and optimal achievement (Maliki et al., 2017). In the Law of the Republic of Indonesia No. 3 of 2005 concerning the National Sports System Article 4 reads: National sports aim to maintain and improve health and fitness, achievement, human quality, instill moral values and noble character, sportsmanship, discipline, strengthen and foster national unity, strengthen national resilience, and elevate the dignity and honor of the nation. Sports are also a factor in physical increase, spiritual growth, social and skill development (Gunarsa, 2023). In Indonesia itself, there are many sports that have developed and one of them is taekwondo.

Taekwondo is a military game that has a basic foundation in traditional Korean fighting techniques (Rahmat & Anggara, 2022). Taekwondo implies craftsmanship or methods of self-control or aggressive techniques that utilize the feet and hands (Hanum & Fajar, 2022). Taekwondo is a martial arts sport that has been widely recognized in various levels of society, this can be seen from the many people from various social statuses who practice taekwondo (Irwansyah, 2019).

When taekwondo athletes do training and matches, athletes also need good physical condition (Wahyuni & Donie, 2020). Physical condition is a factor that greatly affects a person's achievement, without good physical condition the technique cannot run perfectly in training or during matches and good physical condition is a requirement that must be possessed by an athlete (Agung et al., 2023). Taekwondo sport requires excellent physical condition, this is due to the high intensity of movement in carrying out each movement technique and one of the physical conditions that must be possessed is balance (Darmanto, 2017).

In an effort to improve the balance of taekwondo athletes, it is necessary to have a structured and programmed training program (Amdan & Sepdanius, 2019). Good balance is very important for effective defense and defense positions for taekwondo athletes with good balance can better avoid opponent attacks and quickly adapt to counter effective attacks on opponents (Saputra & Irianto, 2019). From some literature found that balance is needed by taekwondo athletes in carrying out attacks against opponents, such as research conducted by Ariansyah et al who said that there was a relationship between balance in kicking (Ariansyah et al., 2017).

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From the findings in the field so far the balance of taekwondo athletes is still not good so it is necessary to do varied exercises. Varied exercises can be done with chagi training. Chagi training in taekwondo is an exercise related to kicking techniques. "Chagi" in Korean means "kick" (Rozikin & Hidayah, 2015). Chagi training involves various types of kicks used in taekwondo, both for attack and defense (Wanto & Fikri, 2020). Chagi training involves good body balance and coordination. In taekwondo, good physical balance is essential to maintain stability when performing powerful kicks. Chagi training involves various foot movements, weight shifts, and body rotations, which require balance to maintain optimal control.

To improve the physical quality of athletes in order to be able to defeat their opponents, the coach must be able to make his athletes great at improving the quality of both psychological and physical techniques (Hermawan et al., 2021; Jariono et al., 2020). Therefore, to support success in improving the physical condition of athletes, it is necessary to prepare an exercise program that supports athlete achievement to its peak, in the sense that through the study of science in the analysis of athlete motion, so that the coach can make training programs according to the individual abilities of athletes using a variety of training programs. Sports science which includes physiology, biomechanics, psychology, tests and measurements, sports health, learning to move, nutrition, history and sociology are sub-disciplines to support the theory and methodology of training (Fachrezzy et al., 2021). Without being guided by the correct theory and principles of training, training often leads to unsystematic and methodical training and training practices so that increased achievement is difficult to achieve, therefore training will improve performance and the increase is influenced by the provision of load or energy, setting the rhythm or frequency, rest period and length of training (Wahyuri et al., 2019)

The purpose of this study was to determine the effect of chagi training on improving the balance of taekwondo athletes. The benefits of this research; 1) theoretically this research opens a paradigm in the field of coaching in general and especially in the taekwondo martial arts to always use a variety of exercises, 2) this research is expected to add knowledge to the coaches so that they choose a simple training method but can improve the physical condition of taekwondo athletes, 3) as a reference value for the quality of further research.

## II. METHOD

This type of research is experimental research, so it can be interpreted that experimental research has a treatment given to the sample in the study (Colombo et al., 2023). The experimental method is used to be able to see whether or not there is an effect of the treatment given to taekwondo athletes through chagi training (Chang et al., 2023). The design in this study used a one-group pretest-posttest design. This research was held at Gedung Serbaguna, Wirokerten Village, Banguntapan, Bantul, Yogyakarta Special Region. This research was conducted for 4 weeks or 1 month, the research began on 03 October 2022 to 04 November 2022. The frequency of training was 3 times a week. The number of training sessions was 12 times. Training schedule on Monday, Wednesday and Friday. Training starts at 16-18 WIB. Population is a subject that exists in a study (Li et al., 2023). The population in this study were 15 Bantul taekwondo athletes. The sample is part of the population that will be examined in a study which will later be given treatment and measured with a measuring instrument (Rose et al., 2017; Zalla & Yates, 2021). The sample in this study were 15 Bantul taekwondo athletes, the sampling technique was total sampling, total sampling is all the population in the population sampled to obtain research data (Joni et al., 2023). The instrument used in measuring balance is the stork stand with a validity value of 0.9330 and a reliability of 0.8680. The data analysis technique uses the help of SPSS 23 software to test normality using the Shapiro-wilk test, homogeneity using the One Way Anova test and t test (influence) using the Paired Sample T Test.

## III. DISCUSSION

Based on the research results, then analyzed using SPSS 23 can be seen in the table below:

Table 1. Normality Test

Tests of Normality			
	Shapiro-Wilk		
	Statistic	df	Sig.
Pretest	.890	15	.067
Posttest	.908	15	.127

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

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From the results of data analysis, the pretest value of 0.067 and posttest value of 0.127 is greater than  $> 0.05$ , so it is concluded that the data is normally distributed.

**Table 2. Homogeneity Test**

Test of Homogeneity of Variances			
		Pretest	Posttest
Levene Statistic	df1	df2	Sig.
.967	1	28	.334

From the results of data analysis, the pretest and posttest values are greater than  $> 0.05$ , so it is concluded that the data is Homogeneity distributed.

**Table 3. T-test (Effect)**

### Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pretest Posttest	1519.622	509.406	93.004	1329.407	1709.837	16.339	29	.000

Based on the statistical analysis test using SPSS 23, the results of the T Test (Effect) with the Paired Samples Test test obtained a Sig (2-tailed) value of  $0.000 < 0.05$  so it is concluded that there is a significant effect of chagi training on improving the balance of taekwondo athletes.

Good physical condition is an important factor for taekwondo athletes to achieve optimal performance and good performance (Utomo, 2018). Many factors determine the success of an athlete in appearance during training and matches, including good physical components and the physical components needed are strength, speed, leg muscle power, flexibility, agility, balance and coordination (Munzir, 2022). Good physical condition has several advantages, including athletes being able and easy to learn relatively difficult skills, not getting tired easily when participating in training or matches, training programs can be completed without many obstacles and can complete heavy training (Azwar & Rahmad, 2021).

Continuous training can improve physical conditions, one of which is balance (Arwandi & Ardianda, 2018). The training process that is carried out regularly, planned, methodically and continuously from simple to difficult and repetitive can be interpreted as each training movement is carried out gradually and repeatedly so that movements that were previously difficult to do become easy to do to achieve the goals you want to achieve (Nugroho et al., 2021). In improving balance, there needs to be a good training method that can effectively and efficiently improve balance (Setiyawan, 2018). In addition, the coach must also pay attention to the intensity of the training given to athletes, so that the training is right on target and meets the desired target (Gusnelia et al., 2022), so that the implementation of the research was designed by researchers in accordance with the training periodization to improve the balance of taekwondo athletes with chagi training.

Body balance is important in maintaining stability during complex movements and techniques when taekowndo athletes perform defense or attack (Ardiyansyah et al., 2013). When the athlete attacks using a kick, the athlete's foot position must have balance so that when the athlete is counterattacked by the opponent, the athlete does not fall (Hanief et al., 2016). From the results of the research obtained that cahgi training can improve the balance of taekwondo athletes. Based on the results of the research obtained, it is in line with the opinion of Andrieana & Sugiharto who say that the better the balance ability of an athlete, the better the ability to issue techniques and tactics during training and matches (Andrieana & Sugiharto, 2022).

A good attacking balance ability in taekwondo cannot be possessed if it is not done repeatedly. Chagi training in taekwondo has an important role in improving athletes balance. By practicing chagi regularly, athletes can develop sensitivity and control over their body position during attack and defense, and in chagi training, taekwondo athletes can expand the variety of techniques to improve balance. High-intensity chagi training helps improve balance and strengthens the muscles involved in leg movements.

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### IV. CONCLUSIONS

Chagi training is the right alternative choice to improve physical condition abilities, and which includes physical conditions, namely balance. Based on the results of this study, it can be concluded that there is a significant increase in chagi training on improving the balance of taekwondo athletes.

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## The Mediating Role of Work Environment and Affective Commitment in the Influence of Positive Psychological Capital on Work Performance on Hospitality Employees in Bali



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**ABSTRACT :** Employees can be motivated to commit, achieve, and create a work environment that encourages better performance by tapping into their inner strength. The research aims to observe the effect of positive psychological capital on performance at work, which is mediated by the work environment and affective commitment. Information assortment utilizes a poll that has been tried for legitimacy and unwavering quality. AMOS version 22 is used to process research data using structural equation model analysis (SEM). The examination tests are 135 front liners of 1, 2, 3, 4, and 5-star lodgings in Bali, Indonesia. Positive psychological capital positively affects work performance, work environment, and affective commitment, according to the findings of the study. Affective commitment is positively influenced by the work environment, work performance is influenced by affective commitment, and work performance is mediated by affective commitment. Thus, hoteliers need to take notice of the positive psychological capital of employees through training, seminars, and workshops, so that employees can make a significant contribution to the success of hotels in running their business, because employees can always be expected to be in a psychological state who are ready to face various daily work situations.

**KEYWORDS:** positive psychological capital, work performance, work environment, affective commitment, hotel industry.

### INTRODUCTION

The service industry in the hospitality sector depends on employees performing the work required by the customer. Employees who are not only skilled, but also behave positively in line with the quality of service that has been set, remain productive, and quickly conform to changing working situations and conditions in order to continue to provide a memorable experience for every customer, thereby contributing significantly to the hotel where employees work.

Positive psychological capital generally alludes to the hope, self-efficacy (confidence), resilience, and optimism of employees, executives, and the environment of an organization. (Luthans et al., 2007). Every employee in the company contributes to the organization's intangible assets of capital, namely human, social, and psychological capital (psycap) as a whole. Psychological capital is a construct other than human and social capital that may be applied to jobs in hotels (Huang et al., 2020). Organizational commitment and feeling satisfied at work are linked to psychological capital, as Luthans et al. (2007) believe.

In previous study, psycap together with human and social capital was examined for its effect on the work performance of 7 five-star hotel employees in China. Among the three capitals examined, psychological capital was the most accurate indicator of job self-reported performance. It also showed the significance of psychological capital as an inner resource (Wen et al., 2019) for hotel employees that can be utilized, according to the interactional nature of service work hotel. The study of Huang et al. (2020) confirmed the important role of psychological capital in determining performance in the service sector to support Luthans et al. (2004), Zhou and Yan (2013) and Santos et al. (2018). Employees who have adaptive psychological qualities such as hope, optimism, and resilience in service-oriented jobs with high levels of human interaction will perform well (Huang et al., 2020).

According to Leaman (1995), Haynes (2008), Battenburg and Van der Voordt (2008), and Rothe et al. (2011), the influence of work conditions on workers' contentment and achievement of work results is significant to many researchers. The work environment is everything in the work area (both physical and non-physical) that can affect employees in carrying out work (Sutanto et al., 2018; Widyaningrum and Rachman, 2019).

The research by Alarcon et al. (2021) found that employees' levels of feeling satisfied at work and their responses to specific scenarios are influenced by the work environment. It emphasizes the significance of a positive work environment for each

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organization. Workers are the company's most valuable asset and the driving force behind its success in a tough environment. Because commitment is critical to any business, designing a safe, spacious, and accommodating work environment is necessary for employees to perform their responsibilities effectively in a favorable setting (Agus and Selvaraj, 2020).

The significance of the working environment in fostering organizational commitment is supported by an examination of the specific elements of the commitment in an organization described by Meyer and Allen (1997): affective, continuance, and normative commitment. The literature on current commitment reveals that each individual can simultaneously experience affective, normative, and continuance commitment (Afshari et al., 2019). Individual attitudes reflect whether the relationship with the organization is based on economic motivation or not. According to Clayton and Hutchinson (2002), the commitment behavioral element reflects a individual's readiness to contribute endeavor to the organization as well as their motivation to remain there.

All definitions, according to Meyer and Herscovitch (2001), are derived from the workforce's psychological ties to the organization, which serves as a long-term force that directs behavior. Ng (2015) says that mental connection is a constant strength that can bind workers to the company. Parveen (2019) stated that organizational commitment greatly influences employee performance. Currently, every organization really needs the full commitment of its employees to achieve high performance in the long term.

Previous studies related to positive psychological capital in the hospitality sector still do not highlight much of its influence on work performance, work environment and affective commitment. There is still a lack of research on the hotel industry's work environment's impact on work performance and emotional commitment, besides its impact on emotional bonds on work performance.

The differences of this study are: (1) Research that links positive psychological capital with the employees' work performance in the hospitality sector; (2) Analyze the influence of positive psychological capital on workplace environment and affective commitment; (3) Analyze the influence of work environment on work performance and affective commitment; (4) Analyze the impact of affective commitment on work performance; (5) Analyze the mediation of the work environment in the influence of positive psychological capital on work performance; (6) Analyze affective commitment mediation on the influence of positive psychological capital on work performance; and (7) Analyze the act of affective commitment mediation in the effect of the work environment on work performance.

### **LITERATURE REVIEW**

#### **positive psychological capital**

Luthans et al.'s (2004) study initiated the significance of companies prioritizing positive psychological capital, which is considered to be able to further develop company capital after human and social capital, so that companies have a competitive benefit. Their study refer to the four strengths of positive psychology, namely hope, efficacy (confidence), optimism, and resilience, which are four positive conditions that form positive psychological capital that contribute to increasing productivity, customer service, commitment, and performance.

In organizational psychology, psychological capital (psycap) has accepted a lot of concern, because it is considered a new resource that is an advantage in organizational competition (Nguyen and Ngo, 2020). Psycap provides benefits, returns on investment, and competitive merit through improving employee performance in the organization beyond human capital and social capital (Huang et al., 2020). According to Pan and Zhu (2018), entrepreneurs have long tended to think that a company's sustainable competitive advantage comes from economic capital such as company finances, tangible assets (factories, production equipment, patents, and data) and non-physical assets possessed by human capital, such as experience, education, skills, mastery of technology, and ideas, as well as social capital in the breadth of employee social networks.

Based on the findings and clearer understanding of psychological capital, many employers are aware that the psychological status of active staff, good psychological quality, and positive attitudes are another important source of a company's competitive advantage. Psychological capital has a unique advantage as a critical factor of a enterprise's competitive advantage and a true source of company value. The expressions of Pan and Zhu (2018) as mentioned above are in line with Luthans and Youssef (2004) who define psycap as an essential psychological particle of positive understanding in common, and definitive organizational behavior standards that exceed human capital and social capital..

### **WORK ENVIRONMENT**

The physical and non-physical elements of an employee's workplace that have an effect on them are collectively referred to as the work environment (Sutanto et al., 2018). Arlanti and Sary (2020) stated that the work environment is all things around employees that have a substantial impact on performing their tasks.



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A workplace environment is the condition of the working area that meets the requirements, including the physical and non-physical environment that gives employees a sense of calm. Employees in many organizations experience problems in their work related to workplace environmental factors (Dash and Mohanty, 2019). The appropriate or conducive work environment is the environment where employees feel safe, comfortable, motivating, feeling involved, providing satisfaction while working, and feel at home (Shammout, 2021). Poor working conditions greatly affect employee performance.

Employees will try to give their best and produce high performance if the company realizes a conducive work environment (Zhenjing et al., 2022). Vermooten et al. (2019) argued that employees will display symptom of dissatisfaction by looking for alternative job opportunities elsewhere if the need for the desired work environment is not met.

### **AFFECTIVE COMMITMENT**

A model of three components created by Allen and Meyer in 1990 includes affective commitment, normative commitment, continuance commitment, or calculative commitment (Moreira and Cesário, 2021). The employee's self-recognition as a part of the organization, willingness to participate, and the organizational emotional bond are all reflected in affective commitment.

A strong affective commitment will cause employees to continue their careers within the company because employees want to do so (Meyer and Allen, 1991). Workers with this emotional commitment show a consistency of existence within the company, love to work, and be part of the company because they feel in line with the company's values (Ng and Allen, 2018).

Employee commitment is higher when there are more positive and high-quality experiences in the workplace, so they don't want to leave the company (Agus and Selvaraj, 2020). Research Afshari et al. (2019) found that employees who have clear work identities, company and responsibilities will show increased commitment.

Employees show appropriate attitudes and behaviors in the workplace as a reciprocal of the company's treatment that has provided what employees need. Employee assessment of the workplace contributes to the realization of employee psychological responses, namely job satisfaction and commitment to organization (Ahmad, 2018). How workers feel about their future work can be reflected in the workers' affective commitment (Gulzar, 2020).

### **WORK PERFORMANCE**

Campbell's definition of work performance is accepted and recognized by many academics, namely behaviors or activities that are applicable to organizational objectives (Koopmans, et al., 2011). Three ideas accompany the definition above: (1) work performance is related to behavior, (2) work performance includes behavior that is in line with the intentions of an organization, and (3) work performance is multidimensional.

Campbell (2012) stated that performance is an behavior that can be monitored in a job, and that action must be in line with the achievement of organizational goals. Each member of the enterprise must decide what actions are most pertinent to the aims of the enterprise. Campbell and Wiernik (2015) emphasized that performance must be understood as behavior, namely as things that employees do in carrying out work roles in the organization. The capacity to complete work, which indicates whether a task was completed satisfactorily or poorly, is what is meant to be considered employee performance. Assumptions such as inspiration, behavior, and skills possessed by employees are considered factors that influence employee performance (Parveen, 2019). Performance can be explained as the activities or actions of people that correspond to the goals of the organization (Yuniawan and Udin, 2020).

Performance is the impact of several factors such as job satisfaction, engagement, commitment, work relations, treatment, knowledge, skills and self-efficacy. With these factors in an organization, it is expected that employee performance will be better. Thus, it is important to evaluate employee performance to assess whether the work has been carried out as expected and is directed towards organizational goals (Abun, et al., 2021).

The research model was designed based on the explanation above. Positive psychology capital as a strength in employees has a positive potential to influence the achievement of high work rates (Huang et al., 2020, Daswati et al., 2022), the realization of a conducive work environment (Cherni and Gözen, 2021), and high commitment (Tyagi, 2021), so that it is beneficial for business continuity. To be able to display the best performance, employees are expected to have commitments (Kuhai, et al., 2020). In addition, the work environment contributes to the achievement of high performance (Abun, et al., 2021).

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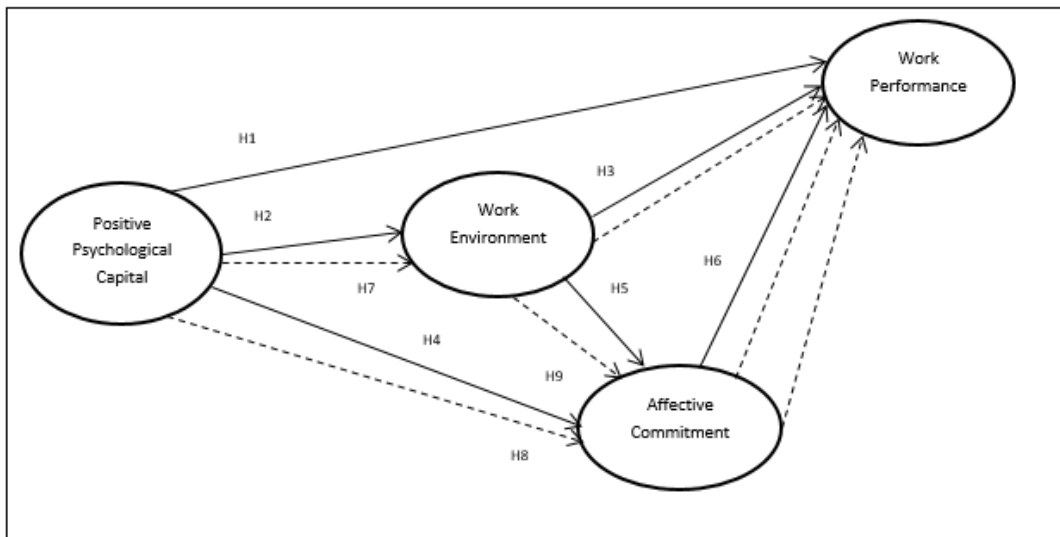


FIGURE 1. Conceptual Framework

## METHODOLOGY

### RESEARCH DESIGN

The present study is causal research that aims to develop a research model that uses in testing the hypothesis. The approach used is a quantitative approach. The data collection is cross-sectional or one-shot, namely collecting data one time, while the unit of analysis is an individual, namely workers of the hotel industry in Bali.

### VARIABLES AND MEASUREMENT

The measurement of the independent variable positive psychological capital using 24 items of the questionnaire on psychological capital adopt from Luthans et al. (2007). Mediating variable work environment using 13 item questionnaire from Razak et al. (2016), the dependent variable affective commitment uses a 8-item questionnaire adopted from Allen and Meyer (1990), and the dependent variable work performance uses a 38-item questionnaire adopted from Koopmans et al. (2012). All research variables are interval scale. Measurement of all questionnaire items using the Likert's scale of 5 starts from 1 = Strongly Disagree to 5 = Strongly Agree.

### METHOD OF COLLECTING DATA

Data was collected from the hotel industry in Bali. The questionnaires as a primary data collection tool was adopted from previous researches, so it has a greater level of reliability. The distribution of questionnaires to 1 to 5 star class hotels was carried out after obtaining a research recommendation letter from Indonesian Hotel and Restaurant Association, Bali Province. Questionnaires in the form of a Google form equipped with a link were submitted to respondents in each hotel through the Indonesian Hotel and Restaurant Association, Bali Province, which then, supported by the hotel's Human Capital Management or General Manager, the questionnaires were distributed to respondents, as well as through the Hotel Front Liners Team Association - Bali Chapter.

Secondary data to complement research data was obtained from government agencies, namely the Central Bureau of Statistics for 2019 - 2022), Center for Data and Information Systems, Ministry of Tourism and Creative Economy, Statista Research Department (November, 2021), and published articles.

### POPULATION AND SAMPLE

The research population are frontliners in the hotel industry, who deal directly with customers, including cashiers, waiters, frontdesk officers and floor managers (Sarwar and Muhammad, 2020), in 1 to 5 star class hotels spread throughout Bali. The number of respondents are 135 hotel employees who returned the questionnaire correctly.

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## RESULTS

### Statistic Descriptive

**Table 1. Gender**

Gender	Frequency	Percentage (%)
Male	79	58,5
Female	56	41,5
<b>Total</b>	<b>135</b>	<b>100</b>

Source: Data processing

The majority of respondents who work as frontline employees are male, which is equal to 58.5%. The general view is that the field of work in hotels operates around the clock and there are no holidays (24 hours in 7 days), which means that it requires a lot of time, attention and energy outside the home, being one of the factors, that this field of work is still more run and in demand by male (see Table 1).

**Table 2. Age**

Age Range	Frequency	Percentage (%)
< 25	14	10,4
26 – 35	65	48,5
36 – 50	54	40,0
> 50	2	1,5
<b>Total</b>	<b>135</b>	<b>100</b>

Source: Data processing

Respondents aged between 26 - 35 years dominated by 48.5% (see Table 2) or nearly half of the total number of samples. It indicates that this age range is the peak of productive age, where respondents who work as frontliners with high work intensity have the best abilities in terms of physical fitness and strength, dexterity in movement, and sharpness in thinking.

**Table 3. Education Background**

Education	Frequency	Percentage (%)
High School	46	34,1
Undergraduate	47	34,8
Bachelor Degree	35	25,9
Master Degree	7	5,2
<b>Total</b>	<b>135</b>	<b>100</b>

Source: Data processing

The majority of respondents who served as frontliners with high school and undergraduate education reached 68.9%. Undergraduates are 34.8%, which means that there is an opportunity to add more employees with vocational education in the hospitality sector, who have sufficient knowledge and insight into hotel operations, including in the frontline section, so that they can gain excellence performance (see Table 3).

**Table 4. Years of Service**

Years	Frequency	Percentage (%)
3 – 5	24	17,8
> 5	76	56,3
<b>Total</b>	<b>135</b>	<b>100</b>

Source: Data processing

Most of the respondents (56.3%) have joined in this hotel for more than 5 years. It means employees already have quite a lot of work experience in the hotel environment, whereas only 25.9% of employees have just started a career in the hotel services sector (see Table 4).

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## ANALYSIS

Hotel employees have positive psychological capital in themselves as an important capital to produce high levels of work performance in carrying out work as frontline employees. The potential of these respondents needs to be maintained and developed so that it can be higher. The descriptive statistics resulting from the positive psycap variable show a total average of 4.2201, with the highest mean indicator of 4.578 and the lowest mean indicator of 3.511.

The hotel where employees work is a conducive work environment, so that employees can work comfortably to serve customers. It shows that the environmental conditions, both physical, such as the arrangement of the workplace, and non-physical, such as appreciation for employees, are supportive. Statistically, based on the average respondent's answer to the work environment variable, it is 4.0667, with the highest mean indicator of 4.578 and the lowest mean indicator of 3.948.

The organizational commitment level as a whole is above the average with an achievement value of 3.739, meaning that employees have sufficient commitment. The highest indicator mean is 4.407 and the lowest indicator mean is 3.207.

Employees have behaved in harmony with the aims and goals of the hotel; employees work to the best of their abilities and roles. Employees have behaved positively in contributing to fulfilling organizational goals which are manifested in task performance, showing good social behavior in hotels and providing services to guests that appear in the form of contextual performance, being able to adapt to various situations that exist in work (adaptive performance), and do not behave negatively in carrying out work and towards fellow co-workers (counterproductive behavior). The total average work performance reached a value of 3.7265 with the highest mean indicator being 4.593 and the lowest mean indicator being 1.385.

The results of testing the feasibility of the model, absolute fit measures/ absolute fit indices were obtained, the RMSEA value was  $.088 < .10$  and the RMR value was  $.072 < .10$ , it was concluded that the goodness-of-fit model (good fit), then hypothesis testing could be carried out.

There are nine hypotheses that need to be confirmed in this study, three of which are rejected and six hypotheses are accepted. Positive psychological capital positively affects work performance with a coefficient of .964 meaning that the higher the positive psychological capital possessed by hotel employees, the higher the employee's performance. As the results find, positive psychological capital positively affects work performance as a statistical conclusion with a confidence level of 95 percent, where testing shows a p-value of  $.000 < .05$  (alpha 5%). Then, H1 is supported. Positive psychological capital positively affects the work environment with an estimated value of positive psychological capital is .234 and based on statistical conclusions that show a 90 percent confidence level, where the p-value is  $.085 < .10$  (alpha 10%). It means that high positive psychological capital of employees will also improve the work environment. So, H2 is supported. The work environment positively affects work performance, with a coefficient of .109, meaning that the higher the work environment support for employees, the higher the employee performance. The test results had a p-value of  $.165 > .05$  (alpha 5%), so it was decided statistically at a 95% confidence level that the workplace environment affects work performance, but not a significant one. Thus, H3 is not supported.

Statistically, positive psychological capital has an absolute effect on affective commitment with an estimate of .814. It means that the higher the positive psychological capital, the higher the employee's affective commitment to the hotel. Positive psychological capital has a statistically significant impact on affective commitment, as evidenced by the test results, which have a p-value of  $.000 < .05$  (alpha 5%). Therefore, H4 is supported. Affective commitment is positively influenced by the work environment, in accordance with the outcome of the test of hypothesis, which found a coefficient of .789. It means that a high work environment will direct employees to have high affective commitment as well. With a statistical confidence level of 95% and a p-value of  $.000 < .05$  (alpha 5%), it may be inferred that the environment of the workplace affects affective commitment. Hence, H5 is supported. Affective commitment positively affects work performance because it has a coefficient of .107, which means an increased employee's affective commitment to the hotel increases the employee's work result. It may be concluded statistically, as determined by the test results of the p-value of  $.050 = .05$  (alpha 5%), there is an influence of affective commitment on work performance, but not significant. Thus, H6 is supported. Testing the hypothesis regarding the mediating of the work environment in the influence of positive psychological capital on work performance, the results show a coefficient of -4.273. This indicates that the work environment is not mediating the effect of positive psychological capital on work performance. Therefore, H7 is not supported. Positive psychological capital has no effect on work performance through affective commitment. The effect coefficient of 1.052 and the p-value of  $.146 > .05$  demonstrate this, so it concluded that the impact of positive psychological capital on work performance is mediated not by affective commitment. Thus, the H8 is not supported. With a coefficient of 1.567 and a p-value of  $.058 < .05$ , affective commitment proves mediating work environment and performance, so H9 is supported.

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### DISCUSSION

The study results demonstrated that positive psychological capital improves work performance. This study supports Daswati et al. (2022) that through psychological capital there was a positive mental attitude within employees which gives strength in carrying out and completing work tasks and responsibilities so that it has an impact on career progress and employee performance. Likewise, Huang's research findings (2020) show that positive psychological capital provides benefits, returns on invested capital, and comparative strength thru improving employee work result in an organization.

This study confirms by Wen et al. (2019) and Sarwar and Muhammad (2020) that the development of positive psycap of employees has an influence on employee performance. Psycap is a source of strength in hospitality employees that can be utilized in accordance with the nature of hotel service which is full of interactions with customers. Psychological strength supports employees in fulfilling their roles in their respective tasks thereby increasing the performance of employees, especially frontline employees who often experience pressure due to dealing with all kinds of customer desires and grievances (Ozturk and Karatepe, 2018). This study demonstrates that employees' positive psychological capital can motivate and strongly encourage them to carry out work in accordance with their respective roles and responsibilities with positive behavior and in accordance with company goals, so that workers can contribute to the hotel in the form of achieving good work performance.

Based on statistical results, this study concludes that positive psychological capital positively impacts the workplace. The finds of the research agree with those of Cherni and Gözen (2021), who suggested the concept of positive psychological capital as the best option to reduce negative opinions of individual organizations in the work environment to create a more favorable work environment and achieve more attractively positive results through positive behavior. Additionally, Çelik (2018) found that growth in the psycap of hotel workers reduced a stressful working environment. Employees who have positive psychological capital have a positive impact on co-workers and external parties related to the company's work activities. Employees can interact smoothly with colleagues in the work environment, communicate and work well together in carrying out work routines with all the dynamics that occur, so as to form a work environment with a good and pleasant work conditions, where this is very helpful in reducing and overcoming the pressure and demands of high-intensity work that can cause physical and mental fatigue.

The findings indicate that the environment of the workplace incorporates an influence on work performance, though not significant. The finds correspond to Mendonca et al. (2021), demonstrating that the work environment has no substantial impact on work performance. A conducive working environment, which does not significantly affect employee performance, shows that physical and psychosocial working climates are oriented more towards the accomplishment of the individual himself. The findings concur with those of Ingsih et al. (2021), indicating that the performance of the employee is unaffected by the work environment. Employees do not need just a favorable workplace environment to improve their performance. Other factors, for instance, drilling related to employee skills improvement are also important. In addition, Pohan and Angkat (2022) discovered that employee performance is unaffected by the work environment in any significant way. Only 5% of employees' effects are influenced by the workplace, while 95% are influenced by unstudied variables.

This study was conducted in the hospitality industry, which is essentially a work environment in which the leisure interests of consumers are crucial. Given the specificity of the hotel industry mentioned above, the employees needed to work in the hospitality sector are individuals who understand and are passionate about service excellence; It means that employees have awareness so that they automatically provide good quality service to their customers, regardless of the work environment conditions, but rather on how professionally the employees focus on providing comfort and convenience so that guests of hotels with star-class service standards can enjoy staying at the hotel and are satisfied in utilizing the facilities.

According to statistical tests, capital, which is positive psychology, positively affects affective commitment. Correspond to the findings of Yildiz (2018) that psychological capital or psycap, for short, was a determining factor for employee affective commitment, and other kinds of commitment (normative and continuance commitment), as well as Huyhn and Hua (2020), stated the need for employees to provide with skill and mental counsel to work all the more productively, effectively and for a lot of time connected to commitment to a company. Specifically, the research findings are in line with Sürücü's research (2020) which stated that the comfort and contentment of hotel workers with positive psycap enhances the environment of business, and commitment also increases, so psycap is an essential antecedent of employee commitment. This research finds positive psychological capital in employees can create a strong bond, a great appreciation of alignment with the company, namely the growth of an emotional bond that makes employees want to stay as long as possible in the organization, because they feel that the organization has become a very meaningful part of life, which manifest in affective commitment.

Affective commitment is positively impacted statistically by the work environment. It is agree with Li et al. (2022), namely that a work environment that emphasizes psychological safety influences affective commitment positively. Affective commitment is significantly influenced by a psychosocial work environment, according to Deepak's research (2020), also Sewwandi and

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Dharmika's (2020) tracked down a critical connection between the workplace spirituality environment and commitment, especially towards affective commitment.

The work environment experienced and felt by employees has supported them in carrying out their daily work, especially the intangible work environment, which relates to the organization's role in appreciating, paying attention to and complementing the skills of employees, so that employees feel emotionally attached to the company and want to spend a career in the company. Employee affective commitment to the company will rise even further in an environment at work that appropriately values employees.

Affective commitment positively impacts performance at work. The findings are appropriate to Gulzar's research (2020), Kunal et al. (2020), and Deepa et al. (2018) findings, which have proven that affective commitment and employee performance were related positively. According to Gulzar's research (2020), employees feel aligned with the objectives and values of the company, which have personal significance to them. As a result, they want to devote themselves to the company and remain there in order to achieve its objectives. Employees are more likely to give extra effort to their coworkers when their degree of affective commitment is high, which strengthens the relationships between coworkers and contributes to a more positive work environment and improved job performance (Kunal et al., 2020).

In this study, employees' affective commitment has the potential to produce high work performance. Employees' emotional bond with the company reflected in affective commitment contributes to maintaining the sustainability of the company's business in running its business, considering that this level of commitment can improve employee work performance. By increasing affective commitment, the company can have a workforce willing to work effectively, defend the company, and has a long service tenure.

The hypothesis regarding the influence of positive psychological capital on work performance mediated by the work environment is not proven. This result is in agreement with the study of Putri and Kistyanto (2019) that it is not proven that non-physical conditions in the work environment that cause burnout among employees affect the relationship between positive psychological capital and employee performance, so that positive psychological capital has a significant influence on employee performance without the presence or absence of conditions created in the work environment because positive psychology capital management has been carried out well by the company. The findings of Hadi and Rahman's (2018) research also show that the non-physical work environment in the shape of quality of work life that exists and creates among employees has no part in influencing psychological capital relationship to performance. In other words, to achieve high performance, employees simply have high psychological capital.

Positive psychological capital affects work performance and is unmediated by the work environment. In this study, employees' positive psychological capital is sufficient to increase employee work performance. Employees do not depend on how the work environment conditions are in providing the best service to customers. Additionally, this study has demonstrated that there was no significant impact in the environment of the workplace on the performance of employees, which indicates that the work environment cannot serve as a mediator of positive psycap on work performance.

Statistics show that the influence of positive psychological capital on work performance is not mediated by affective commitment. These result are consistent with those of Santoso et al.'s study ( 2022), which suggests that affective commitment has no role in the connection of performance and psychological capital.

This study proves that the existence of emotional bonds that is manifested in affective commitment does not explain the beneficial impact of employee psycap along with achievement of employee work performance. Positive psychological capital influences affective commitment or affective commitment is influenced by the level of positive psycap of employees, in contrast to the fact that emotional ties to the organization are not a determinant of positive psycap. As a result, the impact of positive psycap on work performance cannot be explained by affective commitment.

The linkage of the environment condition and performance at work is mediated by affective commitment. These outcomes are consistent with those of Abbas et al. ( 2020), in which affective commitment significantly intercedes the effect of the training-related environment in the workplace on the achievement of the employee's work result. The study outcomes are also consistent with the studies of Hadžiahmetović and Dinç (2017), which revealed the emotional commitment mediation roles on the influence of a non-physical work environment, which practices extrinsic organizational rewards on the performance of employees who are willing to contribute a lot to the organization, and the findings of Hatani (2018) that a good work environment will generate commitment, including the affective commitment to achieving employee performance.

This research demonstrates that emotional commitment is influenced by the workplace environment. Affective commitment also proved to be demonstrated to improve workplace performance. The degree of this affective bond may be affected by the workplace environment. Also, affective commitment can affect the improvement of employee performance, so it may be very

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well presumed that the affective commitment's role can explain the positive impact that the environment in the workplace has on performance at work.

## MANAGERIAL IMPLICATION

The study findings are useful for management and hotel industry practitioners to pay attention to the positive psychological capital of employees through activities that can strengthen the inner psychological capital of every employee involved in the organization. The human resource manager, in this case, has played a crucial role in supporting the realization of positive psychological capital for hotel employees, in order to increase the psychological features that make up these factors. Management needs to improve understanding and ability to develop psychological capital in carrying out business activities in the hotel industry.

The positive psychological capital factor for each individual in an organization has broad and meaningful implications for the organization, especially in this case, hotels, because this capital is an individual's inner strength in an effort to achieve the work performance desired by the company. Some practical things that can be carried out by organizations are listed below:

1. Attention toward the advancement of the positive psychological capital of hotel industry workers through training, seminars, and workshops so that employees can make a significant contribution to the success of hotels in running, maintaining, and developing their business because employees can always expect to be in a psychological state who are ready to face various situations that come in daily work.
2. Maintain a conducive physical and non-physical work environment while prioritizing comfort, safety, and health, as well as harmonious working relationships and smooth communication between superiors, and subordinates and colleagues.
3. Increasing the affective commitment by giving employees appropriate rewards, caring for employees' families, and equipping employees with the necessary work skills to become more professional and more knowledgeable in the field of work.

With the aim of getting different views and contexts, in order to further complement and enrich the findings of research that raises positive psychological capital, further research can be carried out by: (1) Increase the number of samples; and (2) Examining organizational citizenship behavior variables as suggested by Wen et al. (2019) in research on how emotional intelligence affects job satisfaction, examine professional adaptability and team adaptability based on suggestions by Luo et al. (2021) who have examined the psychological capital and internal social capital effect on the performance of employee adaptability.

## CONCLUSION

Positive psychological capital is a strength that originates within employees which in this study was found to enable employees to achieve work performance, create a conducive work environment through positive employee behavior in carrying out work, and increase affective commitment. The environment of the workplace affects positively affective commitment, so the creation of a satisfactory environment in the workplace will increase affective commitment so that, with high affective commitment, it can improve employee work performance. This research has proven that affective commitment affects work performance, but not significantly. It is no substantial impact on the work environment and work performance. In this study, affective commitment plays a part in modulating the influence of the work environment on work performance.

Research findings prove a certain for hotel industry employees in Bali, the work environment and affective commitment have no role in mediating positive psychological capital effects on workers' performance. Thus, positive psychological capital can directly influence work performance.

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## Factors Influencing the Application of Strategic Management Accounting: A Study of Manufacturing Enterprises in Hanoi



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**ABSTRACT:** Strategic management accounting (SMA) information helps managers determine the strategy and strategic position of the business. At the same time, SMA helps managers see and re-evaluate problems so that they can draw on their experiences and lessons for decision-making and control. Currently, manufacturing enterprises in Hanoi are aware of the important role of strategic management accounting information, but the level of application of strategic management accounting techniques is low. This article aims to evaluate the factors affecting the application of strategic management accounting in manufacturing enterprises in Hanoi, thereby making recommendations for these enterprises to increase the use of strategic management accounting information to help business managers make business decisions.

**KEYWORDS:** Strategic management accounting, factors, Hanoi.

### 1. INTRODUCTION

Stemming from the characteristics of information as well as information needs for strategic management, it is easy to see the breakthrough role in providing information for each technique through the content of each SMA technique. Each technique focuses on the core problem, forming a set of main issues to be able to obtain a reliable source of information to support the administrator in the process of performing the functions in each stage of strategic management. SMA information helps managers determine the strategy and strategic position of the business because the related techniques take into account external factors such as the competitive environment (Simmond, 1981). Simultaneously identify risks so that managers can have mitigation plans or action plans, and at the same time allow businesses to monitor the progress of strategy implementation (Roslender and Hart, 2003). SMA information helps managers have a basis for planning. Planning is considered a core function, helping managers analyze and forecast key issues and limit possible risks with the least damage. Therefore, information from SMA techniques provides clear information for each object that managers need to plan, whether for short-term or long-term planning. Strategic management accounting information helps managers make decisions. Every day, managers make many different decisions. For example, which investment option should choose? What property should buy? How should the product change? Selling at what price to be competitive, or what strategy is needed to maintain a position or increase market share? These decisions all require specific amounts of information, tailored to each situation. SMA information helps managers perform reviews. This is the last step of the administrator after making a decision and implementing it, helping the administrator to see and re-evaluate the problem, so that the administrator will draw experiences and lessons for decision-making and control. This article aims to evaluate the factors affecting the application of strategic management accounting in manufacturing enterprises in Hanoi, thereby making recommendations for these enterprises to increase the use of strategic management accounting information to help business managers make business decisions.

### 2. LITERATURE REVIEW

Up until now, there have been many studies focusing on explaining the causes and effects of factors on the application of SMA in enterprises. Prominent in these works are the studies of Piere and Odea (1998), Joshi (2001), Szychta (2002), Sulaiman et al. (2004), and Doan Ngoc Phi Anh (2012). Most of the studies on the factors affecting the application of SMA in enterprises are based on random theory to determine the influencing factors. However, the factors affecting each study are not exactly the same.

The first is competition, or the degree of competition in the market, which is the factor most studies are interested in. Research by authors Kaplan (1991), Sulaiman et al. (2004), Doan Ngoc Phi Anh (2012), and Kariuki (2016) all show that the level of use of the

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SMA technique is proportional to the level of competition in the enterprise. This means that when competition is increasing, businesses need information to serve corporate governance and help managers make more effective decisions.

The second factor in many studies is firm size. The research works of the authors Pierce and O'Dea (1998) and Abbler et al. (2008) all consider size as a factor that affects the application of SMA techniques in enterprises. Large enterprises often have more management information needs as well as financial resources to apply modern management accounting techniques such as SMA. In Western countries, the use of the ABC method is often associated with firm size (Chenhall and Langfield Smith, 1998), and large firms often value cost information more (Hoque, 2000). Research results by Piere and ODea (1998) also show that large-scale enterprises have a higher status in applying management accounting techniques than small-sized enterprises, especially technical methods related to control and evaluation. However, the level of influence of firm size on the application of the SMA technique also has exceptions in some studies. Research by Lollanen (2010) suggests that the size of medium and large enterprises is not the main factor affecting the application of modern SMA in manufacturing enterprises in Canada. Similarly, the study of Van Triest and Eslshat (2007) also found no relationship between firm size and the characteristics of the cost accounting system.

The third factor mentioned by the studies is corporate strategy. Guilding (2002), in a research study on an exploratory investigation of SMA's integrated contingency model, surveying 500 large Slovenian enterprises, found four factors affecting the use of SMA in enterprises. It is corporate strategy, deliberate corporate strategy formulation, market orientation and business size. Mohamad et al (2014) studied the factors affecting the use of SMA in the Malaysian government's affiliated companies, providing a research model consisting of two variables, firm strategy and technical information level in the enterprise. The research results show that both of these factors have a positive influence on the use of SMA techniques in enterprises.

Besides the factors affecting the application of SMA mentioned in most of the overseas studies, such as level of competition, enterprise size, and business strategy, there are a number of studies that make comments about other factors. For example, James (2013) studies the influence of factors on the application of activity-based costing in Jamaican financial companies. The research results show three factors that have an important influence on the application of this costing technique: awareness of the ABC method's ability to control costs, the overall cost ratio in total costs, and competitors' actions in ABC adoption.

In Vietnam, the most prominent research work of author Doan Ngoc Phi Anh (2012), research on factors affecting the application of strategic management accounting in Vietnamese enterprises, was conducted based on a survey of 220 medium and large enterprises in the entire territory of Vietnam. Doan Ngoc Phi Anh (2012) studied the factors affecting the application of SMA in Vietnamese enterprises, giving three factors: the level of use of SMA is proportional to the level of competition of enterprises; the level of use of SMA is proportional to management decentralization; and business performance is proportional to SMA usage. However, this study has not addressed the perception of usefulness, ease of use, or the influence of socio-environmental conditions on the use of SMA techniques. For the purpose of analyzing factors affecting the application of SMA in manufacturing enterprises in Hanoi, the author proposes a research model of influencing factors based on the TAM model. TAM theory asserts that perceived usefulness, perceived ease of use, and environmental influences are fundamental determinants of technology adoption and use.

### 3. RESEARCH METHOD

#### Implementation process

Step 1: We build a questionnaire on Google Forms, send it to accountants and business managers via email using a convenient sampling method, and send it to friends, relatives, and partners. ...

Step 2: The number of survey questionnaires distributed was 150, sent to 150 enterprises, and the number of votes collected was 128 from 128 enterprises, reaching 85.3%. All receipts met the required information requirements.

Step 3: We analyzed the data on SPSS 22 software with the following tools: checking the reliability of the scale using Cronbach's alpha; EFA exploratory factor analysis; correlation analysis; and regression analysis.

#### Research scale

Inheriting from previous theoretical studies, the proposed hypotheses:

*Hypothesis 1 (H1): Recognizing the usefulness of SMA will have a positive influence on the application of SMA in manufacturing enterprises in Hanoi.*

Usefulness is defined as the degree to which accountants and managers believe that using the SMA will make their work more efficient (Davis, 1989). Perceived usefulness describes the extent to which individuals believe that SMA is appropriate for their job requirements. Perceived usefulness has a positive influence on intention to use (Lin et al., 2005; Tang and Chiang, 2009) from the accountant's and managers' point of view on SMA (Davis, 1993; Yu et al., 2012).

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*Hypothesis 2 (H2): Awareness of the ease of use of SMA will have a positive influence on the application of SMA in manufacturing enterprises in Hanoi.*

Perceived ease of use is the degree to which a person believes that using a technology or technique will not be difficult. Perceived ease of use is a construct associated with an individual's assessment of the effort involved in using the system. While potential users may believe that a technology will be useful, they may also believe that the technology will be too difficult to use. Davis (1989) suggested that perceived use may be superior to ease of use. According to Venkatesh et al. (2003), perceived ease of use stems from the perceived ease of use proposed in the TAM technology adoption model. Davis (1989) shows that an application that is perceived as easy to use by individuals is likely to be accepted. Perceived ease of use is determined by the ease of interacting with the system.

*Hypothesis 3 (H3): Environmental influences encourage the use of SMA in manufacturing enterprises in Hanoi.*

Environmental impact is defined as the degree to which an individual perceives that those important to them believe they should adopt a new technology or technique (Venkatesh et al., 2003). Social influence describes how individuals perceive that those who are important to them will support the adoption of technology. Taylor (2004) argues that when users actually use a new system, their expectations come from their direct experience and are less influenced by others. The intention to apply SMA is influenced by close friends, by people who influence the user's work, by accounting professionals (Singh et al., 2010), and by managers in the business themselves. Managers are people who directly use information from SMA to make decisions, so their need to use information has an important influence on the application of SMA in enterprises.

*Specific measures in the factor research model:*

"Perceived usefulness" is measured by 5 scales: Useful in providing information to managers at all levels; Increase efficiency in business decision-making; Helpful in understanding competitors; Helpful in customer reviews; Necessary and appropriate for the business.

"Perceived ease of use" is measured by 2 scales: Understanding SMA is not difficult; Easy to use SMA

"Environmental influence" is measured by 3 scales: Partners, customers and suppliers suggest that strategic management accounting should be applied in making business decisions; Managers intimately apply strategic management accounting in making business decisions that affect decision making; An experienced administrator advises.

Apply the 5-point Likert scale: 1- Strongly disagree; 2 - Disagree, 3 - Normal, 4 - Agree, 5- Strongly Agree.

**Table 1. Scale description table**

No	Factor	Code	No. Variables
1	Perceived usefulness	HU	5
2	Perceived ease of use	SD	2
3	Environmental influence	MT	3

## 4. RESULTS

### 4.1. Evaluate the reliability of the scale

**Table 2. Reliability Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cronbach's Alpha = .729				
HU1	16.77	2.712	.595	.647
HU2	16.59	2.716	.472	.690
HU3	16.70	2.576	.585	.645
HU4	16.48	2.787	.493	.725
HU5	16.71	2.916	.430	.705
Cronbach's Alpha = .719				
SD1	4.02	.456	.562	.
SD2	3.88	.419	.562	.

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Cronbach's Alpha = .707				
MT1	7.87	1.407	.432	.499
MT2	8.12	.970	.467	.440
MT3	7.88	1.370	.475	.563

The analysis results of the group of perceived usefulness factors show that the Cronbach's Alpha coefficient of the scale is 0.729 > 0.6, the correlation coefficients of the total variables of the observed variables in the scale are all greater than 0.3, and no the case of removing any observed variable can make the Cronbach's Alpha of this scale greater than 0.729. Therefore, all observed variables are accepted and will be used in the next factor analysis.

The analysis results of perceived usefulness group show that the Cronbach's Alpha coefficient of the scale is 0.719 > 0.6, the correlation coefficients of the total variables of the observed variables in the scale are all greater than 0.3 and not Is there any case where removing the observed variable can make the Cronbach's Alpha of this scale greater than 0.719. This proves that the variables are reliable enough in terms of coherence for the assessment of factors affecting the application of SMA.

The analysis results of the group environmental influence factors show that the Cronbach's Alpha coefficient of the scale is 0.707 > 0.6, the correlation coefficients of the total variables of the observed variables in the scale are all greater than 0.3 and There is no case where the removal of the observed variable can make the Cronbach's Alpha of this scale greater than 0.707. This proves that the variables are reliable enough in terms of coherence for the assessment of factors affecting the application of SMA.

### 4.2. Exploratory factor analysis

The coefficient KMO = 0.786 > 0.05 shows that the study has enough observed variables to constitute a factor. The significance level Sig. = 0.000 < 0.05% shows that the Bartlett test is statistically significant and shows that the analysis of factors is appropriate.

**Table 3. KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.786
Approx. Chi-Square		303.827
Bartlett's Test of Sphericity	df	45
	Sig.	.000

**Table 4. Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
HU1	.786		
HU2	.520		
HU3	.779		
HU4	.680		
SD1			.826
SD2			.835
MT1		.629	
MT2		.838	
MT3		.587	

The results show that 9 observed variables all have factor loading coefficients larger than the standard (0.50) and 1 variable has factor loading coefficients smaller than the standard, so in case of 1 variable being eliminated: Necessary and suitable for business (HU5). Thus, the group of factors affecting the application of SMA in manufacturing enterprises in Hanoi city consists of 3 groups with 9 variables, namely: useful group, easy to use group and environmental influence group. The usefulness group consists of four variables: useful in providing information, effective in decision-making, useful in understanding competitors, and useful in evaluating customers. The ease-of-use group consists of two variables: the uncomplicated SMA and the easy-to-use SMA. The environmental impact group consists of 3 variables: used by partners, customers, suppliers, close managers, and recommended by experienced administrators.

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## 4.3. Multivariate regression analysis

**Table 5. Model Summary**

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.664 <sup>a</sup>	.441	.431	.37984

The coefficient R<sup>2</sup> = 0.441 shows that the usefulness, ease of use, and environmental influence can explain 44.1% of the total impact of factors on the intention to apply SMA in manufacturing enterprises area of Hanoi.

Hypothesis testing about the overall fit of the model, value F=46,158 with sig.=000 < 5%. Prove that the R squared of the population is not 0. It means that the built linear regression model is suitable for the population.

**Table 6. ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	13.319	3	6.660	46.158	.000 <sup>b</sup>
Residual	16.881	124	.144		
Total	30.200	127			

**Table 7. Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.594	.368		1.612	.110		
HU	.528	.096	.434	5.507	.000	.768	1.302
SD	.226	.065	.354	4.14	.000	.768	1.302
MT	.329	.078	.335	4.247	.000	.768	1.302

The analysis results show that the values in column Sig. <5% shows that all three independent variables have a statistically significant impact on the dependent variable. The relationship between the variables is shown by the following equation:

$$VD = 0.594 + 0,528 * HU + 0,226 * SD + 0,329 * MT$$

## 5. CONCLUSION

The regression results support the following hypotheses: Useful; Ease of use, environmental influence all have positive and statistically significant relationships to the intention to apply SMA in manufacturing enterprises in Hanoi. The usefulness affects the intention to apply the SMA with a coefficient of 0.528, while the ease of use and the influence of the environment are lower with the coefficients of 0.226 and 0.329, respectively. Therefore, in order to increase the use of SMA in manufacturing enterprises in Hanoi, each enterprise needs to:

First, focus on factors with a high degree of agreement, including elements in the group of usefulness factors. Raise awareness of the usefulness of using SMA. The managers themselves need to learn and be propagated to realize that SMA is useful in providing information to managers, SMA increases the efficiency of management work, and SMA is necessary and suitable for enterprises. At that time, the intention to apply SMA to manufacturing enterprises in Hanoi will increase significantly.

Second, improve the ease of use and environmental impact of using the SMA. Business administrators and corporate management accounting departments need to learn about SMA. When there is a certain understanding of SMA, managers of manufacturing enterprises in Hanoi will find it easy to apply SMA to provide information. Besides, in order to improve the intention to apply SMA,

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business managers and management accounting departments of manufacturing enterprises in Hanoi should be consulted and communicated about the usefulness and ease of use of SMA through seminars and through talks by experts, good managers, and friends in the industry who have been successfully applying SMA to provide information to managers.

Thus, when managers of manufacturing enterprises in Hanoi have access to information about SMA, let them realize that SMA is useful, learning SMA is not difficult, applying SMA is easy, management accounting friends are using SMA successfully, and recommending them to use SMA will enhance their intention to apply SMA in business.

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## The Effect of Different Light Intensities on the Growth and Yield of Tomato (*Lycopersicon Esculentum Mill.*)



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**ABSTRACT:** Tomato (*Lycopersicon Esculentum Mill.*) is one of the popular fruit vegetables, especially rich in vitamins, minerals, and antioxidants. Inconsistent light intensity, due to unfavorable weather conditions, reduced tomato performance. Response of one tomato variety (Diamante Max F1), under different light intensities (T1: Control, T2: Single net T3: Double net,) was assessed in field trials. The experimental design was a randomized complete block design (RCBD). Effects of different light intensities were measured in terms of plant height, number of days to flower, number of fruits, the weight of fruits, yield per hectare, and light intensity received in every treatment. All results were significantly different at a 1% level of significance for all parameters. Treatment 2 manifested the highest mean for plant height, treatment 1 for the number of days to flower, and treatment 3 for the number of fruits. Treatment 3 obtained the highest yield per hectare and Treatment 1 for the highest light intensity received per treatment. Treatment 2 has the least mean for all parameters measured, in conclusion, the effect using a double net is highly recommended in tomato production.

**KEYWORDS:** ANOVA, RCBD, Light Intensity, Vegetable, Antioxidant.

### INTRODUCTION

Tomato (*Lycopersicon Esculentum Mill.*) belongs to the Solanaceae family and is one of the most popular fruit vegetables in the Philippines and other places worldwide. It is cultivated for its fleshy fruits and harvested when fully formed and mature green and eaten fresh or processed. They are a good source of vitamins, minerals, and antioxidants which help control cancer and other health problems, and improve the general well-being of man (Antonio et al., 2004). Apart from its use as a vegetable, it is also used for several purposes as sauce, juice, and ketchup (Encyclopedia of Food and Culture, 2003). However, despite the nutritional values of tomatoes and their geographical distribution, as well as their adaptability to varying climatic conditions, the yield of tomatoes is still very low. Its attributed to unstable climatic conditions. Normally, tomato being a tropical plant grows well under warm conditions with sufficient moisture levels and light intensities. With the recent climate change, the yield of tomatoes has been reduced. Unfavorable climatic conditions such as drought, edaphic factors, and excess or lowlight intensity can damage the quality and reduce the production (Agbogidi and Nweke, 2005).

Light is an absolute requirement for plant growth and development next to the water. It is because an increase in light intensity will increase the rate of photosynthesis. Light modifies the anatomy and physiology of the leaf (Wilson and Coope, 1969). As reported, plants grown under high light intensity are capable of faster photosynthesis than those grown under weaker light (Knorr and Vegtmann, 1983). Therefore, the current research study aimed to determine the effect of different light intensity reductions using various layer of black nylon net on the growth and yield of tomatoes.

### MATERIALS AND METHODS

#### Site selection and time of study

The study was conducted at Western Mindanao State University, College of Agriculture San Ramon, Zamboanga City, Philippines.

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Zamboanga City Map

**Figure 1. Location Map of the Experimental area.**

**MATERIALS AND METHODS**

**Experimental Design**

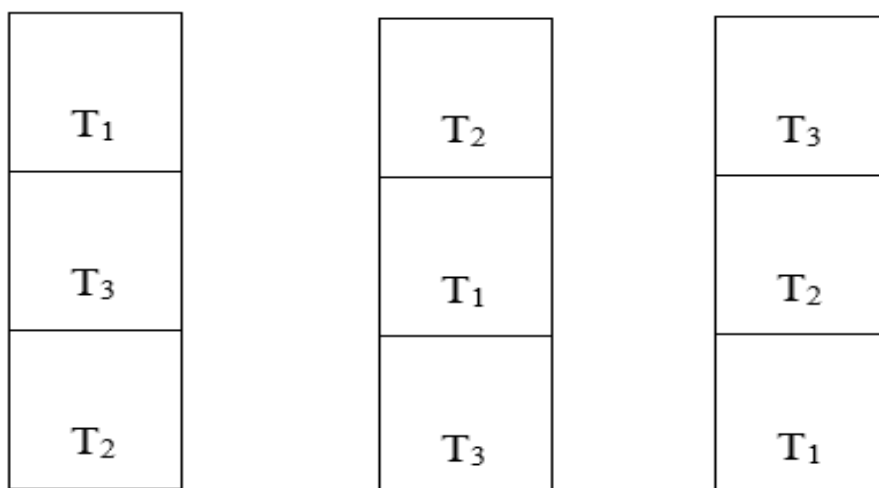
The experimental design used in this study was a Randomized Complete Block Design (RCBD) with three (3) treatments to be replicated three (3) times.

The treatments are as follows:

Treatment 1 (T1): Control (without net)

Treatment 2 (T2): Single Layered Black net

Treatment 3 (T3): Double Layered Black net



**Figure 2. Field layout showing the three (3) treatments replicated three (3) times in Randomized Complete Block Design (RCBD).**

**Soil Sample and Analysis**

The soil sample was taken in the experimental area. The sample was brought to the Department of Agriculture Bureau of Soil Laboratory at Zamboanga City, for soil analysis and to know the right amount of fertilizer nutrient needed by the plant based on their recommendations.

**Procedures:**

**Land Preparation**

Weeds and other unwanted materials were removed from the study area. Then the area was divided into three blocks to represent the replication and each block is subdivided into three plots where the different treatments were assigned.

**Plowing**

The experimental area was plowed twice using the tractor to assure a well-prepared land for planting, the weeds in the area were cleared by cutting with the use of a bolo knife.

**Harrowing**

This was done through the use of a tractor harrow. Harrowing is often carried out on fields to follow the rough finish left by plowing operations. The purpose of this harrowing is generally to break up clods (lumps of soil) and to provide a finer finish.

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## Seedlings Preparation

A seed tray was used for the sowing of seeds. The seed tray was mixed with 1/2-inch of soil and a pair of seeds was placed on top of the soil each one near the center of the pot. And was covered with a ¼-inch layer of Vermicast.

## Sowing

Seeds were sown by drilling, watered daily using water can and other cultural practices were observed until the seedlings were ready for transplanting.

## Hardening

The seedling was hardened through gradual exposure to the heat of the sun to adapt to the condition in the field.

## Transplanting

Four weeks old seedlings were transplanted at a distance of 40 cm between hills and 50cm between furrows.

## Fertilizer Application

Organic and inorganic fertilizer was used in the study. This will incorporate with the soil during land preparation.

## Light Intensity Gathering

A light meter was used in the study to be able to measure the light intensity that enters the plot.

## Water Management

Watering was done every morning and afternoon with the use of a sprinkler to minimize water stress to allow sufficient availability of moisture in the plants.

## Trellising

In trellising ipil-ipil sticks was used as trellis post and straws were used as tying material. The use of a trellis was done to minimize the branches and leaves from folding.

## Net Installation

To reduce light intensity using the black net, four (4) wooden poles at a height of 1.5 m were placed at each corner to support the net on the plot. The net was intertwined with the poles to reduce the light that enters the plot. The net was installed 5 days after transplanting the seedlings in the field.

## Weeding

Weed control was done by the hand-weeding method. Weeding was done to ensure that weeds do not compete with nutrients on the plant.

## Insect Pest Management

A hot pepper extract was used in the study to control the insect pest in the area. The hot pepper extract was prepared by collecting the hot pepper and was squeezed and the extract was diluted into water.

## Harvesting

Tomato fruit was harvested 40-45 days after transplanting and it was done early in the morning to prevent rotting. This was done by hand-picking those that are fully red and firm. The tomato fruit was placed in a box with newspaper to prevent fruit damage.

## GATHERING OF DATA

The following data gathered were:

- 1. Plant height** The height of plants was collected by measuring the six samples of plants per plot from the base of the plant up to the tip of the uppermost leaves. Plant height was taken up to the flowering stage.
- 2. Number of days to Flowering** This was done by counting the number of days from planting to the first harvest.
- 3. The number of fruits** was taken by counting the fruits from representative plants. The total number of fruits per plant in each sample was used to represent the number of fruits per plant.
- 4. Weight of fruits** The average weight of the fruits were taken by weighing the matured fruits per harvest. The total cumulative harvested fruit was used to determine the average yield of tomatoes per plot.
- 5. Yield per hectare** This was taken from the cumulative weight of fruits per plot. The accumulated yield per plot was converted to a hectare basis using the following formula.
- 6. Yield (kg/ha) =  $\frac{10,000 \text{ m}^2}{\text{ha}} \times \text{Yield (kg/plot)}$**  Plot size ( $\text{m}^2$  / plot)
- 7. Light intensity received in every treatment (lux)** The light intensities within and outside were measured using a light meter three times a week in the morning (10:00 am), (12:00nn), and afternoon (3:00 pm).

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### DATA ANALYSIS

The data collected was done by tabulating and was analyzed using an appropriate tool which is the Analysis of Variance (ANOVA) to identify and determine the growth and yield performance of corn (*Zea mays*) as affected by both the application of different organic fertilizers

### RESULTS AND DISCUSSION

#### Plant Height

The plant height of the tomato was measured in centimeters as grown in different light intensities, as shown in Table 1. As noted in the data, plants grown in treatment 2 obtained the highest plant height with a mean of 30.7014 cm, followed by treatment 3 with a 28.944 cm mean. The shortest plants with a mean of 25.569 cm were observed in treatment 1. The observed numerical differences in the plant height of tomatoes were not significantly different observed in the plant height. The result indicates that using the single net and double net failed to influence significant growth in plant height.

**Table 1 .Plant height of tomato**

TREATMENT	REPLICATION			TOTAL	MEAN
	I	II	III		
T1-Without net (Control)	22.29	25.91	28.50	76.69	25.56
T2-Single net	30.27	30.18	31.66	92.10	30.70
T3- double net	25.46	31.46	29.92	86.83	28.94
Block total	78.01	87.54	90.07		
Block mean	26.01	29.18	30.03		
Total				255.63	
Grand mean					28.40

ns= not significant

cv= 6.4305%

**Table 2. Number of days to Flower**

TREATMENT	REPLICATION			TOTAL	MEAN
	I	II	III		
T1-Without net (Control)	37.33	42.50	38.83	118.67	39.56
T2-Single net	37.33	39.67	39.00	116.00	38.67
T3- double net	37.33	48.33	51.33	137.00	45.67
Block total	112.00	130.50	129.17		
Block mean	37.33	43.50	43.06		
Grand total				371.67	
Grand mean					41.30

ns- not significant

cv=8.92%

The days of the flower tomato, as grown in different light intensities, are shown in Table 2. The plants are grown in treatment (T2) produced the flower earliest with a mean of 38.67 days, followed by treatment (T1) with a mean of 39.56 days, and the plants with a late number of days to flower with a mean of 45.67 were observed in treatment 3. The observed numerical differences in the number of days to the flower of tomato obtained F computed of 3.2202 is less than the F tabular value of 6.94 at a 5% level of significance as revealed by the analysis of variance

#### Number of Fruits

The number of fruit in tomatoes grown in different light intensities is shown in Table 3. As shown plants grown in treatment 3 produced the most fruit with a mean of 7.58, followed by treatment 2 with a mean of 6.47, and the plants with the least number of fruit with a mean of 4.66 were observed in treatment 1.

The analysis of variance reveals that there were no significant differences observed in the number of fruits. The result indicates that using the single net and double net failed to influence the growth of numerous fruits

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**Table 3. Number of Fruit**

TREATMENT	REPLICATION			TOTAL	MEAN
	I	II	III		
T1-Without net (Control)	4.81	4.13	5.03	13.89	4.66
T2-Single net	6.70	5133.00	7.57	19.40	6.47
T3- double net	11.73	6.40	4.62	22.75	7.58
Block total	23.25	15.67	17.22		
Block mean	7.75	5.22	5.74		
Grand total				56.13	
Grand mean					6.24

### Weight of fruits

The weight of fruits of tomato as grown in different light intensities was shown in Table 4. As shown plants grown in treatment 3 produced more weight with a mean of 524.44 g, followed by treatment 2 with a mean of 344.44 g, and the plants with the least weight were grown in treatment 1 with a mean of 241.78 g. The observed numerical differences in the weight of tomato fruit were not significantly different observed in the weight of fruits. The result indicates that using the single net and double net failed to influence the plant height.

**Table 4. Weight of Fruits in Kilograms**

TREATMENT	REPLICATION			TOTAL	MEAN
	I	II	III		
T1-Without net (Control)	253.33	216.00	256.00	725.33	241.78
T2-Single net	329.33	363.00	341.00	1033.33	344.44
T3- double net	492.33	498.33	582.67	1573.33	524.44
Block total	1075.00	1077.33	1179.67		
Block mean	358.33	359.11	393.22		
Grand total				3332.11	
Grand mean					370.22

### Yield per Hectare

The yield per hectare of tomato as grown in different light intensities is shown in Table 5. As shown plants grown in treatment 3 produced the biggest yield per hectare with a mean of 11,654.3 kg, followed by treatment 2 with a mean of 7,654.3 kg, and the plants with the least yield per hectare were grown in treatment 1 with a mean of 5,372.63 kg.

The observed numerical differences in the yield per hectare of tomato obtained F computed of 57.05 is greater than the F tabular value of 18.00 at a 1% level of significance as revealed by the analysis of variance. LSD<sub>0.05</sub> shows that each treatment was significantly different from the other. This agrees with the study of Liao, Zou, Ge, and Chang that plants grown in low light intensities produces larger leaf area and higher yield compared to unprotected plants.

**Table 5. Yield per Hectare in Kilogram**

TREATMENT	REPLICATION			TOTAL	MEAN
	I	II	III		
T1-Without net (Control)	5,629.00	4,800.00	5,688.89	16,117.89	5,372.63c
T2-Single net	7,318.44	8,066.67	7,577.00	22,962.89	7,654.3b
T3- double net	10,940.67	11,074.00	12,948.22	34,962.89	11,654.3a
Block total	23,888.11	23,940.67	12,948.22		
Block mean	7,962.70	7,980.20	8,738.29		
Grand total				74,043.67	
Grand mean					8,227.10

\*\*= significant at 1% level

cv= 8.86%

LSD-0.06= 1,938.07 g

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### Light received in every Treatment

The light received in every treatment in different light intensities is shown in Table 6. As shown, plants grown in treatment 1 has more light received with a mean of 3086.356 lux followed by treatment 2 with a mean of 1830.578 lux, and the plant with less light intensity was grown in treatment 3 with a mean of 1140.378 lux.

The observed numerical differences in the light received in every treatment of tomato obtained F computed 11, 077.78 is greater than the F tabular value of 18.00 at a 1% level of significance as revealed by the analysis of variance.

LSD-0.05 shows that treatments 1, 2, and 3 were significantly different from one another. The study agrees with Chapman and Carter, the minimum limit for the process of photosynthesis in most plants is between 100 and 200 fc or 1,076 lux to 2,150 lux (1976). Likewise, excessive light intensity can scorch leaves and reduce yields as reported by Edmond et. al (1978). Light occupies a prominent position among other factors affecting transpiration since it has a dominating effect on stomatal movement. The stomates of the plant exposed to light are opened allowing transpiration to occur as stated by Robert Devlin; furthermore, the rate of transpiration must be less than that of absorption (1977).

Started by Bormann that the rate of photosynthesis

**Table 6. Light Intensity Received in every Treatment (lux)**

TREATMENT	REPLICATION			TOTAL	MEAN
	I	II	III		
T1-Without net (Control)	5,629.00	4,800.00	5,688.89	16,117.89	5,372.63c
T2-Single net	7,318.44	8,066.67	7,577.00	22,962.89	7,654.3b
T3- double net	10,940.67	11,074.00	12,948.22	34,962.89	11,654.3a
Block total	23,888.11	23,940.67	12,948.22		
Block mean	7,962.70	7,980.20	8,738.29		
Grand total				74,043.67	
Grand mean					8,227.10

\*\*significant at 1% level

Cv=0.804%

LSD-0.05= 43.157 lux

Table 6.1 Analysis of Variance

### CONCLUSION

The result showed that there are significant influences by the different light intensities compared to the control treatment measured through the measured parameters. Based on the findings, the treatments are comparable with each other in terms of plant height, days to maturity, number of fruits, and weight of fruits per hectare, and light intensities were significantly different. It agrees with the findings of Brouwer stated that light intensity affects the growth rate of roots generally more than that of shoots (1963).

The researcher highly recommends using double netting to reduce the light intensity because based on the study treatment 3 or double layer of net has a mean of 1140.3778 lux compared to the unprotected treatment of 3086.3556 lux. And also, treatment 3 or double netting produced the heaviest weight of fruits with a mean of 22.895 g. For further study, the use of colored nets, and potted plants can be used as experimental samples because the rate of transpiration can be measured

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## New Lms Mobile Framework Based on Multiplatform: A Literature Review of Mobile Lms Theory, Design and Implementation



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**ABSTRACT:** Online learning has become an option to be implemented in various schools because the development of IT technology and the COVID-19 pandemic have made online learning more popular to implement. Mobile LMS is the most dominant used in online learning. This study aims to produce a Mobile LMS framework developed from previous research based on the advantages and disadvantages. The review method used narrative review by identifying and summarizing previously published articles, avoid duplication of research, and look for new fields of study that have not been studied. The literatures are focused on three things such as (1) Mobile LMS theory, concept and approach, (2) Mobile LMS design and framework, and (3) Mobile LMS implementation. From articles researching about Mobile LMS published in reputable journals, there are 17 purposive selected papers. Based on the literature review, the Mobile LMS framework has not been integrated into devices and operating systems. Therefore, the author developed a Mobile LMS framework design based on Multiplatform, which is integrated by device and operating system based on references that have been used by previous researchers. This new Mobile LMS framework can be a reference for teachers and future researchers.

**KEYWORDS:** Design, Mobile LMS, New Framework, Implementation, Theory.

### 1. INTRODUCTION

The requirement to continue to carry out learning during the Covid-19 Pandemic makes teachers have to use online-based learning media. Online-based learning becomes a new habit and option after the pandemic by considering its effectiveness and efficiency. However, the quality of online-based learning must be able to match or be expected to exceed the effectiveness of direct learning in achieving the learning objectives that have been set. Mobile Learning Management system (LMS) is one of the media becoming the main tool in online-based learning [1]. The use of Edmodo-based mobile LMS on dynamic fluid materials can increase the interest and achievement in learning physics for high school students [2]. The results of students' abilities on multiplatform LMS, google meet and google classroom are in the good category [3]. Tthe use of mobile LMS student involvement is very important in creating quality learning. The teacher's involvement is in directing the correct use either for the nature or level of use [4].

Utilization and integration of technology become the main challenges of the 21<sup>st</sup> century on how to achieve learning objectives [5]. Online learning can support students' independence, commitment, communication and collaboration as an effort to build the effectiveness of active and meaningful learning, although it has not been able to run optimally [6]. Therefore, it is expected every education provider can prepare educators who are able to use various types of technology to achieve content targets effectively and create more learning opportunities for students [7]. Through mobile learning, users can access learning content anywhere and anytime without having to visit a certain place at a certain time. The use of mobile devices among students can have a positive impact in achieving learning objectives [8].

Mobile learning is very promising in the development of education in the future. Mobile technology has a very promising potential in order to create new experiences in learning [9]. Mobile learning can facilitate communication between educators and students to be active in the classroom by helping students build the required communication [10]. Mobile LMS provides an opportunity to combine and connect technology and education in learning [11]. Thus, it is expected that teachers can collaborate with various parties to be able to create a learning environment that can create a good learning atmosphere for students in the future. It can be carried out by nomadic students, institutions, children and adult users and various independent learning environments. So that, a new generation of distance learning (Mobile LMS) will be built. It can be used to solve traditional learning



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system problems. When using Mobile technology, the user plans, organizes, executes and evaluates his learning because he is the controller of the mobile based activities. Thus, the learner is not a passive person who takes the required information, but he or she is a person who uses cognitive and mega-cognitive abilities to achieve tasks. So, users improve higher order thinking skills [12]. The designed mobile LMS includes complete and well-defined technical quality aspects for the development of mobile learning [13]. The quality of the mobile learning system, based on the views of 392 university students, affects the success of mobile learning [14].

The current Mobile LMS is not a multi-platform based and operates only on certain operating systems, so, there are limitations in use. The operating system used is very diverse ranging from Android and IOS. Therefore, a multi-platform-based Mobile LMS is needed. The literature review in this article aims to produce a multi-platform-based mobile LMS framework design developed to fix the shortcomings of pre-existing LMS cars. The study focuses on the following three things:

1. Theories, concepts and approaches of Mobile LMS
2. Design and framework of Mobile LMS
3. Exploring LMS implementation

## 2. METHOD

The literature review approach used in this article was a narrative review. It aims at to identify and summarize previously published articles, avoid duplication of research, and look for new fields of study that have not been studied [15]. Articles were searched through the Scopus database with the keywords "Mobile LMS" and "multiplatform". The authors find and analyzes 17 articles focused on discussing mobile LMS.

For each article, the abstract and methods section were read to ensure the article met the research criteria so that the researcher could perform data analysis. The researcher checked whether there was methods section in each article. Then, each article was assigned based on its research methodology: quantitative, qualitative, mixed and literature study. An article is called qualitative if the data collected is qualitative; or the data are in the form of a narrative without using statistics or quantitative data. In addition, an article can be called quantitative: if there is the word quantitative in the abstract, method, or data collection section; or/and the data collected contains quantitative data or reported by using any quantitative method. If a research methodology that aims to collect and extract the essence of previous research and analyze some of the overviews of experts written in the text [16] an article is coded as mixed methods: if data are collected from quantitative and qualitative sources; and data for qualitative and quantitative sources are reported in the results section [17].

**Table 1. Articles and Method for Each Topic**

Topics	Method	References
Therory, concept and approach Mobile LMS	Mix-method dan Library research	Ozan (2013) Siemens and Conole (2011) Tura, Kutvonen, and Ritala (2018)
Design of Framework Mobile LMS	Quantitative, Qualitative, Mix-method and Library research	Hemabala (2012) Kumar(2019) Gorbunovs (2018) Ruipérez-Valiente (2020) Tura (2018) Navarro (2012) Hussein (2022)
Implementation of Mobile LMS	Quantitative and Qualitative,	Al-Fahad (2009) Kabir (2017) Añonuevo (2019) Ozkan (2020) Khatser (2022) Gorbunovs (2018) Smith (2018)

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## 3. RESULT AND DISCUSSION

### 3.1 Theories/Concepts, and Approaches

The concept of scaffolding and the connectivism approach can be used together to meet the needs of Mobile LMS. Behavior theory, connectivism and constructivism develop a learning view of the environment. However, learning is turning into an informal, connected, and technology-enabled arena. It is even emphasized that connectivism is a learning theory in the digital era, stating that learning is a process of connecting certain nodes or sources of information with students that can improve their learning by connecting with existing networks [18] [19]. Overall, platform design framework (from conceptualization to application uses 1) platform architecture, 2) value creation logic, 3) governance, and 4) platform competition). The research shows that in the design of the DORA platform, which has unique competitive features in integrating information. The key technology of the DORA platform is collaboration while the development and innovation consists of the ecosystem and policy platform [20]. Mobile learning used by several groups of students to be adopted by Moroccan universities. The findings of this study indicate that most Moroccan students have a positive perception of m-learning. This perception makes them believe that the adoption of the mobile learning model should be well-received by Moroccan universities [21].

### 3.2 Design/Framework

LMS system design can improve students' knowledge, performance, achievement, problem solving skills and individual learning systems. The LMS design consists of learning content, learning evaluations, learning modules, web servers and mobile devices (mobile phones, laptops, notebooks, smartphones and PDAs). This design can be implemented online and offline both on campus and off campus activities [1]. The adoption of learning with mobile LMS, which is most popularly used among students is smart phones, tablets and laptops. Attitude, intention, convenience of use, enjoyment, experience, usefulness, learning ability, personal and social are the main factors influencing the adoption of learning. Other factors that have minimal impact are interest, technology, financial and pedagogical factors [22].

The concept of an adaptive LMS for New Generation allows it to meet the special needs of students based on the previous level of students' knowledge, activities and behavior patterns during learning. The prospective information system aims to increase the motivation and engagement of LMS users in the knowledge acquisition process by recommending them appropriate content and personalized learning paths that best suit the needs of learners. Personalized feedback about students' learning progress increases their involvement in the learning process. Students can review the objects and types of learning offered, as well as suggested learning paths based on their level of proficiency [23].

The research results have developed a framework for platform design involving four elements: 1) platform architecture, 2) value creation logic, 3) governance, and 4) platform competition. This platform's design framework provides an empirical illustration of design choices in DORA's Mobility-as-a-Service (MaaS) platform providing changes to the value creation model, especially market characteristics and network effects [20].

### 3.3 Implementation

Learning with mobile can understand, measure students' attitudes and perceptions, and can improve student memory [8]. This technology can be used anytime and anywhere. Furthermore, this approach can adopt a mobile learning system with the aim of improving communication and enriching student experiences in open and distance learning.

Learning using LMS in a local Nigerian environment provides distance learning transformation from an e-learning system to mobile learning using technology in learning where a location context that can be done everywhere. The results show that in Nigeria teachers are aware that mobile devices in education can transform classroom learning to other locations, such as home, office, market, company, and provide opportunities for educational groups, personal development and improvement as they master learning challenges, life challenges and work [24].

Design, develop and create a mobile notification system function for high school LMS such as Saint John Colleges, Calamba City, Laguna aims to provide information to parents about activities that are being carried out by students, current events, and announcements through the built-in timeline interface, e-mail also provides an administrative dashboard that manages student activity, including account additions and updates, class sessions, courses and other interface tools. Respondents strongly agree that using Mobile LMS will help users in managing, and knowing information about school activities and other activities [25].

The LMS special portal using Moodle and ANN to support face-to-face learning in vocational schools gives a positive response and it is accepted by students. The effect of student acceptance on LMS is very important in the learning environment. So, JST can be used conveniently in other technology acceptance studies and contribute to understanding the factors that affect student or student acceptance. The results of the analysis state that performance expectations, effort, social influence, and conditions that facilitate the use of LMS are important predictors of student behavior goals. From performance expectations found

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the most influential predictor of LMS acceptance [26]. This finding is in line with the finding that performance expectations have a direct influence on the goals of using the LMS [27] [28].

The results of research that examines several aspects of the features available in online learning. A survey was conducted of educators to identify LMS that are frequently used in their professional practice. Based on the data obtained, this article examines two LMS, Canvas and Moodle, in terms of efficiency and ease of use for educators and students. The results of the study have shown that the Canvas interface is more intuitive and flexible while the Moodle interface requires knowledge of basic programming and working principles of PHP. Canvas is more accessible and the navigation is simpler compared to Moodle [29]. Research presenting a model to evaluate the factors influencing educators in using Mobile LMS. The research objective is to develop component-based software that produces reusable components, with high quality and cost-effectiveness. The software components are also based on the needs of students. The findings of this study are component-based software development that is able to produce software that is easy to reuse and it has high quality and saves time. The flexibility of e learning software, which causes the software to operate on many devices. FUOLC's e-learning software based on multiplatform components has a simple and easy-to-understand program structure. The components have an integrated unit and can adapt to electronic devices that have their own platforms. FUOLC has the ability to be reused and has maintenance qualities, thus meeting the needs of students and lecturers [23].

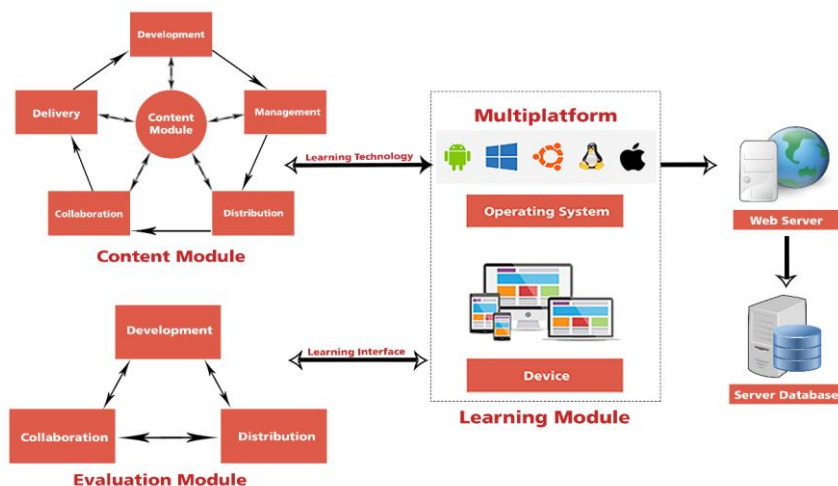
The results of a study examining the participation and involvement of MOOC providers in the Arab world, and comparing global settings MITx and HarvardX with regional provider Edraak show that there are a slight educational and gender gap among young local residents. It is also found that MOOCs are trending more than global providers (MITx and HarvardX). Furthermore, there is a difference in participation and engagement between the edX platform and the Edraak platform. The survey results also show that Edraak's students' preference for Arabic content is an important factor for students [30]. Besides, research results providing tools for multiplatform users can distinguish changes that occur in learning based on statistics. The results show that different types of children's learning require different strategies to encourage student growth [31]. The development of the virtual campus shows that the multitier architecture is chosen to be used because of its ease of maintenance. The findings of this study have been tested for several years at UCM VC [32]. Research that developed an e-spelling system supported by sign language and finger language techniques show that the e-spelling system is easy to use by deaf students [33].

From several journals that have been analyzed, it shows that most of the research results provide theories, concepts, designs/frameworks and implementations of mobile LMS. The results of the theory and design can provide the concepts of learning, constructivism, behavior and connection. The results of the article review for the category of Mobile LMS implementation show that mobile LMS is an appropriate learning tool for online learning. The Mobile LMS learning tool has been used by various levels of education units but tends to be used by universities with different platforms.

At the secondary school level, it is rarely studied about the multiplatform-based LMS model. Besides, the research also produces new findings that describe a multiplatform-based mobile LMS framework. The multi-platform-based M-LMS framework can be used as a teacher reference in mobile LMS management. Multiplatform is an application that can run on all operating systems. Multiplatform on information technology is a system that can support various types of other communication devices, not only on PC computers or laptops that are used, but it can be used on mobile phones with Android, BlackBerry and IOS operating systems. The implementation of learning using Mobile LMS in Nigeria shows success in learning. Mobile LMS provides scaffolding to learners in a mobile connectivist learning environment: (a) online learning, (b) to manage the network learning process, and (c) to interact in the network [24].

The design of the Mobile LMS framework based on multi-platform consists of learning content, learning modules and learning evaluations and knowledge interfaces that support online learning systems. Learning content can be divided into five authoring tools such as content development, content management, content distribution, content collaboration and content delivery. The design of the multi-platform-based Mobile LMS framework can be seen in Figure 2.

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**Fig. 3. Multi-platform based Mobile Learning Management System framework**

From figure 2, it can be explained that the multiplatform-based M-LMS framework consists of learning content, learning evaluations, learning modules, web servers and mobile devices (mobile phones, laptops, notebooks, smartphones and PDAs) that can move on all operating systems and all devices. To use Mobile-LMS, a web server is needed to manage learning content, evaluation of learning and M-LMS users (teachers and students). In the setting of learning content, the teacher can download and search what is needed in the learning process. Besides, the teacher can develop learning based on words or text, images, audio, video, graphics and animation. Students also gain more ability to solve new problems, new ideas and strengthen their knowledge. For the delivery can be done through the database server and web server, the database server contains the login address and password, they immediately get details about their personal information and school schedules. The collaboration section is used to share knowledge and experiences between teachers and other students. The delivery department can act as mobile-content that can be accessed via wireless networks such as wi-fi, Bluetooth using equipment (web-based learning) such as PDAs, notebooks, tablets, laptops and smartphones. In the learning evaluation section, the teacher is able to organize and share knowledge with students. So that, students can access that knowledge through a network using a mobile device. Then, the multiplatform-based Mobile LMS framework is expected to provide solutions in online learning and becomes a reference for teachers in managing and teaching online.

#### 4. CONCLUSION

Based on the results of 7 journals reviews including 17 papers, the authors conclude that there are three articles showing theories, concepts and approaches to Mobile LMS Ozan (2013), Siemens and Conole (2011), Tura, Kutvonen, and Ritala (2018); seven articles designing the Mobile LMS design or framework (Hemabala (2012), Kumar(2019), Gorbunovs (2018), Ruipérez-Valiente (2020), Tura (2018), Navarro (2012), Hussein (2022), and 7 articles exploring the results of the implementation of Mobile LMS Al-Fahad (2009), Kabir (2017), Añonuevo (2019), Ozkan (2020), Khatser (2022), Gorbunovs (2018) and Smith (2018). Based on the research method, the method used are for example: 1) Quantitative Method, 2) Qualitative method, 3) Mixed Method, and 4) Literature study method where six papers using quantitative research methods, four using mixed methods papers, five using qualitative method papers and two papers using library research methods. Research using quantitative methods is found in the articles of Ozan (2013), Siemens and Conole (2011), Tura, Kutvonen, and Ritala (2018). Research using a mixed methodology are Hemabala (2012), Kumar(2019), Gorbunovs (2018), Ruipérez-Valiente (2020), Tura (2018), Navarro (2012), Hussein (2022). The papers using qualitative methods are Al-Fahad (2009), Kabir (2017), Añonuevo (2019), Ozkan (2020), Khatser (2022), Gorbunovs (2018), Smith (2018) while Kumar(2019) and Siemens and Conole (2011) using the literature study method. From 17 papers, it shows that the theories, concepts and approaches produced are the theories of connetivism, constructivism and mobile LMS adaptation. The category of mobile LMS implementation has provided a good gap and involvement for teachers and students besides there are still mobile LMS that need to be managed properly. Then, for the Design category, the designed LMS framework has provided a good gap and engagement, but it has not been able to move on all platforms. Then, for the design category or framework, the Mobile LMS framework can be used by all devices, but it cannot move on all operating systems. This finding distinguishes the results of this study from previous studies. From the research results, it is necessary to realize a multi-platform-based Mobile LMS framework that can run on various devices and operating systems.

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## Evaluating the Quality of Indonesian English Teachers' Research Reports on the Guru Berbagi Platform



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**ABSTRACT:** This study aimed to evaluate the quality of research-based activities reported by English as a Foreign Language (EFL) teachers on the Guru Berbagi Platform, using the Six-Trait writing method developed by Spandel and Stiggins (1990). Employing a descriptive qualitative research methodology, four articles were scrutinized for this investigation. The analysis uncovered a range of methodologies applied by the teachers in their research activities, all targeted towards exploring language learning and teaching. Certain areas identified for improvement in writing quality were the need for more supporting evidence, improved word choices, inclusion of conclusive sections, varied sentence structures, and enhanced attention to writing conventions. This study underlined the importance of ongoing professional development for EFL teachers, especially in areas such as effective academic writing techniques and argumentation supported by solid evidence. However, this study had certain limitations such as a small sample size and potential subjective interpretation of the articles, attributed to the qualitative nature of the research. Future research is encouraged to encompass a larger, more diverse selection of articles and integrate a rubric-based evaluation to yield more objective and reproducible results. Participation in peer-review processes was also suggested for teachers to promote enhancement in their writing skills and overall content quality.

**KEYWORDS:** English Teacher Research Reports, Guru Berbagi Platform, Writing Skills of Indonesian EFL Teachers

### I. INTRODUCTION

Effective writing skills hold a critical role in the field of education, particularly for English as a Foreign Language (EFL) teachers. The act of writing transcends teaching language skills, extending to the documentation and dissemination of research findings, pedagogical strategies, and valuable classroom experiences (Phillips & Genao 2023). This communication is not limited to peers but expands to the wider academic community. Effective, high-quality writing hence forms the backbone of knowledge dissemination, ensuring that the unique insights gleaned from research and experience can influence teaching practices on a broader scale (Farrell, 2020; Machost & Stains, 2023). Moreover, writing facilitates reflective practice among EFL teachers, enabling them to articulate and critically examine their methodologies and experiences. This reflective writing process invariably leads to the identification of strengths, weaknesses, and areas ripe for improvement, thereby fostering continuous professional growth and development (Gerhardt, 2019). Beyond knowledge dissemination and reflection, writing serves as a key communication tool within the academic sphere. Clear, effective written communication allows EFL teachers to actively participate in professional dialogues, contribute to academic discourses, and engage in fruitful collaborations. Further, the quality of a teacher's writing skills can directly impact teaching and learning outcomes (Utami & Viozeza, 2021). For teachers, the process of writing promotes clearer thinking, aiding the development of more effective teaching strategies. For students, teachers who can write well are better equipped to provide clear instructions, articulate complex ideas, and provide constructive feedback. This interconnectedness between effective writing and enhanced teaching and learning outcomes highlights the need for a focus on writing skills in teacher development programs. One of the place to disseminate the result of teachers' research is Guru Berbagi platform.

The Guru Berbagi Platform plays an integral role within the educational landscape of Indonesia. As an innovative online initiative, it aims to bolster the capacities of teachers by facilitating a collaborative environment conducive to knowledge sharing. The platform is primarily designed to allow educators to write, publish, and disseminate their research work, fostering a sense of community and encouraging the implementation of research-based practices. By providing a dedicated digital space, the Guru Berbagi Platform propels an education-centric dialogue that promotes the exchange of best practices, methodologies, and novel teaching techniques. It is a place where teachers' contributions not only reach their peers but also impact a broader academic

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community, fostering the spread of valuable insights and pedagogical innovations. This continuous process of knowledge sharing and collaboration results in professional development, fostering a culture of lifelong learning among educators. Teachers actively engaged in research activities have reported noticeable improvements in their teaching quality, as they reflect on their methods, evaluate their effectiveness, and make necessary adjustments based on research outcomes. This culture of continuous improvement aids in the overall enhancement of teaching quality, subsequently contributing to the advancement of education as a whole. The Guru Berbagi Platform's significance lies not only in its ability to facilitate teacher development but also in its potential to drive educational reform. By promoting research-based practices, it positions teachers at the forefront of innovative education solutions. Through their active engagement in research, teachers bridge the divide between theoretical knowledge and the practical realities of the classroom, translating abstract concepts into effective teaching methods and interventions. This role of teachers as researchers underscores the importance of their ability to communicate findings effectively, further emphasizing the need to enhance their research writing skills.

Previous research has underscored the importance of teachers' writing skills in influencing education quality. Paul et al. (2021) and Chakma et al. (2021), for instance, elucidated the pivotal role of effective writing in disseminating complex ideas and articulating research findings. Studies by Oliveira et al. (2021) revealed the challenges many educators face in producing high-quality research reports, including time constraints and a lack of dedicated research time and writing skills. These barriers have been identified as detrimental to the effectiveness of research reports and the transfer of valuable insights into classroom teaching. Moreover, research engagement by teachers, such as action research or collaborative inquiry, has been identified as a significant driver of professional development and personal growth (Boud et al., 2021; Rutten, 2021). Several studies have documented the benefits of such active engagement, including the refinement of teaching practices and improved student outcomes (Manfra, 2019; Putz et al., 2020). However, while these studies offer valuable insights into the role of research and writing in teaching, there is a gap in understanding the characteristics and quality of teacher research reports on platforms like Guru Berbagi. This gap in the literature is particularly noticeable concerning teachers' research writing skills, as observed by MacPhail & Bimpong (2019) and Murtadho (2021). While they noted that some teachers face significant challenges in honing their writing skills, little research has been conducted to scrutinize the research-based activities of teachers on collaborative platforms like Guru Berbagi through the lens of writing skills. This research aims to address these gaps by examining the research reports of Indonesian EFL teachers on the Guru Berbagi platform. Specifically, the study will analyze the methodologies used by the English teachers in their research activities and the quality of English teacher research reports in terms of writing skills. In line with the aforementioned aims the research seeks to answer the following questions:

1. What are the various methodologies used by the English teachers in their research activities as reported on the Guru Berbagi Platform?
2. How is the quality of English teacher research reports in terms of writing skills?

## II. LITERATURE REVIEW

### Teachers' Writing Skill

Effective writing skills are essential for teachers to communicate their ideas, knowledge, and instructions clearly to their students. Writing skills are also crucial for teachers to develop their own knowledge and understanding of their subject matter (Rathert & Okan, 2015). Teachers with strong writing skills are better equipped to create lesson plans, design assessments, and provide meaningful feedback to their students (Haryani et al., 2019). Furthermore, they can model effective writing practices for their students, which can enhance students' writing skills and academic performance. According to research, the writing skills of teachers can vary widely and are often inadequate (Iwai et al., 2019). A study by Tindowen et al., (2019) revealed that many teachers experience writing anxiety, particularly when it comes to analyzing data and using proper grammar. Additionally, Nizar et al. (2020) found that while most teachers are familiar with action research, many do not write because they are unsure of how to start or lack practice. Marmoah, et al., (2020) also reported that teachers find writing difficult, as there are many elements to master before even beginning to write. Writing scientific papers requires specific knowledge and guidelines, which can be overwhelming for some teachers. Furthermore, a study by Hasanah and Sulha (2022) found that many teachers lack a clear understanding of writing techniques. In conclusion, these studies suggest that teachers face a number of challenges when it comes to writing, including anxiety, lack of practice, and difficulty mastering the necessary skills and techniques

### Components of Writing in a Research Article

Writing a research article is a complex process that requires attention to several important components. Each of these components must be carefully crafted to ensure that the article is of high quality and effectively communicates the research findings to the audience. The abstract, for instance, is a brief summary of the article that needs to be concise, accurate and



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informative. It must contain information about the research question, methods, and main findings, and should also include keywords that help others find the article in databases. As suggested by Alpcan (2019), the abstract should excite and motivate the readers to read the rest of the paper, and follow a specific template that includes the background and motivation, problem addressed, model, approach and methods, exciting main results, and implications or importance of the contributions/results.

The introduction is another critical component of a research article, as it provides the necessary background information and outlines the research problem. According to Ramadhanty (2022), the introduction should employ the moves and steps of the CARS model proposed by Swales (2004), which includes establishing the territory, establishing a niche, and occupying a niche. The literature review must also critically evaluate existing research on the topic, as stated by Parajuli (2020), which includes description, summary, and critical evaluation of scholarly works. The methodology must provide a clear and detailed explanation of how the research was conducted. As reported by Patel and Patel (2019), researchers need to know which methods or techniques are relevant to their research, understand the assumptions underlying various techniques, and know the criteria by which they can decide which techniques and procedures are applicable to their research problems.

Finally, the results should be presented in a clear and organized manner, with appropriate statistical analysis where necessary. As advised by Hanelt et al. (2021), only results that are pertinent to the article's objectives should be included. When discussing the results, it is essential to build the analysis with the help of references available or common trends, and the discussion needs to be analytical, not judgmental. Exaggerative language should also be avoided while writing a discussion. By paying attention to each of these components, researchers can ensure that their research articles are of high quality, informative, and effective in communicating the research findings to the audience.

In conclusion, writing a research article requires attention to several critical components, including the abstract, introduction, literature review, methodology, results, discussion, and conclusion. Each of these components has specific requirements that must be met to ensure that the article is informative and effectively communicates the research findings to the audience. Writing a clear and concise abstract, a well-structured and justified introduction, a critical literature review, a detailed and clear methodology, a well-organized and statistically analyzed results, and a well-analyzed discussion can help researchers to produce high-quality and effective research articles.

### III. RESEARCH METHOD

#### Research Design

In this study, we use a qualitative research design and a case study approach as advocated by Lambert and Lambert, (2012) to deeply explore the research-based activities reported by English language teachers on *Guru Berbagi*. This online platform, specifically designed for Indonesian educators, enables them to share a wide range of educational resources and innovative teaching practices. By focusing on this platform, we aim to glean insights into how teachers' active engagement in research activities influences their writing skills. The use of a case study approach allows for a detailed examination of specific instances of research engagement, thereby providing a nuanced understanding of the challenges and successes teachers face while improving their writing skills through research activities.

#### Data Collection Procedure

In this study, we meticulously curated and analyzed eight research reports authored by English teachers and published on *Guru Berbagi* between 2020 and 2022. However, to address language proficiency concerns, only four articles written in English were included in our final analysis. The data collection process involved a systematic review of articles published on *Guru Berbagi*, with a specific emphasis on articles related to English language teaching and learning. More particularly, we focused on articles reporting research-based activities aiming to enhance students' language skills.

The selection criteria stipulated that articles must be written in English and report on activities explicitly designed to improve students' language skills. Those articles not meeting these parameters were not included in our review. After the selection process, we thoroughly perused the chosen articles to extract information pertinent to our research questions. This encompassed identifying the structure of the articles, their research questions, methodologies employed, and the findings reported. The extracted data was then synthesized and analyzed to provide nuanced insights into the nature and impact of the research-based activities reported by English teachers on the *Guru Berbagi* platform. This information will help elucidate the influence of research engagement on teachers' writing skills, thereby contributing to our understanding of how to support and enhance writing capabilities among educators.

This research study employed the Six-Trait writing method, developed by Spandel and Stiggins (1990), to evaluate the writing skills of teachers and the quality of their research reports. The Six-Trait framework utilizes a rubric consisting of six distinct writing traits: Ideas & Content, Organization, Voice, Word Choice, Sentence Fluency, and Conventions. Each trait is assessed using

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a scoring scale that outlines specific criteria for evaluation. To gain further insights into the quality of writing, including aspects such as grammar, spelling, sentence structure, vocabulary usage, and overall readability, the study utilized Turnitin, a text analysis and evaluation tool. Turnitin facilitated a comprehensive assessment of the research reports, providing valuable feedback on various writing elements. To ensure the validity and reliability of the assessment process, the study sought expert consultation from a writing assessment specialist or a language testing expert. This expert input helped validate the quality of the rubric and ensured that the assessment methods used in the study were rigorous and consistent. By conducting a comprehensive evaluation of the teachers' writing skills and the quality of their research reports, this study aims to contribute to effective writing practices in the field of English language teaching. The findings have the potential to inform strategies for enhancing teachers' writing proficiency and promoting high-quality research writing in the context of English language education.

### IV. FINDINGS AND DISCUSSIONS

#### Findings

Our research findings were classified into two main aspects. The first finding involved the methodologies used by the English teachers in their research activities. The second finding pertained to an assessment of the English teachers' research reports, with a specific focus on the characteristic quality of their writing skill. Each of these findings is explained with additional details in the following sections:

#### a. The methodologies used by the English teachers in their research activities

Our study examined research activities reported on the *Guru Berbagi* Platform from the years 2020 to 2022. We meticulously collected and analyzed relevant articles, presenting comprehensive details such as the year of publication, article title, composition, research questions, methodology, and findings. For a more detailed overview, please refer to appendix 1, which provides a comprehensive summary of the identified research activities and their respective characteristics.

The research activities reported by the teachers, as shown in appendix 1, reflected a common theme of improving language skills among students. However, they differ in terms of the specific methodologies employed. AP's study on enhancing secondary students' writing skills through Project-Based Learning followed a quasi-experimental research design. This methodology involved comparing the outcomes of a control class (presumably taught using a conventional model) with an experiment class (taught using Project-Based Learning) to determine the effect of Project-Based Learning on students' writing skills. This design allowed for a comparison between different instructional approaches, providing valuable insights into the effectiveness of Project-Based Learning in enhancing writing skills.

In contrast, EK's research focused on eighth graders' ability to write descriptive texts and the challenges they encountered, particularly related to the appropriate use of adjectives. The methodology employed in this study involved data collection through assigned writing tasks. Students were given specific prompts or topics to write descriptive texts, and their written compositions were analyzed to assess their writing ability and identify areas of difficulty, especially in the use of adjectives. This methodology provided a direct assessment of students' writing skills and enabled the identification of specific areas for improvement.

Moving on to BNR's research, the objective was to stimulate students' vocabulary building through collaborative reading. Unlike the previous studies, this research did not follow a clearly defined structure with separate sections for introduction, literature review, and findings. Instead, the study adapted collaborative reading as the main source of vocabulary enrichment for year 9 students. The methodology likely involved implementing collaborative reading activities in the classroom and assessing the impact on students' vocabulary development. While the article lacked a traditional structure, it emphasized the benefits of collaborative reading activities for vocabulary building, highlighting the cognitive and psychological advantages for students in the English learning class.

Lastly, RA's study explored the usage of English comic online to improve students' reading skills, employing a case study approach. This methodology involved focusing on a specific group of 10th-grade students at SMA Kasih Immanuel School. The researcher conducted teaching activities in the classroom, using English comic online as a tool, and collected empirical data through observations, assessments, or other means. The case study approach allowed for an in-depth exploration of the phenomenon or problems occurring in the classroom and provided insights into how the usage of English comic online influenced students' reading skills.

In summary, the teachers' research activities showcased different methodologies applied to investigate language learning and teaching. AP's study used a quasi-experimental design, EK's research employed data collection through assigned writing tasks, BNR's study adapted collaborative reading without distinct sections, and RA's research utilized a case study approach. These

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methodologies offered diverse perspectives and approaches to explore various aspects of language skills enhancement, providing valuable insights into effective instructional strategies and areas for improvement.

### b. The quality of English teacher research reports in terms of writing skill

In addition to the research activities reported by the teachers, another aspect of our research aimed to assess the quality of these activities as reported on *Guru Berbagi* by EFL teachers. To evaluate the quality, each teacher's paper was carefully examined using the six traits writing framework proposed by Spandel and Stiggins (1990). This framework assesses the clarity, organization, voice, word choice, sentence fluency, and conventions of the written work. The results of this examination, which provides insights into the strengths and areas for improvement in the teachers' papers, are presented in the following table accordingly. This assessment of the quality of the research activities adds an additional layer of analysis to the findings of our research.

**Table 3. The paper of written by AP entitled "Enhancing the Secondary Students' Writing Skills Through Project Based Learning"**

Traits	Description	Score
Ideas	The paragraph presents the author's opinion on the topic of writing skills through project based learning in a clear and concise manner. However, there is no supporting evidence or examples provided to back up the author's opinion. So, the ideas in the paragraph are somewhat limited in scope and depth.	4/5
Organization	The paragraph has a clear structure, with a topic sentence followed by a supporting sentence. However, there is no conclusion or summary to tie the paragraph together and make it feel more complete	4/5
Voice	The author's voice is clear and straightforward. However, there is not much personality or style in the writing, so the voice is somewhat flat and unengaging	3/5
Word Choice	The word choice in the paragraph is appropriate for the topic, but there is not much variety or creativity in the language used. So, the word choice is somewhat limited and repetitive	3/5
Sentence Fluency	The sentences in the paragraph are mostly short and simple, which makes the paragraph easy to read and understand. However, there is not much variety or complexity in the sentence structure, which can make the paragraph feel repetitive and dull	3/5
Conventions	The paragraph follows the basic rules of grammar and punctuation, with no major errors or mistakes	2/5

The analysis of the result scores for each trait provided a comprehensive understanding of the quality of the paragraph. In terms of ideas, the paragraph received a score of 4 out of 5, indicating that the author's opinion on the topic of writing skills through project based learning was presented clearly and concisely. However, the lack of supporting evidence or examples restricted the depth and scope of the content, suggesting a need for more substantiation. Moving on to organization, the paragraph demonstrated a clear structure with a topic sentence followed by a supporting sentence, which contributed to its score of 4 out of 5. However, the absence of a conclusion or summary left the paragraph feeling somewhat incomplete, lacking a cohesive ending that would have tied the ideas together and provided a sense of closure. Examining the voice of the paragraph, it received a score of 3 out of 5. While the author's voice was clear and straightforward, there was a noticeable absence of personality or style in the writing, resulting in a somewhat flat and unengaging tone. Injecting more distinctiveness and personal flair into the voice would have enhanced the overall impact and reader engagement. The word choice in the paragraph scored 3 out of 5, indicating that the chosen words were appropriate for the topic of leadership. However, there was limited variety or creativity in the language used. Expanding the range of vocabulary and incorporating more imaginative and expressive word choices would have added depth and richness to the paragraph. The sentence fluency of the paragraph also received a score of 3 out of 5. The predominance of short and simple sentences made the paragraph easy to read and understand. However, the lack of sentence variety and complexity could have led to a sense of repetition and dullness. Incorporating varied sentence lengths, structures, and rhythms would have created a more engaging and dynamic flow. Lastly, the paragraph's conventions scored 2 out of 5. While it generally followed basic rules of grammar and punctuation, some minor errors or mistakes were present. Improving attention to detail and conducting thorough proofreading would have helped ensure better adherence to conventions, enhancing the overall clarity and professionalism of the writing.

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In summary, the analysis revealed a mixed picture of strengths and areas for improvement. The paragraph effectively presented ideas but required more supporting evidence. It demonstrated a clear organizational structure but lacked a concluding section. The voice was clear but could have benefited from added personality and style. The word choice was appropriate but lacked variety and creativity. The sentence fluency was generally smooth but would have benefited from more diverse and complex structures. Finally, while the conventions were generally followed, further attention to detail was needed. Addressing these areas would have contributed to a more polished and impactful paragraph.

**Table 4. The article written by EK entitled The Eighth Graders' Writing Ability of Writing Descriptive Texts and Their Problems of Using Appropriate Adjective at SMPN 21**

Traits	Description	Score
Ideas	The writer has presented a clear and engaging central idea, which is supported by relevant and strong supporting details. The examples provided are specific and effectively illustrate the main theme of the piece	5
Organization	The writer has organized the content in a logical and creative manner, which makes it easy for the reader to follow. The writing has a clear structure with a well-developed introduction and conclusion. The transitions between the paragraphs are smooth and well-crafted	5
Voice	The writer has successfully conveyed their personality and sense of audience through the writing. The voice is expressive, engaging, and sincere, and shows a commitment to the topic. However, the personality is inconsistent at times and the writing could benefit from a more consistent and engaging voice throughout	4
Word choice	The writer has used a broad range of descriptive words and phrases to energize the writing. The language is functional and appropriate to the audience and purpose of the writing. However, there are a few instances where descriptions are overdone and some words are mundane and could be replaced with more precise language	4
Sentence fluency	The writer has shown a good degree of craftsmanship in the writing, with an effective variation in sentence patterns and structure. The writing flows smoothly with a good rhythm, but there are some awkward constructions and occasional choppy sentences.	4
Conventions	The writer has demonstrated a strong control of standard conventions of writing, including spelling, punctuation, and grammar, with only a few minor errors. However, there are occasional errors with high risk and some significant errors that may impede readability	4

The analysis of the result scores for each trait reveals a trend in the quality of the writing piece. In terms of ideas, the writer's presentation of a clear and engaging central idea, supported by relevant and strong details, earned a perfect score of 5. The examples provided were specific and effectively illustrated the main theme, further enhancing the quality of the writing. Moving on to organization, the writing demonstrated a high level of proficiency, scoring 5 out of 5. The content was organized in a logical and creative manner, making it easy for the reader to follow. The clear structure, with a well-developed introduction and conclusion, added to the coherence of the piece. Additionally, the transitions between paragraphs were smooth and well-crafted, contributing to the overall flow and coherence. Regarding voice, the writer successfully conveyed their personality and sense of audience through the writing, resulting in a score of 4 out of 5. The voice was expressive, engaging, and sincere, showing a commitment to the topic. However, there were moments of inconsistency that slightly affected the overall engagement. Maintaining a consistent and engaging voice throughout the piece would have further enhanced the writing. In terms of word choice, the writer demonstrated a broad range of descriptive words and phrases, earning a score of 4 out of 5. The language used was functional and appropriate for the intended audience and purpose. However, there were a few instances where descriptions were overdone, and some words were mundane, suggesting opportunities for improvement by replacing them with more precise and impactful language. The sentence fluency of the writing received a score of 4 out of 5. The writer exhibited a good degree of craftsmanship, incorporating effective variation in sentence patterns and structure. The writing flowed smoothly with a good rhythm, although occasional awkward constructions and choppy sentences were present. Further refinement in these areas would have contributed to even stronger sentence fluency. Lastly, in terms of conventions, the writer demonstrated a strong command

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of standard writing conventions, scoring 4 out of 5. Spelling, punctuation, and grammar were generally accurate with only minor errors. However, some high-risk errors and significant errors were observed, which may have had a slight impact on readability.

In summary, the analysis highlights a consistent trend of strong performance across most traits, with ideas and organization standing out as particular strengths. The writer effectively communicated a clear central idea with robust supporting details, while the organization and structure of the piece were highly effective. Opportunities for improvement lie in maintaining a consistent and engaging voice, refining word choice for precision and impact, smoothing out occasional sentence construction issues, and ensuring further precision in conventions. Overall, the writing piece exhibits a high level of proficiency, with a few areas that could be enhanced for even greater coherence and impact.

**Tabel 5. The article written by BNR entitled Stimulating Students' Vocabulary Building through Collaborative Reading**

Traits	Description	Score
Ideas	The article presents a clear and well-developed idea, which is the importance of vocabulary acquisition for English language learners and how collaborative reading can support this. The author supports this idea with relevant research and provides detailed explanations of the proposed activities	5
Organization	The article is well-organized with a clear introduction, body, and conclusion. The author uses appropriate transitions between sections and ideas, making the text easy to follow	5
Voice	The author's voice is clear and confident throughout the article. The use of academic language and research-based evidence demonstrates expertise on the topic	5
Word choice	The article uses appropriate academic vocabulary and terminology, demonstrating an understanding of the topic. The author also provides examples and explanations of the vocabulary used, making it accessible to a wider audience	4
Sentence fluency	The article has a good flow and rhythm, with a variety of sentence structures used effectively to convey meaning	4
Conventions	The article has a few minor errors in grammar and punctuation, but these do not detract from the overall clarity and readability of the text	4

The analysis of the result scores for each trait reveals a consistent trend of excellence throughout the article. In terms of ideas, the article received a perfect score of 5, demonstrating a clear and well-developed concept. The author effectively highlighted the importance of vocabulary acquisition for English language learners and supported this idea with relevant research and detailed explanations of the proposed activities. This comprehensive approach enhanced the article's credibility and conveyed a strong message to the readers. In relation to the organization, the article excelled with a score of 5. The author skillfully structured the content with a clear introduction, body, and conclusion. The use of appropriate transitions between sections and ideas further enhanced the article's coherence and facilitated ease of comprehension. This meticulous organization allowed readers to navigate the text smoothly and follow the logical flow of information.

The voice of the author was consistently clear and confident, earning a score of 5. Throughout the article, the author showcased expertise on the topic through the use of academic language and research-based evidence. This authoritative voice not only added credibility to the article but also instilled confidence in the readers, making them more receptive to the author's perspective. In terms of word choice, the article scored 4, indicating the author's adept use of appropriate academic vocabulary and terminology. This demonstrated a deep understanding of the topic. Furthermore, the author's inclusion of examples and explanations helped make the vocabulary accessible to a wider audience, enhancing the overall impact and comprehensibility of the article. Furthermore, the sentence fluency of the article also received a score of 4. The writing exhibited a good flow and rhythm, skillfully utilizing a variety of sentence structures to convey meaning. This diversity in sentence construction added to the article's readability and engagement. Finally, the article received a score of 4 for conventions. While a few minor errors in grammar and punctuation were present, they did not significantly detract from the overall clarity and readability of the text. The article maintained a professional standard, ensuring that the errors did not disrupt the overall effectiveness of the communication.

In summary, the analysis highlights the article's consistent excellence across all traits. The article presented a clear and well-developed idea, supported by relevant research and detailed explanations. It exhibited meticulous organization, a confident voice, and adept word choice. The article's sentence fluency contributed to its engaging nature, while the minor errors in

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conventions did not significantly impact its overall quality. Overall, the article exemplified a high level of expertise and delivered a compelling message to its audience.

**Table 6. The article written by RA entitled "The Usage of Comic Online to Improve Students' Reading Skill"**

Traits	Description	Score
Ideas	The article discusses the importance of reading skill in language education and suggests using English comics as a means to improve reading skills. The ideas are clear and well-presented, but there could be more depth and development of the ideas presented	4
Organization	The article has an appropriate structure, but it is somewhat conventional. There is an attempt at an introduction and conclusion, but they could be more engaging and satisfying. The organization is not confusing, but it could benefit from more creativity and coherence	3
Voice	The article has a sense of personality and audience, but it is somewhat inconsistent or dull. The writer's commitment to the topic is evident, but the voice could be more expressive and engaging.	3
Word choice	The article uses precise and carefully chosen words with strong, fresh, and vivid imagery. The language is descriptive with a broad range of words, and the word choice energizes the writing	5
Sentence fluency	The article demonstrates effective variation in sentence patterns with easy flow and rhythm. However, there could be more variety in length and structure, and there are some awkward constructions	4
Conventions	The article demonstrates a strong control of most writing conventions with occasional errors that do not interfere with understanding. However, there could be more attention to grammar, punctuation, and spelling	4

The analysis of the result scores for each trait reveals a discernible trend in the quality of the article. In terms of ideas, the article earned a score of 4 out of 5. While the discussion on the importance of reading skills in language education and the use of English comics as a means to improve them was clear and well-presented, there was a need for further depth and development in the ideas. Expanding on the concepts and providing more comprehensive insights would have strengthened the article's impact. Moving on to organization, the article scored 3 out of 5. Although it followed an appropriate structure, the approach was somewhat conventional. While an attempt was made at an introduction and conclusion, they lacked the engagement and satisfaction desired. The organization was not confusing, but there was room for more creativity and coherence in presenting the information. A more innovative and compelling organizational framework would have enhanced the overall effectiveness of the article. Regarding voice, the article received a score of 3 out of 5. While there was a discernible sense of personality and audience throughout, the voice was somewhat inconsistent or dull. The writer's commitment to the topic was evident, but a more expressive and engaging voice would have captivated readers and heightened their connection to the material. In terms of word choice, the article excelled with a score of 5. The utilization of precise and carefully chosen words infused the writing with strong, fresh, and vivid imagery. The language employed was descriptive, exhibiting a broad range of vocabulary that invigorated the overall composition. The word choice demonstrated a mastery of language and effectively energized the article. The article's sentence fluency received a score of 4. There was effective variation in sentence patterns, contributing to a smooth flow and rhythm. However, there was room for more diversity in sentence length and structure. Additionally, some awkward constructions were observed, which could have been refined to enhance the overall readability and cohesiveness of the article. Lastly, in terms of conventions, the article achieved a score of 4. It demonstrated a strong command of most writing conventions, with occasional errors that did not impede understanding. However, more attention could have been given to grammar, punctuation, and spelling to ensure a higher level of precision and polish.

In summary, the analysis indicates both strengths and areas for improvement in the article. While the ideas were well-presented, there was a need for further depth and development. The organization would have benefited from a more innovative and engaging approach. The voice could have been more consistent and captivating. On the other hand, the word choice exhibited a mastery of language and energized the writing effectively. The sentence fluency was generally smooth, with room for increased

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diversity in sentence structures. Lastly, while conventions were generally strong, more meticulous attention to grammar, punctuation, and spelling would have further enhanced the overall quality of the article.

### V. DISCUSSIONS

The characteristics of teachers' article reported in the *Guru Berbagi* platform showcased different methodologies applied to investigate language learning and teaching. This study uncovers a broad spectrum of methodologies utilized in language teaching research on the *Guru Berbagi* Platform, a finding that substantiates the perspective from Zein et al. (2020). They advocate for a diverse array of research methods to adequately address the multifaceted nature of language teaching and learning. The methodologies employed in this research include a quasi-experimental design, assigned writing tasks for data collection, a collaborative reading approach, and a case study approach, each providing different lenses to explore language learning and teaching.

The utilization of a quasi-experimental design by AP, as observed in this study, is a common method seen in research where there is a need to establish cause-and-effect relationships between variables (Creswell, 2014). This approach is especially effective in examining the effects of a teaching method or intervention on students' language performance. The findings of this study, therefore, validate the relevance of a quasi-experimental design in language teaching research. RA's case study approach, as analyzed in this study, provides an in-depth understanding of specific contexts or phenomena. This is a preferred method when the researcher desires to delve into the nuances of a single case or a small number of cases, often in their natural settings (Schoc, 2020). This study's findings regarding RA's work resonate with Yin's observations, offering practical examples of how case studies are conducted in the context of language teaching research. Data collection through writing tasks as seen in EK's research, and as revealed in this study, supports Liu's et al (2020) argument that such tasks offer a rich source for qualitative analysis. They allow researchers to study aspects such as language learners' proficiency, errors they make, and the effectiveness of teaching strategies. This method aligns with the growing interest in learner language in the field of second language acquisition. BNR's adoption of collaborative reading, as discovered in this study, is in line with the sociocultural theory in second language acquisition. This theory, as explained by Fang (2021), emphasizes the role of interaction and collaboration in the language learning process. BNR's research gives evidence of the application of sociocultural theory in practice, highlighting the potential of collaborative reading in enhancing language skills.

In relation to the quality of research article reported by the EFL teachers in the *Guru Berbagi* platform presented in this study, corresponds with the Six Traits Writing Model, a widely-accepted framework for examining academic writing Spandel and Stiggins (1990). The traits examined in this study included ideas, organization, voice, word choice, sentence fluency, and conventions, and their varying manifestations across the articles provide valuable insights into the strengths and areas of improvement in each article. For instance, the clear organizational structure identified in AP's and EK's articles is considered a key trait of effective writing, as emphasized by Grabe & Kaplan (2014). It helps guide readers through the text, ensuring the flow and coherence of the content. However, the lack of a concluding section in AP's article, as discovered in this study, underscores the importance of conclusions in academic writing. As noted by Hyland (2004), conclusions play a critical role in summing up the arguments and reaffirming the central idea of the text. The study's critique on word choice, sentence fluency, and conventions is consistent with Akhtar's et al. (2020) discussion on these aspects. Effective word choice contributes to the precision and clarity of the message, while sentence fluency ensures the text is readable and engaging. Attention to conventions – grammar, punctuation, and spelling – guarantees the correctness of the writing and enhances its credibility. Finally, the analysis of the voice in the articles, as presented in this study, highlights the role of authorial identity in academic writing. Xu and Nesi (2019) argued that the writer's voice can significantly contribute to the persuasiveness and engagement level of the text. The findings of this study show that a consistent and engaging voice, as exhibited in BNR's article, can captivate the audience's attention and make the writing more relatable and impactful. However, as revealed in the analysis of AP's and RA's articles, when the voice lacks consistency or individuality, it could lead to less engaging reading. These findings underscore the necessity of developing a strong, unique voice in academic writing, not only for the purpose of asserting the writer's identity but also for enhancing the overall quality and appeal of the text. In terms of word choice, the study indicates that the language used in academic writing should not just be appropriate, but also varied and creative. A lack of variety in word choice, as observed in AP's article, could make the text monotonous and uninteresting, underscoring the need for teachers to pay attention to this aspect when writing academic articles. Sentence fluency was another key aspect highlighted in the study. While the sentence fluency was generally smooth in the articles analyzed, it was suggested that the articles would benefit from more diverse and complex sentence structures. This aligns with the viewpoint of Harshini (2020), who stated that varying sentence structures can make the text more engaging and showcase the writer's linguistic competence. Lastly, the conventions of writing, which include grammar, punctuation, and spelling, were found to be generally followed in the articles. However, as noted in the analysis of RA's article, more meticulous attention to these conventions could

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have further enhanced the overall quality. This reflects the idea that accurate use of conventions is an essential component of effective academic writing.

### VI. CONCLUSION

Based on the findings of this research, there were clear indications that the English as a Foreign Language (EFL) teachers had demonstrated considerable knowledge and skill in their contributions to the Guru Berbagi Platform. This platform had been successful in gathering various perspectives and methodologies to explore language learning and teaching, thereby increasing the richness and diversity of its content. The articles reviewed showed varying levels of proficiency, from mixed performances to high excellence, suggesting a broad range of experience and expertise among contributing teachers. However, while teachers exhibited different strengths in writing, the research also identified areas for improvement that could have enhanced the overall quality and impact of the articles. These included a need for further supporting evidence, refinement in word choice, addition of concluding sections, variation in sentence structures, and more meticulous attention to conventions. The research results highlighted the critical importance of continued professional development for EFL teachers. To enhance the quality of articles submitted to the Guru Berbagi Platform, specific areas of focus could have included effective academic writing techniques, evidence-supported argumentation, and strategies to maintain a captivating and consistent writing style.

This research, while insightful, did have some limitations. For one, the analysis was limited to the articles submitted by only four teachers. Consequently, the results might not have been generalized across all articles and contributors in the Guru Berbagi Platform. Secondly, this study used a qualitative method of analysis, which could have introduced subjectivity in the interpretation of the quality of the articles. In response to these limitations, it was recommended that future research expand the sample size to include a larger number of articles from diverse contributors for a more representative analysis. Additionally, a rubric-based evaluation could have been used to introduce a quantitative element to the analysis, increasing the objectivity and reproducibility of the research. Lastly, teachers could have been encouraged to participate in peer-review processes, promoting a constructive dialogue that could lead to the improvement of their writing skills and the overall quality of the platform's content.

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Appendix 1. Research Activities Reported by EFL teachers in *Guru Berbagi* Platform range from 2020 to2022

Initial	Published	Title	Composition of Article	Research Question	Methodology	Findings
AP	22 November 2020 01:40	Enhancing the Secondary Students' Writing Skill through Project Based Learning	The paper consists of the following sections: Introduction, Literature Review, Research Hypotheses, Methodology, Results and Discussion, Conclusion, Suggestions, and References	The effect of Project-Based Learning on enhancing the secondary students' writing skill	Quasi experimental research which consists of control class and experiment class	Project-Based Learning has a better effect than the conventional model on students learning outcomes in writing skills
EK	23 November 2020 08:59	The Eighth Graders' Writing Ability of Writing Descriptive Texts and Their Problems of Using Appropriate Adjective at SMPN 21	The paper consists of several sections including the Introduction, which comprises research questions and a literature review; the Findings and Discussion section; the Conclusion; and finally, the Suggestions section	The eighth graders' ability in writing descriptive text and the problems that they encountered in writing descriptive texts at SMP N 21 Padang	The researcher collected the data by assigning the students to write the descriptive texts.	The students' ability in writing descriptive texts of the eighth grade of SMPN 21 Padang was poor and the students had problems in writing descriptive texts, especially in components of writing (adjective)
BNR	30 June 2021 13:15	Stimulating Students' Vocabulary Building through Collaborative Reading	The writer did not divide the article into separate sections for the introduction, literature review, and findings. The article also includes references	How collaborative reading activity might contribute to students' vocabulary building in SMPN 1 Praya	The study involved adapting collaborative reading as the main source of vocabulary enrichment for year 9 students of Junior High School no 1 Praya (later referred to as Spensatya) located in Central Lombok, Indonesia	The study found that collaborative reading activities could contribute to students' vocabulary building in SMPN 1 Praya. The activities presented were argued to benefit students from cognitive and psychological aspects in English learning class.
RA	23 December 2022 05:16	The Usage of Comic Online to Improve Students' Reading Skill	The article lacks proper structure as the writer did not divide it into sections such as introduction, methodology, and findings.	How does the usage of English comic online improve students' reading skills at SMA Kasih Immanuel School?	The study applied a case study approach to explore the phenomenon or problems happening in the classroom. The researcher focused on a group of 10th-grade students and conducted teaching activities in the classroom to collect empirical data.	The usage of English comic online improves students' reading skills

## Risk Reduction to Increase the Safety of Processes in the Obstetric Structure



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**ABSTRACT:** The definition of risk in the obstetric structure and its impact on a particular health phenomenon determines the model of work aimed at increasing safety for patients and staff. Preventable events are used as a measure of problems in different sectors, in the organization of work, which also determines the behavior of managers from different hierarchical levels. These are events that would not have happened if there were no strong exposure to a factor or gaps in standard health interventions in obstetric care.

**Methods:** a survey was conducted among medical persons in obstetric structures of the city of Varna. The data is processed using statistical software.

**Results and discussion:** significant results relevant to the definition of risks in obstetric practice have been identified. Proper management of risk situations requires an impact on the causes of complications, which increases the quality of the medical service and ensures patient safety. More than 80% of the risks are determined by acute complications during pregnancy and childbirth, by the urgency and time to manage them.

**Conclusion:** obstetric care requires a continuous audit of the activities, structure and resources and the application of written rules for all possible and rare situations, consistent with the established guidelines and rules of Conduct, which ensure patient safety and workplace safety for employees, in accordance with the legal framework defining medical practice.

**KEYWORDS:** risk, obstetrics, responsibilities, audit, quality.

### I. INTRODUCTION

Risk is a condition or potential environmental event that may alter the expected outcome. It is measured in terms of probability and consequences, and can cause damage in medicine, lead to the occurrence of adverse events. According to the International Organization for Standardization, risk is defined as the product of the probability of occurrence of events and the impact of the event occurring. [1,2,3]. The following definition of risk [4] has been adopted in the standards of the Apostille: "risk-the impact of uncertainty on targets." (Risk is measured by its effect on structure and resources and by the probability of its occurrence). Risk management is a process that involves responsible management decisions [5,6,7]. No guidelines and methodology have been developed to support the establishment of a risk management system in the Health Organization, respectively in obstetrics practice, to assist the management in determining the policy of management of the structures, reducing the risk. Environmental factors have a permanent impact, creating uncertainty [8], changing medical behavior, requiring corrective action to achieve quality of care and environmental safety [9,10].

Events of a different nature change the course of obstetric care which pose a risk [11,12] and lead to a range of consequences for obstetric organization [13,14], from health factors to environmental factors economic stability and workplace safety for employees and patients [13]. A number of negative events in obstetric practice indicate the need for Risk Management in structures to reduce their effect on hospital Organization [15]. Process analysis requires defining errors, reducing their consequences and taking appropriate measures (through training, enhancing competences, changing rules, changing the organization of the performance of the given activity [14, 16, 17]) to ensure safety for all subjects. Knowledge, skills, clinical thinking and individual approach play a key role in the care of each individual patient. Knowing and combining all skills, through training and development, conducting colleges, reduces the possibility of an unwanted turn in the process of obstetric care.

## Risk Reduction to Increase the Safety of Processes in the Obstetric Structure

The timely definition and reduction of the opportunities for its occurrence are the commitment of the employees and the management who, through feedback and proper actions taken [18], guarantee the safety and security of processes, people, patients.

### II. MATERIAL AND METHODOLOGY

THROUGH A DIRECT ANONYMOUS SURVEY, THE OPINION OF 232 MEDICAL PROFESSIONALS WORKING IN HOSPITAL OBSTETRIC STRUCTURES IN RELATION TO THE WORKPLACE WAS STUDIED TO DEFINE THE RISKS ASSOCIATED WITH MEDICAL CARE RELEVANT TO PATIENT SAFETY. THE STUDY PERIOD IS OCTOBER 2022 - MARCH 2023. RESULTS ARE PROCESSED WITH STATISTICAL SOFTWARE - SPSS STATISTIC AND ARE PRESENTED GRAPHICALLY.

### III. RESULTS AND DISCUSSION

A survey was conducted among 232 medical specialists from 3 Hospital structures in Varna, of which 53.45% are doctors with a recognized specialty. Operational and managerial positions occupy 8.19% of the respondents. Opinions on workplace risk factors and those related to medical care relevant to patient safety were examined.

#### 1. Risks in the workplace

The leading element of the workplace are the factors of the working environment – workload, working conditions, workplace safety, conflicts, training, staff development, security. Of the respondents, 55.78% identified a high workload in the work environment. The most intensive and busy sectors are the surgical block, maternity wards, intensive neonatal units, intensive care units, Covid structures. The workload stems from the nature of work, the urgency of performing tasks, sudden complications related to pregnancy, childbirth or extragenital conditions (diseases of various organs and systems, Covid infection, etc.). According to the respondents, workload, conflicts, and many obligations are factors that increase the risk situations related to medical care (for 76.72% of respondents).

An important element of the impact on risk is the timely recognition of problems in the workplace. The defined problems refer to (Table 1):

- The pay system-196 (84.48%) of the respondents identified as the leading problem low pay and lack of mechanisms for its increase. Legislative thresholds for pay of medical professionals are set at the branch level, which is not adequate to the responsibilities and workload. Some specialties have the possibility of realization of several jobs due to a defined insufficiency of specific specialists (anesthesiologists, clinical pathologists, imaging specialists);
- Lack of teamwork for 176 (76.72%) of respondents;
- conflicts and tense situation in 174 (75%) - the attitude that medics face from internal and external factors, microclimate in the wards, conflicts and rude attitude, has a negative impact and makes it difficult for them to adapt to the working environment.

**Table 1. Defined problems in the workplace**

No	Defined problems	Number of respondents	Relative share*
1	Lack of contact with management	102	43,96%
2	Vaguely defined obligations	208	89,65%
3	Vaguely defined tasks	214	92,24%
4	Lack of teamwork at work	176	76,72%
5	Lack of a payment system	178	72,72%
6	Conflict and tense situation	174	75%
7	Other	45	19,39%

\*The sum of the percentages is more than 100% because the respondents gave more than one answer

Medical professionals in management positions also define the leading place of the pay system as the basic level of impact in human factor management:

- Development of the payment system as a measure of commitment and security in the performance of tasks (52.63%);
- improving the qualification of human resources (36.85%);
- Influence on motivation (10.52%).

Direct managers want to have clearly defined rules and required competencies in recruitment, as the acquired qualifications alone are not sufficient to ensure the suitability of the employee in the organisation. Each of these aspects reflects certain management activities of continuous monitoring of staff.

## Risk Reduction to Increase the Safety of Processes in the Obstetric Structure

The constantly changing regulatory framework makes it difficult for 217 (93.53%) of doctors and healthcare professionals to carry out day-to-day work related to medical care.(Figure 1).

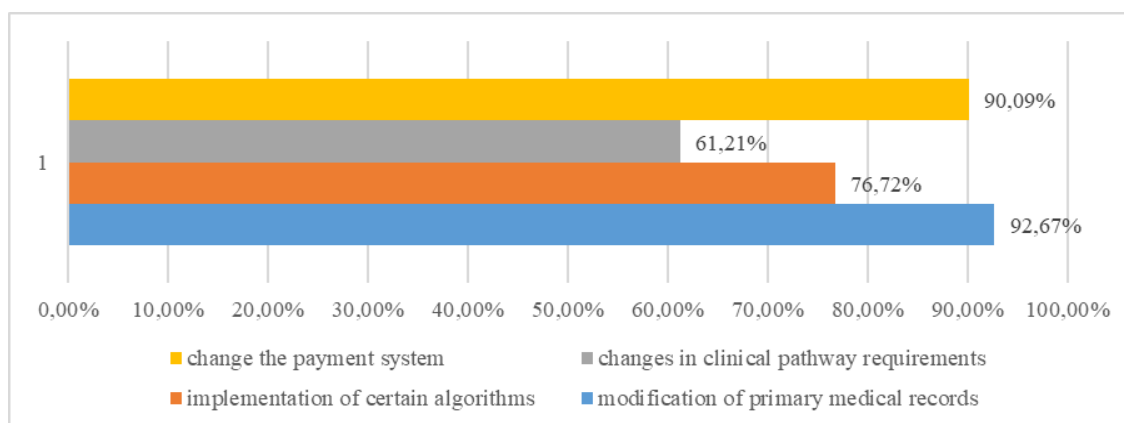


Figure.1. Leading risk factors of structure

### 2. Risks associated with the activities carried out

The provision of obstetric care requires compliance with the principles of timeliness, accessibility, effectiveness, efficiency, as well as quality of performance of activities related to communication, care, diagnosis and treatment. A number of situations and acute complications make it difficult to carry out daily activities in the structures. As emergency conditions are indicated-bleeding during pregnancy and childbirth, acute and sudden conditions of genital and/ extragenital origin, DIC, HELLP syndromes, etc.

Medical professionals determine the risks of the activity related to medical care (Table 2).

Table 2. Correlation of defined problems related to obstetric medical care

Defined risks associated with medical care	Total number (%)	Doctors	Midwives	p ( $\chi^2$ )*doctors / health professionals
Acute complications with pregnancy and childbirth	188 (81,03%)	86	102	<b>0,000</b>
Extragenital diseases affecting pregnancy and childbirth	125 (53,88%)	66	59	0,831
Lack of information about the patient's health	155 (66,81%)	85	70	0,547
Lack of resources	190 (81,89%)	101	89	0,850
Lack of ability to provide full medical care	192 (82,86%)	101	91	0,572
Lack of knowledge and skills for work	126 (54,31%)	57	69	<b>0,006</b>
Lack of time to complete all medical care activities	150 (64,66%)	91	59	<b>0,003</b>
Impaired communication in the workplace	126 (54,31%)	54	72	0,079
Tense working environment	211 90,95%)	109	102	0,083
Strong administration of medical activities	185 (79,74%)	86	99	<b>0,000</b>
Low motivation to work	113 (48,71%)	70	43	<b>0,008</b>

The sum of the percentages is more than 100% because the respondents gave more than one answer.

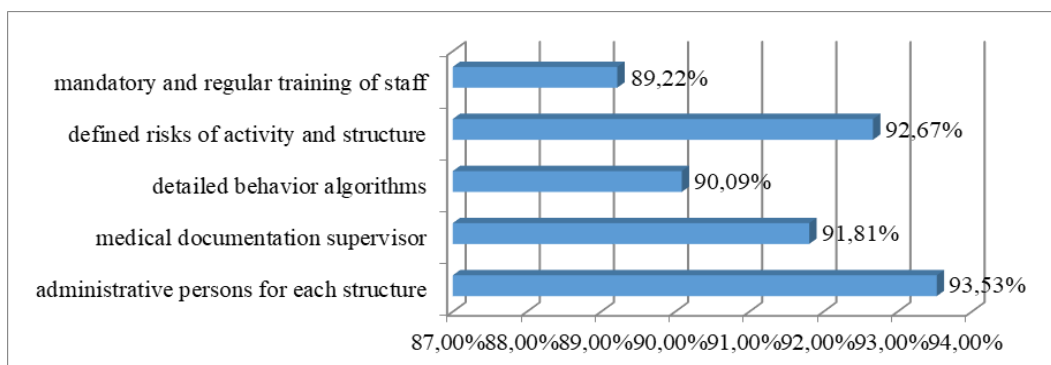
\*p -relevance level for applying  $\chi^2$  to compare responses between physicians and healthcare professionals

The results show that for some of the important medical care problems defined by medical professionals (acute complications during pregnancy and childbirth, lack of sufficient experience and skills, insufficient time to perform all work duties, strong administration of activities, low motivation to work), doctors are more confident and confident in the performance of the activities in obstetric structures, and the data are statistically significant.

## Risk Reduction to Increase the Safety of Processes in the Obstetric Structure

### 3. Improving patient safety

The organization and control of the activities in obstetric structures and medical care are aimed at increasing the safety of medical care and ensuring safety in the workplace (Figure.2.).



**Figure.2. Recommendations of working healthcare professionals to reduce risk**

The training as a means of increasing the qualification skills is directed according to the needs of the structure and provides the activities according to a regulatory requirement or a need. Driven by the need for self-improvement, 207 (89.22%) of the respondents said that they need training in their work in terms of: requirements for activity under the national framework contract; work with new technologies; trainings for work with hospital information systems (HIS) and are clearly aware of the need for training and daily instruction.

To reduce uncertainty regarding the administration and documentation of medical activities, a large majority of healthcare professionals (213 – 91.81%) state the need for an official to carry out timely follow-up control of medical records.

There is a need for a supervisor in medical teams to monitor the correctness of activities and to make timely adjustments in activities at different levels and to take the necessary steps to ensure security, safety and ergonomics in the workplace. This will ensure timely feedback on problems in the performance of work tasks, through direct impact on the various elements.

Continuous monitoring of the environment and processes ensures proper risk management, increasing the safety of care and patients, through:

- ✓ Risk assessment (measurement);
- ✓ Selection of effective protective equipment to neutralize risks.
- ✓ Definition of risk management elements and continuous impact on them (Table 3).

**Table 3. Elements of impact**

Elements	Scope
<b>Values</b>	All necessary resources, processes and activities must be protected.
<b>Threats</b>	Possible threats, possible impacts, likelihood of recurrence.
<b>Impacts</b>	Definition of the immediate aftermath of the threat (e.g. improper process management, poor quality of obstetric services, occurrence of adverse events, violation of medical ethics and disclosure of information, etc.).
<b>Consequences</b>	Definition of long-term consequences after the implementation of the threat (e.g. low rating, patient outflows, decrease in profitability, etc.).
<b>Protection measures</b>	Writing strict rules of conduct, writing algorithms for all possible situations; defining specific responsibilities, activities and tasks in regulations, job descriptions and technical slips.
<b>Residual risk</b>	Determining the consequences for the Health Organization; defining the strategy; auditing the processes and people in the organization; quick corrective measures.

*Expected results:* the final results of the activities related to the definition, to the management and Prevention of risk are aimed at: to define all possible risks associated with obstetric care, with resources; with the possibility to determine the acceptable levels of risk for each obstetric structure. This will allow the development of risk assessment maps of different workplaces containing values of probability of occurrence of risks and values of consequences (effect) of occurrence of risks. All possible, often repetitive processes and those that occur rarely will be able to differentiate, and the creation of behavior algorithms will

## Risk Reduction to Increase the Safety of Processes in the Obstetric Structure

allow for certainty in the actions of obstetric care. All identified risks and actions to manage them need to be documented in the „Risk register“, which will facilitate management to undertake timely and adequate impact mechanisms, ensuring safety and quality of medical obstetric care.

### IV. CONCLUSIONS

Risk management is a function of the probability of realization of a particular threat using vulnerabilities of the system, as well as the magnitude of the possible loss. Defined workplace risks by doctors and healthcare professionals are related to the workplace (unclear duties, lack of teamwork, low pay, etc.), as well as those related to medical care (acute conditions during pregnancy and childbirth; lack of time to perform duties; strong administration of processes, lack of motivation to work, etc.).

Mastering and reducing risk is the main responsibility of management and requires continuous analysis of the system (Audit of processes, resources and technologies); analysis of the possible risks (Risk assessment, categorization of information resources by degree of value and importance); analysis of the vulnerability of the system (Vulnerability assessment); construction of a security system; assessment of threats (Threat assessment). The final effect is to develop rules for the behavior of often repetitive activities and in emergency situations to manage the risk and minimize the consequences for resources and structure.

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## Econometrics Analysis of the Effect of Human Capital Development on Economic Growth in Nigeria



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**ABSTRACT:** Despite arrays of empirical literatures on the impact human capital development has on the economic growth the debates is inconclusive with mixed outcome. Thus, the main objective of this study is to empirically examine the impact of human capital development on economic growth in Nigeria between the periods of 1999 and 2022. To achieve this said objective; time series secondary data was sourced from Central Bank of Nigeria Statistical Bulletin, 2022. Thereafter, Autoregressive Distributed Lag Regression Estimate (ARDL) analysis was conducted with the aid of E-view 10. Findings of this study reveals as follows; that government expenditure on education have positive and statistically significant impact on RGDP. Equally, government expenditure on health have statistically significant impact on RGDP. More so, life span have positive and statistically insignificant impact on RGDP. Again, total school enrollments (SER) have positive and statistically insignificant impact on RGDP. Lastly, this study find out that human capital development has statistically significant short run and long run relationship with economic growth in Nigeria between 1999 and 2022. Therefore, the following recommendations are suggested: first, that Nigeria government at all levels should ensure that priority should be placed on all the components or indicators of human capital development of the Nigerian citizens. Second, government effort toward increase government expenditure on education should be sustaining. Third, governments at all levels should increase the funding for health sector in order to ensure the citizens live healthy so as to be able to increase their productivity and afterward, contributes to economic growth. Fourth, governments' efforts should be directed to wellbeing of her citizen in order to pro-long the life span Five, governments at all levels should formulate appropriate policy that will ensure that school enrollments should be at upward trend.

**KEYWORDS:** Human Capital Development, Economic Growth, Government Expenditure on Education, Government Expenditure on Health, Life Span and Total School Enrollments

### 1. INTRODUCTION

The development of human capital has been recognized by economists to be a key prerequisite for a country's socio-economic and political transformation. The process of growth, development and industrialization in no doubt has a linked with human capital development. Thus, the country's human resource development needs to be strengthened and stabilized in order to accelerate economic activities and trigger off higher productivity, income and economic growth and development. According to Egbiremolen and Anaduaka (2014); Lubna, Awan, and Tayyab (2018) human capital engenders productivity aided healthy conditions, knowledge, skills, work experience and motivation.

Economists often use the term human capital for education, health and other human capabilities that can enhance productivity (Anyanwu, Adam, Ben & Yelwa, 2015). Thus, quality of human resources connotes the state of education, health and other human capabilities that can raise productivity when increased and subsequently economic growth. However, empirical findings of some scholars revealed that from all indication it can be seen that level of human capital development in Nigeria is still very low compared to other countries in emerging economies and, this is worrisome and poses a threat to economic growth (Keji 2021; Akaakohol & Ijirshar, 2018; Anyanwu, Adam, Ben & Yelwa, 2015). This is evidence in the rate of unskilled labor resulting to the high rate of unemployment, low technical-no-how responsible for low productivity as well as poor standard of living, short human life span due to poor health status of workforce among other symptoms of low human capital development.

The level of education and health of the citizens are measures for quantity, availability and human resource quality that can be used to analyze the impact of human capital development on economic growth. This is so, because it is believe that an educated

## Econometrics Analysis of the Effect of Human Capital Development on Economic Growth in Nigeria

person is an informed person and not likely to be ignorant of exploring the opportunity in its environment. Thereby, taken an advantage of any resourceful opportunity to contribute to the productivity of its environment.

Furthermore, the citizen health status determines its productivity. It is believed that a healthy person is the only person that can contribute effectively and efficiently to the workforce thereby contributing to the productivity of an economy and subsequently boosting economic growth. However, with poor quality of education and decay in infrastructure in Nigeria's health system, it is pertinent to examine what impact human capital development has on economic growth in Nigeria. It is against this backdrop that this study examines the effect of human capital development on economic growth in Nigeria between the periods spanning from 1999 to 2022. In particular, to determine the effect of government expenditure on education, government expenditure on health, human life span and total school enrollment have on the economic growth in Nigeria between 1999 and 2022?

### Statement of the Research Problem

In spite of the importance of human capital development in sustaining and enhancing economic growth globally yet, Nigeria is still characterized by under-investment in human capital development via the two major tracks that can be used to measure human capital development; that is education and health. The Nigeria government yet to comply with the 26% benchmark of UNESCO (2011) recommendation on education and proposal by World Health Organization of 5% national income allocation to health. However, according to World Bank (2022) Nigeria recorded 0.36 points in the World Bank Group's 2020. The World Bank new report released that 80 percent of the world's extreme poor reside in countries with human capital index under 0.5. The World Bank Group posited that Nigeria's human capital development ranks among the worst globally where it noted that Nigeria's ambitious poverty-reduction targets hinge on developing human capital development.

From the foregoing it is obvious that human capital development in Nigeria is a serious issue that is confronting Nigeria as a nation. This suggests that for Nigeria to grow her economy government effort in looking critically on government expenditure on education and health is inevitable in order to curb the menaces in education and health sector. More so, the issues of underfunding in both education and health sector has been seen as challenges that limit human capital development and, in turn, hampering rapid productivity and economic growth this cannot be ignored. In the same vein, how total school enrollment translates to economic growth in Nigeria is debatable this is because the issue of school dropout at every level is alarming as a result of so many economic, political and social factors. Again, the quality of education in Nigeria is another issue of public concern; where school curriculum and calendar is always truncated by pro-long strike and other unforeseen situations like pandemic and natural occurrences like flood.

Furthermore, one of the indicators of human capital development is the improvement in the health status of the citizen. This can be measured through the life span of the citizen. It is expected that a country with improvement in the health sector is likely to improve the life span of her citizens. It is not gain saying that the nations with good health systems will contribute to the life span of their citizens. Nevertheless, the experiences in Nigeria has showed that the life span of Nigeria citizens on average of 45 to 50 years is shorter than expected. This can be attributed to the level of infrastructural health decay in Nigeria which is alarming in such that individuals now seek for medical trips abroad to their health solution.

However, the extent to which government expenditure on education, health, school enrollment and citizen life span impact on the economic growth in Nigeria is still a controversial issue this is because there are divergent outcomes of scholars in empirical literature on the impact of human capital development in relation to government expenditure on education, health, school enrollment and citizen life span on the economic growth. For instance, a study like Madugba, Oparah and Onuoha (2022) revealed that only capital expenditure on education has a positive and significant association with RGDP. Capital expenditure on health and universal education has a positive but insignificant association with RGDP, recurrent expenditure on education and health has a negative and insignificant association with RGDP. Euphemia, (2022) found that total government expenditure on education and health have positive and insignificant long-run relationships with GDP. In a likewise manner, studies of Bachama, Hassan and Ibrahim (2021) reveal that expenditure on health and education are found to be positively and significantly related with economic growth both in the short-run and long-run. Keji (2021) human capital has long-run significant impact on economic growth in Nigeria. Attahir, Ahmad and Abdullahi (2020) posited that human capital development produces a positive effect on economic growth quality of health care and education with a view to stimulating the economic growth of Nigeria. Akaakohol and Ijirshar, (2018) found that there is a long-run positive relationship between human capital development and economic growth in Nigeria. Furthermore, the finding of Ogunniyi (2018) concluded that there is a long-run dynamic relationship between human capital formation and economic growth in Nigeria. Fajebe, Adeyori and Ikumawoyi (2019) economic growth and secondary school enrollment are statistically significant in the short run. Their finding also, revealed that secondary school enrollment and life expectancy are factors that influence economic growth. This controversy suggested inconclusiveness in the contextual literature. However, for these studies outliers, measurement errors, and incorrect specifications may have affected early

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macroeconomic studies that found a weak relationship between growth and human capital accumulation. While recent studies addressing these problems are beginning to show larger positive effects, the potential endogeneity of human capital accumulation has received relatively little attention. Thus, there is need to find out the extent impact of human capital development on economic growth in Nigeria between the period of 1999-2022 with particular references to the impact of government expenditure on education, health, school enrollment and citizen human life span on economic growth. The aim and broad objective of this study is to examine the impact human capital development has on the economic growth in Nigeria between 1999 and 2022. The rest section of this paper is organized as follows; section deal with literature review, section three deal with methodology, while section four deals with results and discussion and section five deals with conclusion and recommendation.

### **2. LITERATURE REVIEW**

#### **Conceptual Review**

The concept of human capital is investing in people's education for sets of skill or knowledge needed for a given task (Nickolas, 2021). Furthermore, the abilities and skills of human resources of a country is could be refers to human capital, in the same vein, the process of acquiring and increasing the number of persons who have the skills, education and experience that are critical for economic growth and development of a country is human capital formation (Akaakohol & Ijirshar, 2018). According to World Bank, (2022) the Human Capital Index calculates the contributions of health and education to worker productivity. The final index score ranges from zero to one and measures the productivity as a future worker of child born today relative to the benchmark of full health and complete education. Human capital refers to the stock of competencies, skills, knowledge and personalities attribute embodied in individuals which facilitate their ability for the creation of personal, economic and social value (OECD, 2021). United Nations Development Programme (2022) posted that human development index (HDI) is a summary measure of average achievement of key dimensions of human development which includes a long and healthy life, being knowledgeable and have a decent standard of living. Notably, the three basic dimensions of human development; are long and healthy life, knowledge and a decent standard of living. (Maryville University, 2022).

According to Nickolas, (2021) economic growth is an increase in an economy's ability, compared to past periods, to produce goods and services. Furthermore, economic growth is measured by the change in the gross domestic product (GDP) of a country. GDP is a representation of the total output of goods and services for an economy (Nickolas, 2021). Uwakaeme (2015) described economic growth as the positive and sustained increase in total goods and services produced in an economy in a given period usually in one year period. Economic growth represents the expansion of a country gross domestic product (GDP) or outputs which means increases in economic activities (Cornelius, Nkamare & Ogar, 2016). Economic growth is measured by the increase in the amount of goods and services produced in a country at a particular period of time (Donatus & Mordecai, 2016). Is the process whereby the real per capita income of a country increases over a long period of time.

Government expenditure on education is the total expenditure budgeted for education sector total. Aggregate data are based on World Bank estimate (World Bank Group, 2023). Its calculated by dividing total government expenditure for all levels of education by the GDP, and multiplying by 100. According to Organization for Economic Co-operation and development (2022) define public spending on education to includes direct expenditure on educational institutions as well as educational-related public subsidies given to households and administered by educational institutions. According to De Guzman (2020) on public expenditure on education defines government expenditure on education as the component of education expenditure that comes from national regional and local government units to finance or produce educational service.

According to World Health Organization (2022) health expenditure includes all expenditures for the provision of health services, family planning activities, nutrition activities and emergency aid designated for health, but it excludes the provision of drinking water and sanitation. World Bank Group (2023) estimates of current health expenditures include healthcare goods and services consumed during each year. This indicator does not include capital health expenditures such as buildings, machinery, IT and stocks of vaccines for emergency or outbreaks. Life span is the period of time between the birth and death of an organism (Frank & Kaplan, 2022). Concisely, life expectancy is the overall average of time one is expected to live, depending on the year of its birth, current age, and other demographic factors like sex.

#### **Theoretical Review**

Human capital was a term developed in the 1950s and 1960s by two economists, Jacob Mincer and Gary Becker, who are members of a "Chicago School" of economics. They theorized that human capital is the human abilities and education acquired. Its a stock of accumulated knowledge over time acquire by individual in a society for the purpose of reinvestment. It's a store of capital which can be invested to produce a value. This theory argued that capital does not consist of only machines and real estate but human abilities. The theory was initially applied to analysis of nations as a whole but progressively became an important part of

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the considerate of how businesses succeed in phases where innovation and intellectual property are as imperative as factories and land for creating value in business.

### Empirical Literatures

So many empirical studied on the impact of human capital development on economic growth in Nigeria without conclusive and unanimous outcomes; for instances; Madugba, Oparah and Onuoha (2022) ascertain the significant effect of human capital investment on economic growth in Nigeria. The study employed Ordinary Least Square (OLS) as well as cointegration regression analysis. The result revealed that only capital expenditure on education has a positive and significant association with economic growth. Capital expenditure on health and universal education has a positive but insignificant association with economic growth, recurrent expenditure on education and health has a negative and insignificant association with economic growth. Euphemia, (2022) employed Autoregressive Distributed Lag (ARDL) examines human capital development and economic growth in Nigeria between the periods of 1981 and 2020. Finding of the studied revealed the existence of co-integration between economic growth and human capital development indicators. Moreover, the studied also found that total government expenditure on education have positive and insignificant long-run relationship with GDP. Also, the studied found that total government expenditure on health have positive insignificant long-run relationship with GDP. Equally, gross capital formation has positive insignificant relationship with GDP at the long-run. However, life expectancy have a negative and insignificant long-run relation with the GDP. Bachama, Hassan and Ibrahim (2021) examine the role of human capital on economic growth in Nigeria using time series data covering the period from 1970 to 2019. The data are analyzed using Autoregressive Distributed Lag model (ARDL). The study reveals that expenditure on health and education are found to be positively and significantly related with economic growth both in the short-run and long-run. Keji (2021) studied employed vector autoregressive and Johansen techniques to examines the relationship between human capital and economic growth in Nigeria between 1981 and 2017. Finding of the study indicates that in the long-run human capital have significant impacts on economic growth in Nigeria. Attahir, Ahmad and Abdullahi (2020) examine the effect of human capital development on the economic growth of Nigeria covered the period 1983 to 2018. The study employed the Autoregressive and Distributive Lag (ARDL) model for the data analysis. The results showed that there exists long-run relationship among the variables understudy. Furthermore, the study result showed that human capital development components understudy have a positive effect on economic growth. Thus, following the divergent outcomes this study make an attempts to fill this gap be empirically ascertain the significant impact of human capital development on economic growth in Nigeria between the periods of 1999 and 2022.

### 3. METHODOLOGY

This study is an ex-facto research design. This study examined how human capital development impact on economic growth in Nigeria between the period of 1999 and 2022. This study sourced secondary time series data on government expenditure on education and health from Central Bank of Nigeria Statistical Bulletin (2022) and school enrollments and life span on World Bank/World Development Indicator, (2021). The quantitative data were analyzed with econometric technique approach of autoregressive distributed lag (ARDL) with the aid of Eview version 10 Software.

#### Model Specification

This study model specification is based on Autoregressive distributed lag (ARDL) model, also known as bounds testing approach to co-integration, was originally developed by Pesaran and Pesaran (1997) and expanded by Pesaran, Shinb and Smith (2001). In ARDL models both the dependent and independent variables are related not only at present values but across historical (lagged) values as well thus, refers to as linear time series. In particular, if  $y_t$  is the dependent variable in this case economic growth is which is proxy by gross domestic product (GDP) and  $x_1, \dots, x_k$  are  $k$  explanatory variables in this context human capital development via government expenditure on education (GEE), government expenditure on health (GEH), life span status (LFS) and school enrollments (SER) a general ARDL( $p, q_1, \dots, q_k$ ) model is given by:

$$RGDP_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta GEE_{t-i} + \sum_{i=1}^p \beta_2 \Delta GEH_{t-i} + \sum_{i=1}^p \beta_3 \Delta LFS_{t-i} + \sum_{i=1}^p \beta_4 \Delta SER_{t-i} + \mu_t \dots \dots \dots (1)$$

Where  $\Delta$  is a difference operator,  $t$  is time,  $\beta_0$  is an intercept term,  $\beta_1, \beta_2, \beta_3$  and  $\beta_4$  and  $\delta_1$  to  $\delta_4$  are the coefficients of their respective variables and  $p$ s are the lag lengths. Other variables are as defined earlier. In order to examine the existence of long-

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run relationship the study test is based on Wald test (F-statistics), for the joint significance of the coefficients of the lagged levels of the variables, i.e.  $H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = 0$  and  $H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq$

Once cointegration is established, the conditional ARDL long-run model can be estimated as:

$$RGDP_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta GEE_{t-i} + \sum_{i=1}^p \beta_2 \Delta GEH_{t-i} + \sum_{i=1}^p \beta_3 \Delta LFS_{t-i} + \sum_{i=1}^p \beta_4 \Delta SER_{t-i} + \mu_t \dots\dots\dots (2)$$

In the next step, we obtain the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates. This is specified as follows:

$$RGDP_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta GEE_{t-i} + \sum_{i=1}^p \beta_2 \Delta GEH_{t-i} + \sum_{i=1}^p \beta_3 \Delta LFS_{t-i} + ecm_{t-1} + \mu_t \dots\dots (3)$$

*ecm* stand for the error correction captured in equation (3) and  $\vartheta$  represents the speed of adjustment to equilibrium.  $\vartheta$  is the speed of adjustment parameter and ECM is the residuals that are obtained from the estimated co-integration model of equation. Econometric technique of Autoregressive Distributed Lag Model (ARDL) was used in analysis of secondary data sourced using Eview 10 to generate and analyzes descriptive as well as inferential statistics for the study.

### 4. DATA ANALYSIS AND DISCUSSION OF RESULTS

**Table 1. Descriptive Statistics**

	RGDP	GEE	GEH	LFS	SER
Mean	54091.99	2.63E+09	2951177.	51.06035	47.13761
Median	58180.35	3.10E+09	3348404.	51.34600	47.43354
Maximum	72094.09	4.49E+09	5053609.	55.01800	53.40907
Minimum	25430.42	5.38E+08	249064.0	46.26700	43.25185
Std. Dev.	16383.64	1.23E+09	1508309.	2.974564	2.400959
Skewness	-0.402348	-0.480404	-0.941212	-0.202066	0.384579
Kurtosis	1.659025	1.939419	2.578516	1.665189	3.274471
Jarque-Bera	2.343842	1.962651	3.566119	1.864001	0.639150
Probability	0.309771	0.374814	0.168123	0.393765	0.726458
Sum	1244116.	6.05E+10	67877063	1174.388	1084.165
Sum Sq. Dev.	5.91E+09	3.32E+19	5.00E+13	194.6566	126.8213
Observations	23	23	23	23	23

**Source:** Researcher Computation using Eview 10

From table 1, the study observation is 22. The skewness which measures the degree of asymmetric of the series shows that the entire variables namely; real gross domestic product (RGDP), government expenditure on education (GEE), government expenditure on health (GEH), life span status (LFS) in the model exception of school enrollments (SER), have negative sign that is long-left tail, while school enrollments (SER) has positive sign that is long-right tail. The entire series are normal skewness and platykurtosis, because the values are below Kurtosis of 3. However, kurtosis that is greater than 3 is refers to leptokurtic. In this case the distribution is peaked (leptokurtic) relative to the normal. The kurtosis that is less than 3 is called platykurtic that is, the distribution is flat relative to the normal. More so, the difference between the skewness and kurtosis of the series with those from the normal distribution is measured by Jarque-Bera test statistic. The results show that all the variables understudy were all significant with the probability that a Jarque-Bera statistic exceeds (in absolute value of 5% that is, 0.05) the observed value under the null hypothesis - a small probability value. Thus, null hypothesis of no normal distribution rejected. Therefore, all the entire variables exhibited normal distribution.

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**Table 2. Series of Augmented Dickey-Fuller Test (ADF) Output Results**

Coefficients	Critical Values at 5%	ADF Values	Probability	Comments
D(RGDP)	-3.004861	-2.248883	0.1961	I(1)
D(GEE)	-3.004861	-3.492537	0.0182	I(0)
D(GEH)	-3.029970	-4.743648	0.0015	I(0)
D(LFS)	-3.012363	-0.552764	0.8614	I(1)
D(SER)	-3.029970	-3.337453	0.0274	I(0)

Source: Researchers Computation Using (Eviews 10.0 Output)

The results in table 2 the series of unit root tests of (ADF) show that not all the variables are stationary of order I(0) in first differencing, RGDP and life span status (LFS) are non-stationary at first differences while, government expenditure on education (GEE), government expenditure on health (GEH), and total school enrollments are stationary. Therefore, the mixed stationary tests met the criteria for the conduct autoregressive distributed lag cointegration test in order to examine the existence of long-run relationship among the variables understudy within the sampled period spanning between the periods of 1999 to 2022.

**Table 3. Autoregressive Distributed Lag Estimate.**

Dependent Variable: RGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
RGDP(-1)	0.539022	0.182904	2.947020	0.0163
GEE	1.89E-06	5.73E-07	3.300130	0.0092
GEE(-1)	-6.82E-08	7.83E-07	-0.087051	0.9325
GEE(-2)	1.63E-06	6.15E-07	2.653242	0.0263
GEH	-0.000461	0.000146	-3.168294	0.0114
GEH(-1)	0.000428	0.000136	3.146933	0.0118
GEH(-2)	-0.000238	0.000128	-1.864827	0.0951
LFS	944.6502	801.6828	1.178334	0.2689
SER	11.54218	99.27859	0.116261	0.9100
SER(-1)	114.3818	118.8570	0.962348	0.3610
SER(-2)	-344.4520	98.06888	-3.512347	0.0066
C	-19559.70	37011.81	-0.528472	0.6100
R-squared	0.999218	Mean dependent var	56750.00	
Adjusted R-squared	0.998262	S.D. dependent var	14487.90	
S.E. of regression	603.9689	Akaike info criterion	15.94048	
Sum squared resid	3283005.	Schwarz criterion	16.53735	
Log likelihood	-155.3751	Hannan-Quinn criter.	16.07002	
F-statistic	1045.393	Durbin-Watson stat	2.610246	
Prob(F-statistic)	0.000000			

Source: Researcher Computation using Eview 10

The ARDL regression estimation table 3, result shows that automatic selection (using the Akaike Information Criterion) was used with a maximum of 2 lags of both the dependent variable and the regressor. Out of the 162 models evaluated, the procedure has selected an ARDL (1, 2, 2, 0, 2) including observation 21 after adjustment. However, the coefficient of real gross domestic product RGDP(-1) at period of lag 1 is 0.539022 and statistically significant with the probability value of about 0.02 which is less than 0.05 level of significance. This implies that holding other independent variables constant, a one percent increase in real gross domestic product at period of lagged 1 translate to approximately 54 percent increase in its present value.

More so, the coefficients of the government expenditure on education (GEE) at current level, period of lag 1 GEE(-1) and period of lag 2 GEE(-2) are 0.00000189, -0.000000682 and 0.00000163 with probability values of 0.00, 0.93 and 0.03 respectively. The result shows that government expenditure on education at current level, and period of lag 2 have positive sign and statistically

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significant impact on RGDP, given the sign and probability values which are less than 0.05 level of significance while, at period of lag 1 it has negative and statistically insignificant impact given the negative sign and probability value which is greater than 0.05 level of significance. This result further suggests that one percent increase in government expenditure on education at current level, and period of lag 2 effects about 0.000189 and 0.000163 percent increase in RGDP respectively. On the contrary, one percent decline in GEE result to -0.00000682 increases in RGDP. The policy implication of this result suggests that though government expenditure on education has positive and negative impact on RGDP at different periods, but its percentage contribution to RGDP is very low.

Furthermore, the coefficients of the government expenditure on health (GEH) at current level, period of lag 1 GEH(-1) and period of lag 2 GEH(-2) are -0.000461, 0.000428 and -0.000238 with probability values of 0.01, 0.01 and 0.09 respectively. The result shows that government expenditure on health at current level, and period of lag 2 have negative sign while, at period of lag 1 is positively assign. However, both at current level, and period of lag 1, government expenditure on health have statistically significant impact on RGDP, given the probability values which are less than 0.05 level of significance while, at period of lag 2 it has statistically insignificant impact on RGDP given the probability value which is greater than 0.05 level of significance. This result further suggests that one percent decline in government expenditure on health at current level, and period of lag 2 causes approximately -0.0461 and -0.0238 percent increase in RGDP respectively. However, one percent increase in government expenditure on health at period of lag 1, results to 0.0428 percent increase in RGDP. The policy implication of this result suggests that government expenditure on health has positive and negative impact on RGDP at different periods. More importantly, its percentage contribution to RGDP is very low

Additionally, the coefficient of the life span status (LFS) at current level period is 944.6502 with probability value of 0.268. Given the sign and probability value which is greater than 0.05 significance level, this result indicate that life span have positive and statistically insignificant impact on RGDP.

In addition, the coefficients of the school enrollments (SER) at current level, period of lag 1 SER (-1) and period of lag 2 SER (-2) are 11.54218, 114.3818 and -344.4520 with probability values of 0.91, 0.36 and 0.00 respectively. The result shows that SER at current level, and period of lag 1 have positive sign and statistically insignificant impact on RGDP, given the sign and probability values which are greater than 0.05 level of significance while, at period of lag 2 it has negative and statistically significant impact given the negative sign and probability value which is less than 0.05 level of significance. This result further suggests that one percent increase in SER in at current level, and period of lag 1 lead to approximately, 12 and 114 percent increase in RGDP respectively. On the contrary, one percent decline in SER result to -344 increases in RGDP. The policy implication of this result suggests that though school enrollments has positive and negative impact on RGDP at different periods, but its percentage contribution to RGDP is very high. The Coefficient of fixed variable, is -19559.70 is insignificant with probability value of 0.61 which is, greater than 0.05 level of significance i.e, at 5%. This implies that increase in economic growth can be explained by any other factors not stated in the model.

**Table 4. F-Bounds Test**

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	31.94977	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

**Source:** Researcher Computation using Eview10

The result in table 4 F-bound test of null hypothesis of no cointegration regression estimation was conducted to confirm the no long-run cointegration status. The null hypothesis of no cointegration is rejected because calculated F-statistics of 31.94 exceeds the lower and upper critical values of 2.56 and 3.49 respectively at 5% significant level. Therefore, it can be concluded that there is cointegration thus the long run relationship estimate is justified.

Table 6. ARDL Error Correction Regression

Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GEE)	1.89E-06	3.81E-07	4.957288	0.0008
D(GEE(-1))	-1.63E-06	3.86E-07	-4.231339	0.0022
D(GEH)	-0.000461	8.29E-05	-5.564250	0.0003
D(GEH(-1))	0.000238	6.86E-05	3.470775	0.0070
D(SER)	11.54218	52.85635	0.218369	0.8320
D(SER(-1))	344.4520	67.27433	5.120110	0.0006
CointEq(-1)*	-0.460978	0.026695	-17.26841	0.0000
R-squared	0.939898	Mean dependent var		2114.799
Adjusted R-squared	0.914140	S.D. dependent var		1652.628
S.E. of regression	484.2524	Akaike info criterion		15.46429
Sum squared resid	3283005.	Schwarz criterion		15.81247
Log likelihood	-155.3751	Hannan-Quinn criter.		15.53985
Durbin-Watson stat	2.610246			

\* p-value incompatible with t-Bounds distribution.

Source: Researcher Computation using Eview10

Table 6 present, ARDL ECM regression estimation, in this context the estimated parameters were subjected to test based on economic theory so as to ascertain whether they agree with expected sign. In other words, the model sought to relate the changes in economic growth (GDP) in Nigeria to its explanatory variables which include government expenditure on education, government expenditure on education (GEE), government expenditure on health (GEH), Nigerian and school enrollments (SER) to ascertain the conformation with ‘a priori’ expectation underlying each variable. This, results shows that the entire explanatory variables exceptions of understudy at first differences both at level periods and period of lag 1 are all statistically significant. The CointEq(-1) which measures the speed of adjustment towards long-run equilibrium is negative stands at -0.460978 and statistically significant at 5% level. This implies that the rate at which changes in economic growth (GDP) at time t, adjusts to the single long-run co-integrating relationship is different from zero. In other words, the equation of economic growth (GDP) at time t, contains information about the long run relationship, the reason why co-integrating equation enter the model automatically. The coefficient of the ECM revealed that the speed with which changes in economic growth (GDP) at time t, adjusts respond to regressors is about -46% in the short-run.

Furthermore, the R-Square often refers as the coefficient of determination also known as a measures of the goodness-of-fit, is 0.939898, approximately 94%. That is 94% of the changes in economic growth (GDP) is explained by the changes in the independent variables and the remaining 6% is explained by error term specified in the study model. Adjusted R-squared, value is the same as R-Square that is 0.914140 about 91% variation in the dependent variable is explained by only those independent variables that, in reality, affect the dependent variable. More so, Durbin-Watson statistic (DW) is 2.6 approximately 2 shows there is strong negative serial autocorrelation..

**Test of Hypotheses**

The test of hypotheses in this study is based on the levels equation and error correction mechanism outcome as presented in table 3 and 6. The decision criteria to reject or accept the earlier stated hypotheses is based on the p-value and coefficient sign, where p-value is less than 0.05 level of significance null hypothesis will be rejected otherwise, where p-value is greater than 0.05 level of significance the alternative hypothesis is accepted.

For null hypothesis one (H0<sub>1</sub>): which stated that government expenditure on education has no significant impact on the economic growth in Nigeria between 1999 and 2022. The p-value of government expenditure on education (GEE) has shown in table 4 both at current level and at period of lag 2 are 0.00 and 0.02 respectively less than 0.05 levels of significance. Therefore, this study reject the null hypothesis one stated above and concludes that government expenditure on education have positive and statistically significant impact on the economic growth in Nigeria between 1999 and 2022.



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For null hypothesis two ( $H_{02}$ ): which stated that government expenditure on health has on significant effect on the economic growth in Nigeria between 1999 and 2022, The p-value of government expenditure on health (GEH) has shown in table 4 both at current level and at period of lag 1 are 0.01 and 0.01 respectively, less than 0.05 levels of significance. Therefore, this study reject the null hypothesis two stated above and concludes that government expenditure on health have both positive and negative statistically significant impact on the economic growth in Nigeria between 1999 and 2022. For null hypothesis three ( $H_{03}$ ): which stated that human life span does not have any impact on the economic growth in Nigeria between 1999 and 2022. The p-value of human life span at current level is 0.268 greater than 0.05 levels of significance. Therefore, this study failed to reject the null hypothesis three stated above and concludes that human life span have positive and statistically insignificant impact on the economic growth in Nigeria between 1999 and 2022. For null hypothesis four ( $H_{04}$ ): which stated that total school enrollment has no effect on the economic growth in Nigeria between 1999 and 2022. The p-values of total school enrollment at current level, and period of lag 1 are 0.9100 and 0.3610 respectively, greater than 0.05 levels of significance while at period of lag 2 the p-value is 0.0066 less than 0.05 levels of significance. Therefore, this study failed to reject the null hypothesis four stated above and concludes that total school enrollment have positive statistically insignificant impact on the economic growth in Nigeria between 1999 and 2022 at current level, and period of lag 1 while at period of lag 2 total school enrollment have negative statistically significant impact on the economic growth. For null hypothesis five ( $H_{05}$ ): which stated that human capital development does not have short run and long run relationship with economic growth in Nigeria between 1999 and 2022. The p-value of cointegration equation (-1) is 0.00 less than 0.05 significance levels. Therefore, this study reject the null hypothesis five stated above and concludes that human capital development has statistically significant short run and long run relationship with economic growth in Nigeria between 1999 and 2022.

### 5. CONCLUSION AND RECOMMENDATIONS

The main objective of this study is to examine the impact human capital development has on the economic growth in Nigeria. This study employed Autoregressive Distributed Lag (ARDL) to analyzed the time series data sourced between 1999 and 2022. The analysis and findings of this study lead to the following conclusions; that government expenditure on education have positive and significant impact on economic growth in Nigeria. That government expenditure on health has both positive and negative statistically significant impact on the economic growth in Nigeria. That human lives span has positive and statistically insignificant impact on the economic growth in Nigeria. That total school enrollment has positive statistically insignificant impact on the economic growth in Nigeria. That human capital development has statistically significant short run and long run relationship with economic growth in Nigeria between 1999 and 2022

As manifested from the findings of this study, the following recommendations are suggested: first, that Nigeria government at all levels should ensure that priority should be placed on all components of human capital development of the Nigerian citizens. Second, in particular, government effort toward increase government expenditure on education should be sustaining. More importantly, appropriate funding for education sector that is in tandem with the recommendation of UNESCO (2011) should be implemented. Subsequently, it is expected that citizens with appropriate skill and right knowledge through qualitative training will contributes to economic growth. Third, governments at all levels should increase the funding for health sector in order to ensure the citizens live healthy so as to be able to increase their productivity and afterward, contributes to economic growth.

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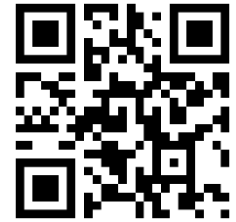
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## Knowledge and Problems Encountered During Teenage Pregnancy in Afgoi District, Somalia: A Descriptive Cross-Sectional Study



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**ABSTRACT:** Pregnancy in a female under the age of 19 is referred to as teenage pregnancy or adolescent pregnancy. Due to the detrimental effects on the prospective bride and her offspring, teenage pregnancy has been referred to as a breach of human rights and a destructive practice. This paper investigates the knowledge and problems encountered during teenage pregnancy in Afgoi District, and the important implications for effective teenage pregnancy interventions. In the Afgoi District, this cross-sectional study was carried out. Information was gathered from 150 teenagers. The data that was gathered through the use of the questionnaires that the respondents answered comprised determining the characteristics of the respondents, the extent of knowledge on early pregnancy among the respondents, and problems encountered about the experience of adolescent pregnancy. After analysing our data, we found; In about (PS=47.33) of the respondents were moderately knowledgeable about knowledge of Pregnancy and problems encountered. The current study found; (PS=45.33) of the respondents were moderately knowledgeable of Teenagers are more susceptible than mothers of average age to high blood pressure associated with pregnancy and its complications. However, the majority of the respondents are slightly knowledgeable that Smoking during pregnancy has been found to diminish birth weight and result in premature birth in babies (PS=20.67), while drugs and alcohol can have highly harmful effects on a mother and her unborn child (PS=22%). We found that most of the respondents sometimes encounter physical problems namely bleeding (WM=3.18); low Birth Weight (WM=2.99); premature birth (WM=2.93); miscarriage (WM=2.84); and hypertension (WM=2.62). Age, marital status, educational attainment, and source of income were positively correlated with the knowledge and Problem encountered in Teenage Pregnancy. Teenagers knew moderately about pregnancy and the issues that can arise during it. The majority of respondents also had a basic understanding that smoking during pregnancy has been found to lower birth weight and result in premature birth in babies, as well as the severe impact that drugs and alcohol may have on a mother and her unborn child. Age, marital status, educational attainment, and source of income were positively correlated with the knowledge and Problem encountered in Teenage Pregnancy. Therefore, in order to increase young teenagers' understanding of pregnancy, it is crucial to design a policy that outlines the promotion of educational awareness and improve their awareness of it through health education programs.

**KEYWORDS:** Pregnancy in Adolescence, Abortion, Human Rights, Female, Pregnancy Complications, Early Marriage

### INTRODUCTION

As of 2019, adolescents aged 15–19 years in low- and middle-income countries (LMICs) had an estimated 21 million pregnancies, of which approximately 50% were unintended and which resulted in an estimated 12 million births [1]. The most prevalent is in Sub-Saharan Africa and South Asia and disproportionately affects girls. Child marriage has been called a human rights violation and a harmful practice, due to the negative consequences for the girl bride and her future children, including low educational attainment, early pregnancies, increased risk of maternal and infant mortality, heightened risk of child malnutrition, and perpetuation of the poverty cycle, to name but a few [2]. In Somalia, the 1975 Family Code made marriage before age 18 illegal (but note that marriage at age 16 with parental consent was still permitted), and the Constitution (2012) states that marriage is legal once a man and woman reach the 'age of maturity' [2]. According to Somalia Multiple Indicator Cluster Survey data from 2006, 45% of 20 to 24-year-old women married before 18. More recent data from 2013 suggest this proportion remained relatively stable (47.2%). Data for Somaliland and Puntland, the study was conducted, suggesting a lower prevalence of child marriage

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compared to the national average. In 2011, the proportion of 20 to 24-year-old women married before 18 was 24.1% in Somaliland and 35.2% in Puntland [2]. The following factors may account for the rising trend in teenage pregnancy in this area: family-related problems, sociocultural factors, low education level, and the lack of adequate knowledge of reproductive health. Teenage pregnancy caused several issues for themselves and their family members [3]. Lack of parent-daughter communication, the taboo on discussing sex-related issues in households, and weak financial autonomy was considered to be the main contributing factors to the high early adolescent pregnancy rates in the community [4]. Therefore, the purpose of this study is to ascertain the knowledge and problems encountered during teenage pregnancy in selected communities of the Afgoi District, offering essential implications for effective teenage pregnancy interventions.

### MATERIALS AND METHODS

**Study Area:** This study was carried out in Afgoi, a Somali town located in the lower Shebelle region of southern Somalia. The city is about 25kilometres west of Mogadishu, the country's capital and the Shebelle River runs through the city center. The city of Afgoi has beautiful landscapes and vast green lands and most of the Somalis work in agriculture and grow fruits such as mango, papaya, and bananas there. Afgoi City is one of the major cities in the Lower Shebelle Region Somalia. People living in this city, speak officially the Somalian language with two different accents. Men and women of the Afgoi district usually engage in farming, while others also engage in white-collar jobs. Furthermore, others engage in trade and some politics.

**Study Design:** A cross-sectional survey was used for this work.

**Sampling technique and sample size:** The researchers employed a random sample method to generate particular data while selecting respondents because the study's respondents were dispersed throughout the province and district. Using the random sampling method, the researcher divided the population into a set of different areas, then the researchers randomly selected the areas of villages were chosen and a defined number of teenagers who were pregnant in the selected villages. 150 sample respondents ranging from 12-19 years old. In order to determine the sample size (n) at a 95% confidence interval with an 8% margin of error, the formula was employed.  $n = N / (1 + N(e)^2)$

n = minimum sample size.

N = Represent the population size.

e = Represent the margin error/precision level which is assumed to be 8%.

**Data Collection Instrument:** To gather the data, the survey method of quantitative research was the three parts of questionnaires answered by the respondents comprises the following: Part 1 of the questionnaire determined the characteristics of the respondents, which includes age, marital status, educational attainment, and source of support. Part 2 of the questionnaire is the extent of knowledge on early pregnancy among the respondents. Part 3 of the questionnaire focused on problems encountered concerning the experience of adolescent pregnancy.

**Tools for Data Analysis:** Concerning the data that were gathered through the use of the questionnaires in Afgoi District, the researcher tallied and collected with the use of appropriate statistical tools for each problem: Sub - problem number 1 was treated using percentages with the subsequent formula =  $f/n \times 100$  P = percentage of the respondents f = frequency counts of respondents n = total no. of respondents

Sub–problem number 2, Mean Score Percentage was utilized to answer the extent of knowledge on teenage pregnancy. The knowledge of the respondents was calculated by counting the number of accurate answers to the knowledge component of the questionnaire. The Mean Score Percentage was interpreted based on the Knowledge Interpretation from the Transmutation Table of Valentin (2009) were a mean score percentage of 70% - 100% was rated highly knowledgeable, 50% - 69% as knowledgeable, 30% - 49% as moderately knowledgeable, and 1% - 29% as slightly knowledgeable.

### Transmutation Table of Knowledge (Valentin 2009)

Percentage	Descriptive Equivalence	Symbol	Descriptive Interpretation
70% - 100%	Highly Knowledgeable	HK	At this level, the respondent is capable of transferring essential understandings automatically and flexibly through real-world tasks.
50% - 69%	Knowledgeable	K	At this level, the respondent has mastered the necessary foundational information, abilities, and core understandings and, with minimal

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			<i>assistance, is able to translate these understandings through real-world performance tasks.</i>
30% - 49%	Moderately Knowledgeable	MK	<i>The respondent at this level possesses the bare minimum of abilities, knowledge, and fundamental understandings, but requires assistance while performing real-world tasks.</i>
1% - 29%	Slightly Knowledgeable	SK	<i>At this level, the respondent struggles with understanding, prerequisite knowledge, and essential abilities that haven't been picked up or sufficiently developed to support understanding.</i>

Sub-problem number 3 Average Weighted Mean was employed to identify the issues encountered during teenage pregnancy. To interpret the attitudes and practices, the Likert Scale was employed.

$$WM = \frac{\sum wf}{N}$$

WM = Weighted Mean

w = weight

f = frequency

$\sum wf$  = summation of weight times frequency

N = total number of respondents

### Descriptive Equivalence on Problems Encountered on Teenage Pregnancy

Numerical Rating	Statistical Rating	Descriptive Equivalence	Interpretation
5	4.21-5.00	Always	<i>An indicator that teenage pregnancy practice has a pretty extensive</i>
4	3.41-4.20	Often	<i>An indicator that teenage pregnancy practice has a great extent</i>
3	2.61 – 3.40	Sometimes	<i>An indicator that teenage pregnancy practice has a moderate extent</i>
2	1.81 – 2.60	Seldom	<i>An indicator that teenage pregnancy practice has a limited extent</i>
1	1.00 – 1.80	Never	<i>An indicator that teenage pregnancy practice has a poor extent</i>

Sub-problem 4 and 5 utilized Pearson r Correlation to find the connection between the respondents' demographic profile and the extent of knowledge and problems encountered during teenage pregnancy.

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2] [n \sum y^2 - (\sum y)^2]}}$$

n = number of data  $\sum x$  = sum of all x values

$\sum XY$  = sum of each x value multiplied by its corresponding y value

$\sum y$  = sum of all y values

r = degree of relationship between x and y

Utilizing statistical software, all statistical analyses were computed automatically. The level of significance set at 0.05 was compared to the significance (p) value, where rejection is inferred when p 0.05, to help decide whether to accept or reject the null hypotheses.

## RESULTS

This descriptive study dealt with knowledge and problems encountered in early teenage pregnancy. Teenagers in the study were located in Afgoi District Lower Shebelle Region Somalia. Afgoi District was used as the locale of study. This study was designed to

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have a thorough knowledge of the related impact of early marriage on adolescents in the Afgoi district. we extracted from the results of the data analyses the following findings:

1. **Table 1 the respondents' demographic profile**, most responders were aged 18-19 years old (45, 30%); followed by those 16-17 years old (42, 28%); 14-15 years old (32, 21.3%); and 12-13 (20.7%). As to marital status, the majority of the respondents are separated (63, 42%); married (25, 16.7%); single (32, 21.3%), and widower (30, 20%). In terms of educational attainment, the majority of the respondents finished vocational education (34, 22.7%) did not finish elementary (31, 21.3%); did not finish high school (28, 18.7%); elementary graduate (16, 17.3%); high school graduate (18, 12.0%); and college level (12, 8%). With regards to the source of support, the majority of the respondents depend on their spouse/partner (63, 42%); own job (32, 21.3%); other relatives (30, 20%); and parents (25, 16.7%).

	FREQUENCY	PERCENTAGE
<b>AGE</b>		
12-13	31	20.7
14-15	32	21.3
16-17	42	28.0
18-19	45	30.0
Total	150	100.0
<b>The MARITAL STATUS</b>		
Single	32	21.3
Married	25	16.7
Separated	63	42.0
Widower	30	20.0
Total	150	100.0
<b>EDUCATIONAL ATTAINMENT</b>		
Elementary Level	32	21.3
Elementary Graduate	26	17.3
High School Level	28	18.7
High School Graduate	18	12.0
College Level	12	8.0
Vocational	34	22.7
Total	150	100.0
<b>SOURCE OF SUPPORT</b>		
Own Job	32	21.3
Parents	25	16.7
Spouse/Partner	63	42.0
Other Relatives	30	20.0
Total	150	100.0

2. **As shown in Table 2 Extent of Knowledge**, the Majority of the respondents were moderately knowledgeable that at any age after starting to have regular monthly periods, a woman can become pregnant if she engages in vaginal intercourse with a male.

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(PS=51.33); Teens who are pregnant are also more likely to have anemia, which is a reduction in the quantity of red blood cells (RBCs). This may leave you feeling run down and exhausted and may harm your child's growth (PS=47.33); Do not think you are not pregnant if you experience a very light period around the time, you anticipate it. In the first few weeks of pregnancy, very little bleeding is possible. (PS=46); Teenagers are more susceptible than mothers of similar age to preeclampsia and associated complications during pregnancy. Premature birth and low birth weight are risks for the infant. Preeclampsia can also damage one's kidneys and even be fatal to a mother or her unborn child. (PS=45.33); Premature infants frequently have low weights. Infants that are underweight may have difficulties breathing and feeding. (PS=39.33); Pregnancy in a woman who is 19 years of age or younger is referred to as a teenage pregnancy. (PS=38.00); you are pregnant when you skip a regular period (PS=34.67); and the development of the brain is also impacted by low birth weight. Learning challenges have been noted in newborns who were underweight. (PS=32). However, the majority of the respondents are slightly knowledgeable that the effects of drugs and alcohol on pregnant women and their unborn children can be extremely harmful (PS=22%), and smoking during pregnancy has been linked to lower birth weight and premature birth (PS=20.67). Overall, the respondents were moderately knowledgeable (MPS=37.67) on teenage pregnancy.

	Correct Answer	PS	DE
1. Pregnancy in a woman who is 19 years of age or younger is referred to as a teenage pregnancy.	57	38.00	MK
2. At any age after starting to have regular monthly periods, a woman can become pregnant if she engages in vaginal intercourse with a male	77	51.33	K
3. You are pregnant when you skip a regular period.	52	34.67	MK
4. Do not think you are not pregnant if you experience a very light period around the time, you anticipate it. In the first few weeks of pregnancy, very little bleeding is possible.	69	46.00	MK
5. Teenagers are more susceptible than mothers of similar age to preeclampsia and associated complications during pregnancy. Premature birth and low birth weight are risks for the infant. Preeclampsia can also damage one's kidneys and even be fatal to a mother or her unborn child	68	45.33	MK
6. Teens who are pregnant are also more likely to have anemia, which is a reduction in the quantity of red blood cells (RBCs). This may leave you feeling run down and exhausted and may harm your child's growth.	71	47.33	MK
7. Premature infants frequently have low weights. Infants that are underweight may have difficulties breathing and feeding.	59	39.33	MK
8. The development of the brain is also impacted by low birth weight. Learning challenges have been noted in new-borns who were underweight.	48	32.00	MK
9. smoking during pregnancy has been linked to lower birth weight and premature birth	31	20.67	SK
10. The effects of drugs and alcohol on pregnant women and their unborn children can be extremely harmful	33	22.00	SK
<b>MPS</b>		<b>37.67</b>	<b>MK</b>

Legend: 70-100% - Highly Knowledgeable (HK); 50-69% Knowledgeable (K); 30-49% Moderately Knowledgeable (MK); 1-29% - Slightly Knowledgeable (SK); DI – Descriptive Interpretation; MS – Mean Score



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### 3. Table 3: describes Problems Encountered in Teenage Pregnancy A. Physical Problems

Respondents sometimes encounter physical problems namely bleeding (WM=3.18); low Birth Weight (WM=2.99); premature birth (WM=2.93); miscarriage (WM=2.84); and hypertension (WM=2.62).

#### B. Personal Problems

Respondents often encounter drop-out from school (WM=3.46). They sometimes encounter parents' separation (WM=3.14); lack of family bonding (WM=3.05); conflict among family members (WM=3.05); and punishment from parents (WM=2.92).

#### C. Financial Problems

Respondents often encounter a lack of family support during my entire pregnancy (WM=3.68), and sometimes encounter can't afford to go to school (WM=3.07); financial problems during check-ups (WM=3.19); difficulty in applying for jobs (WM=3.05); and insufficient supply of vitamins and milk (WM=2.87).

#### D. Social Problems

Respondents sometimes encounter nobody wants to visit them, especially friends (WM=3.31); feeling of isolation and rejection from my family (WM=3.06); Teenagers who become pregnant might be reluctant to visit a doctor. (WM=2.99); afraid to go out of the house (WM=3.05); and experience bullying from people (WM=3.05).

Generally, the respondents sometimes encounter problems during teenage pregnancy.

PHYSICAL	ALWAYS	OFTEN	SOMETIMES	SELDOM	NEVER	WM	DE
1. Hypertension	32	16	17	33	52	2.62	S
2. Miscarriage	24	21	37	43	25	2.84	S
3. Bleeding	26	30	47	39	8	3.18	S
4. Premature Birth	22	23	45	43	17	2.93	S
5. Low Birth Weight	22	23	43	55	7	2.99	S
<b>PERSONAL</b>							
1. Lack of family bonding	22	21	52	52	3	3.05	S
2. Conflict among family members	22	23	56	38	11	3.05	S
3. Punishment from parents	32	16	33	46	23	2.92	
4. Parents' separation	24	21	57	48	0	3.14	S
5. Drop-out from school	26	30	61	33	0	3.46	O
<b>FINANCIAL</b>							
1. Lack of family support during my entire pregnancy	26	30	60	61	0	3.68	O
2. Can't afford to go to school	22	23	49	56	0	3.07	S
3. Difficulty in applying for jobs	22	21	51	55	1	3.05	S
4. Financial problems during check-ups	23	23	71	25	8	3.19	S
5. Insufficient supply of vitamins and milk	32	16	29	46	27	2.87	SE

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SOCIAL								
1.	The feeling of isolation and rejection from my family	24	21	47	56	2	3.06	S
2.	Nobody wants to visit me, especially my friends	26	30	58	36	0	3.31	S
3.	Teenagers who become pregnant might be reluctant to visit a doctor.	22	23	43	56	6	2.99	S
4.	I am afraid to go out of the house	22	23	48	55	2	3.05	S
5.	I experience bullying from people	22	21	50	57	0	3.05	S
<b>AWM</b>							3.08	<b>S</b>

Legend: 1.81 to 2.60 = Seldom (SE); 1.00 to 1.80 = Never (N); 4.21 to 5.00 = Always (A); 3.41-4.20 = Often (O); 2.61 to 3.40; Sometimes; S; and 1.81 to 2.60; DE = Descriptive Equivalence; WM = Weighted Mean; AWM = Average Weighted Mean

4-Table 4 explains Age, marital status, educational attainment, and source of income were positively correlated with the knowledge of teenage pregnancy.

		AGE	MARITAL STATUS	EDUCATIONAL ATTAINMENT	SOURCE OF SUPPORT
K1	Pearson Correlation	.930**	.912**	.910**	.890**
	Sig. (2-tailed)	.000	.000	.000	.000
K2	Pearson Correlation	.834**	.890**	.935**	.824**
	Sig. (2-tailed)	.000	.000	.000	.000
K3	Pearson Correlation	.926**	.953**	.924**	.901**
	Sig. (2-tailed)	.000	.000	.000	.000
K4	Pearson Correlation	.884**	.837**	.868**	.807**
	Sig. (2-tailed)	.000	.000	.000	.000
K5	Pearson Correlation	.890**	.839**	.869**	.812**
	Sig. (2-tailed)	.000	.000	.000	.000
K6	Pearson Correlation	.871**	.824**	.860**	.794**
	Sig. (2-tailed)	.000	.000	.000	.000

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<b>K7</b>	Pearson Correlation	<b>.905**</b>	<b>.837**</b>	<b>.857**</b>	<b>.863**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
<b>K8</b>	Pearson Correlation	<b>.900**</b>	<b>.829**</b>	<b>.821**</b>	<b>.876**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
<b>K9</b>	Pearson Correlation	<b>.925**</b>	<b>.761**</b>	<b>.788**</b>	<b>.897**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
<b>K10</b>	Pearson Correlation	<b>.920**</b>	<b>.768**</b>	<b>.794**</b>	<b>.899**</b>
	Sig. (2-tailed)	.000	.000	.000	.000

5-Table 5 explains Age, marital status, educational attainment, and source of income were positively correlated with the problems encountered.

		<b>AGE</b>	<b>MARITAL STATUS</b>	<b>EDUCATIONAL ATTAINMENT</b>	<b>SOURCE OF SUPPORT</b>
PY1	Pearson Correlation	<b>.908**</b>	<b>.952**</b>	<b>.970**</b>	<b>.874**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
PY2	Pearson Correlation	<b>.942**</b>	<b>.946**</b>	<b>.946**</b>	<b>.907**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
PY3	Pearson Correlation	<b>.872**</b>	<b>.925**</b>	<b>.910**</b>	<b>.870**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
PY4	Pearson Correlation	<b>.735**</b>	<b>.857**</b>	<b>.846**</b>	<b>.686**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
PY5	Pearson Correlation	<b>.788**</b>	<b>.894**</b>	<b>.884**</b>	<b>.740**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
P1	Pearson Correlation	<b>.723**</b>	<b>.864**</b>	<b>.856**</b>	<b>.673**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
P2	Pearson Correlation	<b>.860**</b>	<b>.937**</b>	<b>.905**</b>	<b>.853**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
P3	Pearson Correlation	<b>.720**</b>	<b>.851**</b>	<b>.865**</b>	<b>.662**</b>

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	Sig. (2-tailed)	.000	.000	.000	.000
P4	Pearson Correlation	<b>.762**</b>	<b>.883**</b>	<b>.872**</b>	<b>.698**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
P5	Pearson Correlation	<b>.796**</b>	<b>.910**</b>	<b>.888**</b>	<b>.781**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
F1	Pearson Correlation	<b>.702**</b>	<b>.856**</b>	<b>.845**</b>	<b>.633**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
F2	Pearson Correlation	<b>.739**</b>	<b>.878**</b>	<b>.864**</b>	<b>.671**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
F3	Pearson Correlation	<b>.730**</b>	<b>.870**</b>	<b>.862**</b>	<b>.673**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
F4	Pearson Correlation	<b>.755**</b>	<b>.891**</b>	<b>.850**</b>	<b>.742**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
F5	Pearson Correlation	<b>.742**</b>	<b>.870**</b>	<b>.882**</b>	<b>.696**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
S1	Pearson Correlation	<b>.821**</b>	<b>.914**</b>	<b>.905**</b>	<b>.769**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
S2	Pearson Correlation	<b>.801**</b>	<b>.916**</b>	<b>.893**</b>	<b>.793**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
S3	Pearson Correlation	<b>.711**</b>	<b>.866**</b>	<b>.852**</b>	<b>.656**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
S4	Pearson Correlation	<b>.740**</b>	<b>.879**</b>	<b>.866**</b>	<b>.685**</b>
	Sig. (2-tailed)	.000	.000	.000	.000
S5	Pearson Correlation	<b>.729**</b>	<b>.876**</b>	<b>.867**</b>	<b>.677**</b>
	Sig. (2-tailed)	.000	.000	.000	.000

### DISCUSSION

Due to the detrimental effects on the young bride and her unborn children, teenage pregnancy has been referred to as a breach of human rights and a destructive practice. This paper investigates the knowledge and problems encountered during teenage pregnancy in Afgoi District. Based on our analysis of the data, it revealed that the majority of respondents (PS = 47.33) had a moderate level of experience of pregnant adolescent girls are more likely to suffer from anemia. Comparatively to a study, about

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13.5% of pregnant women had high knowledge of anemia, while 58.4% and 28.1% had moderate and low knowledge, respectively. Less than half (39.1%) of the women adhered to anemia prevention strategies. There were significant associations between knowledge of anemia and where the pregnant woman resides in the district [5]. The results of the present study showed; (PS=45.33) of the respondents were moderately knowledgeable of teenagers are more susceptible than mothers of similar age to preeclampsia and associated complications during pregnancy. Premature birth and low birth weight are risks for the infant. Preeclampsia can also damage one's kidneys and even be fatal to a mother or her unborn child. Compared to research conducted at the University Hospital in Kumasi-Ghana; a high prevalence of inadequate knowledge of preeclampsia among our pregnant study population in Ghana (88.4%). Furthermore, among participants with adequate knowledge (11.6%), only 2.3% had high knowledge of PE based on Bloom's cut-off point. The inadequate knowledge of PE among the population can be linked to the fact that although most of the participants were aware of PE, largely because of knowledge of chronic hypertension [6]. However, the majority of the respondents are slightly knowledgeable that the effects of drugs and alcohol on pregnant women and their unborn children (PS=22%); and smoking during pregnancy has been linked to lower birth weight and premature birth (PS=20.67). A study was conducted Desiree Govender in Ugu, KwaZulu-Natal, South Africa; Alcohol and tobacco use during pregnancy is detrimental to the health of the unborn child. Persistent tobacco inhalation can cause preterm labour, low birth weight, intrauterine growth retardation, and spontaneous abortion. It is also related to fatal alcohol syndrome. The prevalence of fatal alcohol spectrum disorder (FASD) in South Africa ranges from 29 to 290 per 1000 live births. Many research studies have focused on the population's knowledge of the harmful effects of smoking and alcohol use among adult women of reproductive age. However, research data on knowledge of this threat among pregnant and parenting adolescent women are limited. This is a matter of grave concern, as this study found that only 19.6% of the participants knew that alcohol consumption results in low birth weight [7]. According to our research, most of the respondents sometimes encounter physical problems namely bleeding (WM=3.18); low Birth Weight (WM=2.99); premature birth (WM=2.93); miscarriage (WM=2.84); and hypertension (WM=2.62). Comparable to this study; Adolescent mothers (aged 10–19 years) face higher risks of eclampsia, puerperal endometritis, and systemic infections than women aged 20–24 years, and babies of adolescent mothers face higher risks of low birth weight, preterm birth and severe neonatal condition [8]. Concerning the issues of the personal and financial nature, most of the respondents often encounter dropout of school (WM=3.46). They sometimes encounter parents' separation (WM=3.14); lack of family bonding (WM=3.05); conflict among family members (WM=3.05); and punishment from parents (WM=2.92). When we consider that the study was carried out in KwaZulu-Natal, South Africa; Some adolescent mothers' partners were in denial and rejected them and the child while others' partners were happy and supported them during their pregnancy. Families' reactions to the pregnancies ranged between anger and disappointment to abandonment, silent treatment, and acceptance and forgiveness. They also experienced financial constraints, difficulty in returning to school, and stigmatization in society [9].

With regards to social problems, the majority of the respondents sometimes encounter nobody wants to visit them, especially friends (WM=3.31); feeling of isolation and rejection from my family (WM=3.06); Teenagers who become pregnant might be reluctant to visit a doctor. (WM=2.99); afraid to go out from the house (WM=3.05); and experience bullying from people (WM=3.05). A study by Siniša Franjić, 2018; Adolescent pregnancy can also have negative social and economic effects on girls, their families, and communities. Unmarried pregnant adolescents may face stigma or rejection by parents and peers and threats of violence. Similarly, girls who become pregnant before the age of 18 are more likely to experience violence within a marriage or a partnership [10]. Several limitations apply to this study. Somalia's Afgoi District, Lower Shebelle Region, was the only location where the study was conducted. Only participants ages 12 to 19 were included in this study. Future parents and mothers who are teenagers are the only populations taken into consideration in this study. The fact that this study was conducted in an urban environment means that its findings might not apply to other settings, especially rural ones.

### CONCLUSION

Our research has shown that most of the respondents were moderately knowledgeable about Pregnant teens, encountered problems, and are more likely to develop anemia. However, the majority of the respondents were slightly knowledgeable the effects of drugs and alcohol on pregnant women and their unborn children and smoking during pregnancy has been linked to lower birth weight and premature birth. Age, marital status, educational attainment, and source of income were positively correlated with the knowledge and Problem encountered in Teenage Pregnancy. Therefore, it is essential to expand young teenager's understanding of pregnancy; through health education programs, and develop a policy that outlines the promotion of educational awareness, and raise their awareness of it.

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## Lexical Cohesion in Undergraduate Theses: A Quantitative Study in an Indonesian University



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**ABSTRACT:** This study undertook a detailed analysis of the representation of lexical cohesion within the research background sections of undergraduate theses at an Indonesian university. Utilizing a quantitative approach, the research aimed to investigate the frequency and percentage distribution of lexical cohesion devices employed by students in their writing. The primary data collection tool was note-taking, with data drawn from a selection of undergraduate theses submitted by students of English Language Education. The study revealed that repetition was the predominant lexical cohesion strategy, accounting for 93% of instances. It was followed by lesser-used strategies, such as synonym use (4%), collocation (2%), and superordinate terms (1%). However, the research has its limitations; the findings were specific to one group of students within a single university context and based solely on theses, thus potentially lacking wider applicability. The implications of the study highlight the necessity to increase students' awareness and application of diverse lexical cohesion devices. While repetition was a primary strategy, the sparse use of synonyms, collocations, and superordinates indicates areas for enhanced teaching and practice in academic writing. By encouraging a more varied use of these strategies, we can promote improved coherence, richness, and sophistication in student academic writing. This research underscores the importance of diversifying cohesive devices to enrich students' academic writing skills.

**KEYWORDS:** lexical cohesion, cohesive device, writing, background of the research

### I. INTRODUCTION

Maintaining a logical and connected flow between sentences or paragraphs has been a crucial factor when composing a unified piece of writing. To facilitate this, writers have often made use of two primary types of cohesive devices: lexical and grammatical. According to Baker (2018), these devices served to weave together different parts of a text, thereby fostering an integral connection and facilitating superior organization of the content. This process, in turn, simplified the task for readers, making it easier for them to comprehend the text's purpose and direction (Albana et al., 2020; Baker, 2018). Moreover, cohesive devices acted as a support system for writers, assisting them in structuring and interlinking the various ideas they wished to convey in their written products. Baker (2018) emphasized that proficient use of cohesive devices not only enhanced the coherence of a text but also significantly improved its readability. This sentiment was echoed by McCarthy (1991) and Rets et al. (2022), who posited that these devices enhanced the overall structure of a text, making it more accessible and intuitive for the reader. Furthermore, these cohesive devices played a vital role in the comprehension of a text. They allowed readers to establish connections between different pieces of information, leading to a better understanding of the text's main ideas and themes. Therefore, their importance could not be understated when it came to producing high-quality, effective, and coherent writing (Amperawaty & Warsono, 2019; Carrell, 1982; Lebanoff et al., 2020).

Lexical and grammatical cohesive devices, however, were not used in isolation. They were often combined and interrelated, creating a complex network of relations within a text that guided both the writing and reading processes (Hamel & Benzitouni, 2022; Hoey, 1991). Thus, a solid understanding and correct application of these devices have been key to achieving a polished, effective piece of writing (Hoey, 1991). The application of cohesive devices held critical significance in academic writing, acting as a reflection of students' thought processes and organizational skills. By dissecting undergraduate theses, it was possible to glean insights into the quality of the students' reasoning and structuring of their academic writing. Indeed, numerous studies have attested to the connection between the effective use of cohesive devices and academic performance (Albana et al., 2020; Halliday & Hasan, 1976; McCarthy, 1991; Uz Bilgin & Gul, 2020).

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This study focused explicitly on the implementation of lexical cohesion within the introductory sections of undergraduate theses. These theses have been composed by a group of English as a Foreign Language (EFL) students from a public university in Indonesia. The background of the research is an integral section of any academic paper, as it sets the stage for the rest of the research, effectively representing the entirety of the study (Swales, 1990). Hence, its crucial nature has prompted its selection as the focus of this research. By delving into the use of lexical cohesive devices in these backgrounds of research, we aimed to discern patterns, preferences, and possibly, areas of improvement. Not only could this inform pedagogical practices, but it could also provide a model for future students writing their theses (Hyland, 2005). As such, the study of lexical cohesion within these research backgrounds is an important endeavor, with potential benefits for both educators and students alike.

Specifically, this research focused on two core areas: the use of cohesive devices, particularly in the background sections of undergraduate theses from English Language Education students at an Indonesian university, and the specific preferences these students demonstrate in their writing. To extract meaningful results, a quantitative methodology was utilized, assessing the frequency and percentage of use or occurrence of lexical cohesion devices in the analyzed texts. To achieve a comprehensive and nuanced analysis, the categorization of cohesion - specifically lexical cohesion - as proposed by Halliday and Hasan (1976) was adopted. According to these scholars, lexical cohesion can be divided into two types: reiteration and collocation. Understanding these types and their application in the students' writing was a focal point of this research. In terms of outcomes, this research aimed to contribute theoretically and practically. Theoretically, it seeks to enhance the field of language evaluation and testing by providing insights into the analysis of lexical cohesion in writing skill. This could offer a new lens through which to assess writing abilities, especially in the realm of academic writing. On a practical level, this research offered benefits for both teachers and readers. For teachers, the research could have served as a tool to bolster their abilities in assessing the use of lexical cohesion in student writing. This could have led to more effective teaching strategies and an improved understanding of students' writing abilities. For readers, particularly those interested in academic writing or language studies, this research offers a wealth of knowledge and a new perspective. It can also serve as a point of reference for future studies delving into the analysis of lexical cohesion in writing. Ultimately, the goal was to illuminate the critical role of lexical cohesion in producing high-quality academic writing, which could then be harnessed to improve both teaching and learning practices.

Guiding this research were two main questions: firstly, how was lexical cohesion represented in the research background of students' theses? And secondly, what did lexical cohesion, coherence, and continuity in these backgrounds signify about the students' academic writing capabilities? With these queries as our guiding lights, this research aimed to offer fresh perspectives on the significance of lexical cohesion in academic writing.

## II. LITERATURE REVIEW

### The Concept of Writing

Writing is often perceived as the embodiment of articulating thoughts onto paper, and it serves as a critical skill across various contexts. Writing extends beyond the mere act of transcribing symbols or letters onto a medium; it involves the meaningful organization of these symbols to communicate ideas, stories, or instructions (Gallistel, 2021; Overmann, 2023). Brown (2000) argued that writing is a cognitive process of developing and logically structuring ideas onto paper. This perspective highlights the integral role that intellectual engagement plays in writing, emphasizing the importance of mental preparation and organization of thoughts (Alharbi, 2020; Brown, 2000; Dreisoerner et al., 2021; Selvaraj & Aziz, 2019). On the other hand, Langan (2001:76) posited that writing is akin to converting spoken language into written form. This conception underscores the correlation between oral and written communication, asserting that the principles and structures of spoken language provide a foundation for writing. However, this process is not a direct conversion but a thoughtful process of recontextualizing, as the conventions and nuances differ between oral and written communication (Alexander et al., 2020; Kress & Van Leeuwen, 2001; Lew & Mejía-Ramos, 2019; Selvaraj & Aziz, 2019).

The various definitions converge on the point that writing is not merely a mechanical task but an intricate process of thinking and organizing ideas. It involves several steps, including brainstorming, drafting, revising, and editing, each with its unique set of challenges (Flower & Hayes, 1981). For instance, a writer may encounter writer's block during the brainstorming phase or struggle to maintain coherence during the drafting phase (Rose, 2009). Thus, writing is not an effortless task; it requires mental effort and endurance to navigate the challenges it presents. Nonetheless, the final reward of a well-structured piece makes the effort worthwhile, underscoring the significance of mastering this productive language skill (Murray, 2012).

Oshima and Hogue (2007) proposed a fundamental framework for the writing process that encompasses four primary stages: prewriting, organizing, writing, and polishing. This systematic approach allows writers to break down the complex task of writing into more manageable subtasks, making the process more efficient and effective. The prewriting stage is the initial platform where writers select a topic and generate ideas to support it, often through brainstorming, researching, or other ideation



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techniques (Elbow, 1998). The organizing stage follows, where writers structure their generated ideas into a simplified outline, ensuring the coherence of thoughts and logical progression of ideas in the subsequent draft (Flower & Hayes, 1981). During the writing stage, writers convert their structured ideas from the outline into a preliminary draft, prioritizing the transfer of thoughts onto paper over perfection (Flower & Hayes, 1981). Lastly, during the polishing stage, writers refine the draft into a finished piece by revising the content, structure, and flow and then editing for grammatical accuracy, spelling, and punctuation (Oshima & Hogue, 2007).

Moreover, Gerot and Wignell (1994) highlighted various genres or text types that writers can utilize, such as spoof, recount, report, analytical exposition, narrative, descriptive, hortatory exposition, explanation, reviews, discussion, procedure, and news items. Each genre has unique characteristics and purposes, serving to enrich and diversify the ways writers can express their thoughts and ideas (Hyland, 2005).

### Cohesion

Cohesion in writing plays a pivotal role in the construction of comprehensive and meaningful texts. Through the use of linguistic devices, it effectively interconnects ideas and ensures a logical progression throughout a piece of writing. These cohesive devices, including both lexical and grammatical structures, serve as the binding thread of a text, fostering its clarity and coherence. Notably, examining cohesion within a student's writing can provide educators valuable insights into areas where students may face difficulties, aiding them in guiding their pupils towards creating well-structured, cohesive texts.

Halliday and Hasan (1976), renowned linguists, introduced a detailed framework for understanding cohesion in English. They outlined five primary linguistic devices that contribute to establishing cohesion in both spoken and written English, which include reference, conjunction, substitution, ellipsis, and lexical cohesion. Reference, as a cohesive device, involves using pronouns, demonstratives, and definite articles to refer back to entities previously mentioned within a text. This technique helps maintain continuity and avoids unnecessary repetition. For instance, we might use 'she' to refer to 'Mary' after the first mention. Conjunctions, another cohesive device, connect ideas across sentences and phrases, thereby enhancing the connectedness and logical flow within a text. Conjunctions include coordinating, subordinating, and correlative forms, used as per the context and the relationship between the ideas they are connecting. Substitution, on the other hand, prevents repetition by replacing redundant elements with more generic terms. For instance, we might use 'it' to replace 'tea' in the following sentences: "I prefer tea to coffee because it tastes better". Ellipsis is a cohesion strategy that avoids redundancy by omitting elements from a sentence when their meaning can be inferred from the context. For instance, we might simply reply, "I did," instead of "I took the last cookie," with the omitted information understood from the question asked. Lastly, lexical cohesion is achieved when semantically related words are used throughout the text. This includes the use of synonyms, antonyms, hyponyms, or words related by collocation. For example, a text about fitness might strategically include related words like "exercise," "workout," "gym," "healthy," "nutrition," and "well-being." In essence, understanding and effectively employing these cohesive devices are integral to producing high-quality, coherent writing, making them invaluable tools for both writers and educators in the pursuit of mastering and teaching the art of writing.

Alarcon & Morales (2011) noted that reference, as a cohesive device, can be thought of not only in terms of grammatical elements, like pronouns and demonstratives, but also in terms of semantic relations. Such semantic relations can include repetition of the same word or use of synonyms, helping the reader to understand the connections between different parts of the text. As for conjunctions, Trebits (2009) provided a comprehensive categorization of conjunctions based on their function. They highlight how these function words serve to link ideas across sentences and phrases, thereby enhancing the connectedness and logical flow within a text. The concepts of substitution and ellipsis have been explored by many linguists. For instance, Vujević (2012) explain that substitution involves replacing a word or phrase with a "pro-form" to avoid repetition, while ellipsis involves the omission of elements that are contextually recoverable. Finally, lexical cohesion, as a concept, extends far beyond the framework proposed by Halliday and Hasan (1976) and Hoey (1991) provide a more nuanced understanding of lexical cohesion, demonstrating that it involves more than just the use of synonyms or related words. He proposes the concept of "lexical chaining," where words that share a semantic field are used in close proximity to each other in the text, creating a sense of cohesion and unity. In summary, the framework of cohesion in writing is complex and multifaceted, with a range of researchers contributing to our understanding of how linguistic devices help create coherent and effective texts. These diverse perspectives enrich our understanding and offer a multitude of strategies for enhancing the clarity and unity of our writing.

### Lexical Cohesion

Lexical cohesion, as detailed by Halliday and Hasan (1976), forms a substantial part of creating coherence in a text. This linguistic device is constructed through the strategic selection of vocabulary and the crucial role of semantic relationships between words.

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When the elements of a text - words or sentences - bear a clear relationship to each other, lexical cohesion is achieved. Halliday and Hasan break down lexical cohesion into two primary types: Reiteration and Collocation.

Reiteration, as a form of lexical cohesion, can be further broken down into different categories. For instance, repetition can be exact, where the same word or phrase is used again, or it can be indirect, where a synonym or a near synonym is used. Furthermore, the use of a superordinate term, such as "animal" for "dog," or an instance of a general noun, for instance, "creature" for "dog," can create a chain of meanings, giving the text a sense of unity and coherence (Maybin and Tusting (2011). Notably, reiteration can also be achieved by using a pronoun to refer back to a previously introduced entity. For instance, "The dog chased its tail." Here, "its" refers back to "the dog," creating a connection between the two parts of the sentence. Similarly, demonstrative pronouns like "this" or "that" can be used to point back to something previously mentioned or forward to something that is about to be mentioned, thereby establishing coherence within the text (Hinkel, 2003). On the other hand, Collocation, the second type of lexical cohesion, involves more than just the use of antonyms, complementary terms, and converses. Collocation also includes words that are typically found together because they belong to the same lexical field or have a habitual co-occurrence in language. For instance, "bread" and "butter," "fish" and "chips," or "law" and "order" are words that collocate because they frequently appear together. Similarly, words that share a semantic field, such as "rain," "umbrella," and "wet," can create a sense of collocation in a text, as they are often associated with each other (Sinclair, 1991). Additionally, idiomatic expressions are also considered collocations because they are fixed, often non-literal phrases made up of words that are typically found together. For example, "kick the bucket" is an idiomatic expression where "kick" and "bucket" collocate to mean "die" (Nattinger & DeCarrico, 1992). By strategically using reiteration and collocation, writers can create texts that are not only cohesive and coherent but also rich in meaning and stylistically engaging. It's these delicate networks of lexical relationships that enable the text to 'hang together' and resonate with the readers, ultimately enhancing their reading experience (Hoey, 1991).

### III. METHODOLOGY

This particular study falls under the category of quantitative research, which is typically characterized by its scientific nature, focus on verifiable facts, and the rigorous analysis of data. Quantitative research is commonly employed to gather, analyze, and condense numerical data. Its primary objective is to measure various aspects of phenomena, such as scale, range, and frequency (Neville, 2007). In this study, we analyzed the frequency at which lexical cohesion occurred in the writing of students. Lexical cohesion involves the use of specific words or phrases that establish connections and coherence within a text. It encompasses the repetition of related terms, synonyms, antonyms, pronouns, and other cohesive devices. By investigating the frequency of lexical cohesion in student writing, we gained valuable insights into the effectiveness with which they established and maintained coherence in their compositions.

To conduct our quantitative analysis, we systematically gathered a representative sample of students' written work and employed numerical methods for examination. Various statistical techniques were employed to quantify and summarize the occurrence of different types of lexical cohesion in the texts. These methods included calculating frequencies, percentages, and measures of central tendency such as means or medians. By utilizing these techniques, we aimed to provide a comprehensive overview of the data. In order to ensure the reliability and validity of our research, we established clear criteria for identifying and categorizing instances of lexical cohesion. This involved the development of a coding scheme and utilization of established linguistic frameworks for cohesive device analysis. Additionally, we considered factors such as sample size, diversity, potential confounding variables, and appropriate statistical tests to derive meaningful conclusions from the data.

The data utilized in this research consists of undergraduate theses from students enrolled in the English Language Education program at an Indonesian university. The primary aim of the study is to analyze how students employ lexical cohesion devices in their writing. To ensure the novelty of the data, a set of 10 theses from three years ago was selected for analysis. The selection process involved employing a simple random sampling technique, using a lottery method due to the abundance of available student writing. This approach aimed to ensure that the chosen theses represent the entire pool of work.

The data collection procedure involved the following steps:

1. Selecting the theses using a simple random sampling technique.
2. Assigning numerical identifiers to the selected theses to facilitate their identification and subsequent analysis.
3. Reading the theses, with particular emphasis on the Background section, to develop familiarity with the content.
4. Identifying and collecting all words that indicate the presence of lexical cohesion devices.
5. Organizing the collected data in a tabular format to facilitate ease of analysis.

The analysis of the data in this research employed the categorization of cohesion proposed by Halliday and Hasan (1976), specifically focusing on lexical cohesion. Within lexical cohesion, two primary types were examined: reiteration and collocation. Reiteration refers to instances where the writer refers back to something mentioned in previous sentences or paragraphs. To

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investigate reiteration, the researcher analyzed the use of repetition, synonyms, superordinate items, and general words employed by the students. Additionally, the study explored the presence of collocation in the students' writing. As a quantitative research study, the data underwent analysis using quantitative calculations to determine the frequency and percentage of usage or occurrence of lexical cohesion devices. This quantitative approach allowed the researcher to obtain a comprehensive understanding of how students utilized lexical cohesion in their theses.

### IV. FINDINGS AND DISCUSSIONS

This section provided the representation of lexical cohesive devices used by the students in the introductions of their undergraduate theses. There were four components of lexical cohesion that were presented as follows:

**Table 1. Numbers of Lexical Cohesion**

No	Samples	Repetition	Synonym	Superordinate	General Word	Collocation	Total
1	Thesis 1	35	2	0	0	0	37
2	Thesis 2	42	3	0	0	3	48
3	Thesis 3	61	1	0	0	2	64
4	Thesis 4	77	4	2	0	1	84
5	Thesis 5	96	0	2	0	1	99
6	Thesis 6	40	4	0	0	1	45
7	Thesis 7	38	3	1	0	2	44
8	Thesis 8	27	2	0	0	0	29
9	Thesis 9	48	3	0	0	2	53
10	Thesis 10	58	2	0	0	0	60
<b>Total</b>							<b>563</b>

Based on the table 1 presented above, We identified four main components of lexical cohesion employed by the students in their writing, namely: repetition, synonym, superordinate, and collocation. The findings were intriguing and told a lot about the writing style of the students. Repetition was the most frequently utilized form of lexical cohesion, with 522 instances recorded across the 15 introduction texts analyzed. This suggested that the students preferred to repeat certain words or phrases to create cohesion and maintain the continuity of their ideas. Meanwhile, the use of synonyms, another form of lexical cohesion where different words with similar meanings were used, was found to be significantly less common with only 25 instances recorded. This lower frequency may have indicated a lack of vocabulary breadth among the students or a preference for exact repetition over synonym use for achieving cohesion. Superordinate terms, words that were more general and could include other words under them, were used even less frequently with only 5 instances identified. This relatively low number might have indicated students' preferences for explicit repetition and synonym use rather than implying relationships through the use of superordinate terms. Interestingly, the research found no instances of general words, a subcategory of superordinate terms, being used. This could be a topic of future exploration: why these were not used and how their inclusion might impact the cohesion and comprehensibility of the texts. Finally, collocation, or the use of words that often go together, was found in 12 instances. This indicated a modest use of this cohesive device, showing that some students were aware of and able to utilize this type of lexical cohesion. In total, across the 15 introduction texts used for the research, there were 563 instances of lexical cohesion elements. These findings highlighted the tendency of students to rely heavily on repetition as a means of creating cohesion, with lesser use of synonyms, superordinates, and collocations. These patterns offered valuable insights into students' writing habits and skills and pointed towards areas that could be targeted for improvement in teaching and learning.

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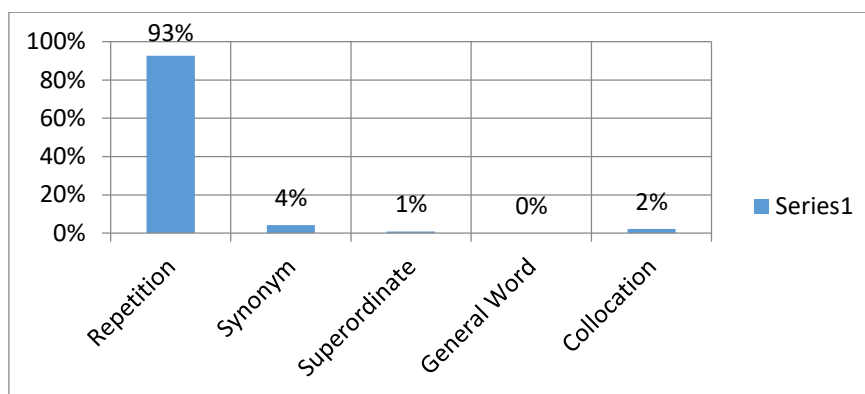


Figure 1. The Percentage of Lexical Cohesive Devices

The graphic provided a clear, quantitative representation of the students' usage of different forms of lexical cohesion in their academic writing. The findings were particularly striking in the dominant use of repetition as a cohesive device. With a commanding 93% share, repetition emerged as the most favored method of creating lexical cohesion among the students. This method, involving the direct recurrence of a word or phrase, was significantly more prevalent than any other form of lexical cohesion. This finding reinforces the observation that students tend to rely on the simple and straightforward strategy of repeating keywords to maintain continuity in their writing. Following far behind repetition was the use of synonyms, representing just 4% of the total cohesive devices used. This relatively low percentage suggests that while some students do employ synonyms as a cohesive strategy, it is considerably less favored than repetition. Collocation, the practice of using words that typically appear together, represented 2% of the total. This suggests that only a small fraction of students make use of this advanced form of lexical cohesion in their writing. Superordinate terms were used least frequently, making up only 1% of the total cohesive devices employed. This suggests that the usage of more general terms that can encompass a range of more specific ones is not a common strategy among the students. Lastly, the use of general words was not observed at all in the data set, accounting for 0% of the total. The lack of general words suggests that students might prefer explicit repetition or direct synonyms over a more abstract and indirect cohesive device. The disparity between the use of repetition and the other forms of lexical cohesion suggests that future instruction might benefit from focusing on expanding students' understanding and usage of synonyms, collocation, superordinate terms, and general words, thereby diversifying their strategies for achieving cohesion in their academic writing.

## V. DISCUSSION

The findings of this current study are consistent with prior research, such as that conducted by Fatimah and Yunus (2014), Rokhanyah et al. (2022) and Warna et al. (2019), which also identified repetition as the most commonly used lexical cohesive device among students. This observation reveals a significant trend in student writing practices, suggesting a reliance on repetition as a primary strategy for achieving cohesion. However, while repetition can be an effective tool in certain contexts for maintaining the thematic continuity of a text, an over-reliance on it can result in monotonous and unengaging writing, as warned by Wang (2019). This can lead to reader fatigue, as encountering the same words or phrases repeatedly can diminish reader engagement and comprehension. In contrast, other studies have stressed the importance of diversifying the range of lexical cohesive devices used in writing. Durrant and Brenchley (2019), for instance, highlight that lexical diversity is a mark of mature and sophisticated writing. Using a variety of lexical cohesive devices, such as synonyms, superordinates, and collocations, can not only maintain cohesion but also increase reader interest and comprehension. Moreover, the use of synonyms, superordinates, and collocations has been identified as particularly effective in enhancing the complexity and richness of a text. Halliday and Hasan (1976), in their foundational work on cohesion, noted that these devices often contribute to a deeper level of cohesion and coherence, and that proficient writers tend to use these devices more frequently. Therefore, while this research aligns with Fatimah and Yunus (2014), Rokhanyah et al. (2022) and Warna et al. (2019) in identifying repetition as the primary lexical cohesive device used by students, it also underscores the need, highlighted by other researchers, for students to diversify their use of cohesive devices. It suggests that instruction in academic writing should include a focus on teaching a broader range of lexical cohesion strategies, to help students produce more engaging, coherent, and sophisticated texts.

Synonym usage is an integral part of lexical cohesion, functioning as a powerful tool to avoid repetition and maintain the reader's interest. In this study, synonym usage was found to be the second most frequently used form of lexical cohesion, albeit far behind repetition. The researcher found a total of 24 instances of synonym usage across the 15 examined student texts, which constituted 4% of all lexical cohesive devices. This finding corresponds with earlier research that recognized the importance of

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synonyms as a mechanism for lexical cohesion. Fatimah and Yunus (2014) found a similar pattern in their analysis of TESL postgraduate students' academic writing, with synonym usage trailing repetition. However, our research contrasts with some recent studies which have emphasized a higher rate of synonym usage. For instance, a study conducted by Saputra and Hakim (2020), looking at lexical cohesion in a broad range of texts, found that synonyms were employed more frequently, reflecting a higher level of language proficiency and awareness of textual cohesion. Similarly, Lee et al (2021) argued that effective use of synonyms is a distinguishing feature of advanced writers, allowing them to increase lexical variety and complexity without disrupting cohesion. According to them, proficient writers tend to utilize synonyms to avoid redundancy and maintain the reader's engagement.

Superordinate terms, which belong to a higher level of a taxonomic hierarchy, offer another method of achieving lexical cohesion. However, in this research, only five instances of superordinate usage were identified across the student writings, making it the least frequently used among all lexical cohesive devices. This lack of superordinate usage is consistent with previous studies that have looked at lexical cohesion in student writing. For instance, Fatimah and Yunus (2014) also found that the use of superordinates was one of the least common strategies employed by students in their writing. Similarly, Lee et al. (2021) observed that less experienced writers tend to underutilize this cohesive device. Conversely, other studies have highlighted the importance of superordinate usage in writing. For example, Wang (2022) argued that using superordinate terms could help establish abstract relationships and concepts, thereby enhancing the overall coherence and depth of the text. Additionally a study by López-Serrano et al. (2019) found that proficient writers frequently use superordinates as a way of enhancing the conceptual complexity of their writing. Thus, the results of this research echo previous studies' findings about the infrequent use of superordinates by less experienced writers. However, they also underscore the need, indicated by other researchers, to promote the use of superordinates among students. This can aid in improving the overall coherence and sophistication of their writing, aligning them more closely with the practices of advanced writers.

Collocation, a form of lexical cohesion, involves the habitual co-occurrence of words with specific meanings. Collocations are used in academic writing to communicate ideas more precisely and efficiently, and they often arise organically from the subject matter being discussed. The use of collocation can help convey a deeper understanding of a particular topic or concept. In this study, students used collocations when discussing interrelated concepts or elements under the same topic. The observed usage of collocation in this research aligns with previous studies. For instance, (Eguchi and Kyle (2023) underscored the importance of collocations in second language writing, arguing that they play a key role in the naturalness and fluency of written texts. Similarly, Estaji and Montazeri (2022) contended that collocations can enhance the richness and precision of students' academic writing, thereby augmenting their ability to communicate complex ideas. However, this research contrasts with studies showing a relatively low usage of collocations among less experienced or non-native writers. For instance, Glass (2022) found that non-native speakers of English often struggle with the appropriate use of collocations. In a similar vein, Alangari (2019) suggested that novice academic writers tend to employ fewer collocations, possibly due to their lack of familiarity with specific disciplinary discourses. This study's findings, while corroborating the recognized significance of collocations in academic writing, underline the need for greater emphasis on their usage in student writing. There appears to be an opportunity for students to use collocations more frequently and effectively to enhance the cohesiveness and precision of their academic writing. Given the importance of collocations, it would be beneficial to incorporate explicit instruction on their usage in writing curricula. This would not only help students in becoming more adept at writing within their specific disciplines but also broaden their overall language competency.

## VI. CONCLUSION

The present research has provided critical insights into the application of lexical cohesion elements in student writing, with an exclusive focus on the research background section of the papers. The study found that students predominantly relied on the mechanism of repetition, which was discernible in all student writings. In stark contrast, other lexical cohesive devices, such as synonyms, superordinates, and collocations, were seldom used. In some cases, students completely omitted the use of these elements in their writing. The overuse of repetition, while providing a degree of cohesion, may inadvertently induce reader fatigue due to the incessant recurrence of the same words. The repetitive nature of the writing potentially compromises the variety and richness that can be attained through a balanced utilization of different lexical cohesive devices. Furthermore, lexical cohesion plays a pivotal role in maintaining the flow and continuity of meaning throughout a piece of writing. Therefore, the importance of its proper use cannot be overstressed. The significance of this research lies in its potential to improve pedagogical practices in teaching academic writing. The study's findings emphasize the need for teaching methodologies that encourage students to diversify their use of lexical cohesive devices, thus contributing to more engaging and high-quality academic writing.

The limitations of the present study include the narrow focus on research background sections of student papers only. Therefore, the results might not be generalized to other parts of academic writing. Additionally, the research did not consider the potential

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influence of students' linguistic backgrounds, which might affect their use of lexical cohesive devices. For future research, it would be beneficial to explore the use of lexical cohesion in different sections of academic papers (e.g., literature review, methods, results, and discussion) to obtain a more comprehensive understanding of students' writing practices. Additionally, investigating the impact of students' linguistic backgrounds on their use of lexical cohesive devices could be a fruitful area of exploration. Such research would contribute to more personalized and effective teaching approaches in academic writing. The influence of teaching interventions on the use of different lexical cohesive devices could also be a potential area of inquiry. By investigating these avenues, future researchers can contribute to improving academic writing skills among students, ultimately leading to enhanced academic performance.

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## The Cost-Based Transfer Pricing: Research in Feed Mills in the Red River Delta Region



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**ABSTRACT:** The authors study cost-based transfer pricing at feed mills in the Red River Delta. Survey data was taken in April 2023 through interviews and questionnaires. Survey subjects are mainly business administrators and accountants. The survey results show that: (1) decisions on the price of internally transferred products are made by the senior management of the enterprises, (2) the enterprises do not promote the autonomy of their member units, and (3) firms use cost-based transfer pricing with base costs are direct material costs, direct labor costs, and manufacturing overheads. Based on the obtained results, the authors offer solutions for cost-based transfer pricing at feed mills in the Red River Delta.

**KEYWORDS:** cost-based transfer pricing, feed mills, Red River Delta

### 1. INTRODUCTION

Research recently published by Vietnam Report shows that feed mills rely heavily on imported raw materials, so they are greatly affected by recent fluctuations in the international market. However, businesses are still confident about the positive growth prospects of this industry in 2023 and in the next 5 years. 40% of businesses and experts surveyed by Vietnam Report said that the prospect of the animal feed industry in 2023 is positive growth and a high growth rate in the next 5 years.

According to the forecast of the Vietnam Poultry Association, Vietnam's animal feed demand will reach about 28-30 million tons per year in the next 5 years, worth 12-13 billion USD with an average growth rate of 11-12% per year, with more than half of feed production (14.5-15 million tons) going to the poultry industry. The main factor driving the growth of the market is the increasing consumption of poultry and livestock meat in Vietnam. This comes from the increasing average income, which increases the purchasing power of people. In addition, the recovery and development of the tourism and hotel industries will continue to drive the growth of the Vietnamese animal feed market in the coming period. In addition, the percentage of livestock households converting from small-scale livestock production to organized farming according to farm size is increasing, which is expected to continue to drive growth opportunities in the animal feed market in the coming years. Thus, the potential for the development of the industrial feed industry is huge.

According to the Department of Livestock Production (2021), the production of animal feed is unevenly distributed among geographical regions and concentrated mainly in the delta provinces. According to livestock magazine (2021), the total production of animal feed in the period from 2015 to 2020 will reach more than 113 million tons. Specifically, the Red River Delta produces more than 46 million tons, accounting for nearly 41% of the total animal feed production in the country. This is also the area with the most feed mills. However, Vietnamese feed mills in general and Red River Delta feed mills in particular are facing many difficulties and challenges in their development. Therefore, enterprises must not only determine a suitable external selling price but also a reasonable internal transfer price. Transfer pricing is not only an accounting tool but also a tool to help managers make the right decisions, contributing to unifying operational goals between the corporation and its member units.

### Study overview

Hirshleifer (1956) was the first to formulate the transfer pricing problem in economics, arguing that the market price is the correct transfer pricing only if the transferred good is produced in a perfectly competitive market. If the market is not perfectly competitive, or if there is no transfer of goods, the standard transfer pricing may be the marginal cost with simplified conditions.

Tang (1992) provides empirical evidence on transfer pricing methods used in US firms. The study found that out of 143 companies that responded to the survey, 46.2% used cost-based transfer pricing. Among these companies, 7.7% use variable manufacturing costs, 53.8% use full manufacturing costs, and 38.5% use full manufacturing costs plus profit.



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Vaysman Igor (1996) studies transfer pricing methods in UK firms. The study concludes that when the optimal profit margin is calculated, the cost-based transfer pricing method will be most commonly used. The transfer pricing is calculated based on the cost reports of the production department. The research results also show that when establishing the assumption that divisional managers cannot share information about their divisions with senior managers because of the complexity of the business environment. In this case, a compensation management system that uses cost-based transfer pricing allows companies to achieve higher expected profits if all decisions are made by senior management.

Nick W. McGaughey (1997) studied transfer pricing in two selected industries, electronics and chemicals, in US companies with operations in the US and abroad. This study has shown that previous studies are still lacking due to the lack of participation of small firms and the lack of comparability across industries. This study overcame those shortcomings. Transfer pricing methods are classified into two groups: cost-oriented methods and non-cost-oriented methods. Answer sheets were obtained from 133 chemical companies and 74 electronics companies. The most common transfer pricing methods used in chemical companies are market-based transfer pricing and cost-based pricing methods. The most commonly used transfer pricing method in electronics companies is the market price, the market price minus selling costs, and the price on a full cost of production basis. 56% of chemical companies use the cost-oriented method, while about 46% of electronics companies use this method of pricing.

Coenenberg et al. (2007) analyze the main advantage of the full-cost transfer pricing method by assuming the situation where the buyer has to pay for the production of the item itself. The seller will not incur a loss as in the variable cost calculation. Coenenberg et al. (2007) point out that variable costs are applied to calculate transfer pricing if the following conditions are met: (i) the product is unsold or only a small amount is sold in the external market; (ii) the division has no difficulty in supplying and distributing.

According to Weber and Schaefer (2008), the application of variable costs creates a substantive decision-making basis for the buyer, however, this causes losses to the seller at a fixed cost. The buyer receives a profit that is not entirely due to the production capacity. In the case of limited internal product supply capacity, units can use many different calculation methods. The scarcity price is used as the transfer pricing. The scarcity price of a product is equal to the sum of its variable and opportunity costs. The idea of full cost based transfer pricing comes from the interests of the seller, and as a general rule, the transfer pricing should at least cover production costs.

### **1. Theoretical foundations of cost-based transfer pricing in manufacturing enterprises**

In Eccles, R.G. (1985), transfer pricing is the price imposed on goods, services and assets transferred within companies, as they move from an organizational entity (a division, unit) to another entity in the business. Thus, while the role of the selling price is to efficiently allocate resources in the market, the role of the transfer price is to efficiently allocate resources within the firm.

According to Vaysam Igor (1996), in decentralized organizations, goods and services are transferred between departments. When products manufactured by one division of a company are transferred to another, these transactions are usually recorded in the accounting books of the relevant divisions. Manufacturing divisions typically record internal revenue, and the purchasing department recognizes an internal cost. The transfer pricing referred to is the amount of the internal transaction. The internal transaction price is called the transfer pricing. Therefore, when managers are evaluated on the basis of the accounting income of their units, transfer pricing influences their management decisions.

According to Horngren and Foster (2012), the price charged for a product or service provided from one department to another within the same organization is called transfer pricing. The pricing of goods or services by divisions within the same organization and within the same country is known as domestic transfer pricing.

Thus, in their opinion, the authors believe that the transferable product price is actually the price charged for the product produced by one department and transferred to another department in the same organization. Transfer pricing affects the sales department's revenue and the purchasing department's costs.

### **Transfer pricing methods**

Garrison et al. (2010) have studied transfer pricing in detail. The authors mention three methods of determining transfer pricing: negotiated-based transfer pricing; cost based transfer pricing and market-based transfer pricing. Drury, C. (2004) states that there is no single transfer pricing system capable of perfectly serving all objectives. But in any case, transfer pricing is always based on a basic principle: the transfer pricing must also equal the marginal cost of the product or service plus the opportunity cost of the transfer.

### **Variable cost based transfer pricing**

According to this method, the transfer pricing is calculated based on the variable costs including production transformation, production and sales, and business management.

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Transfer pricing = Variable cost

Source: compiled by the author

### Full cost based transfer pricing

Under the full cost method, the transfer pricing can include production costs: direct material costs, direct labor costs, manufacturing overhead, or all costs. Full cost-based transfer pricing is in fact quite widely used. The appeal of this approach is that managers can treat product-related decisions as long-term decisions.

Transfer pricing = Full cost

Source: compiled by the author

For the method of determining the transfer price based on the cost and the added profit, the additional profit is determined by taking the sum of the desired return and the selling and administrative expenses divided by the output of goods and services.

When the full cost is used as the cost basis, the add-on is intended to provide a marginal profit to the supplying member. Sometimes, variable costs are used as the base cost and the add-on is used to cover both fixed costs and the contribution margin.

Transfer Pricing = Full Cost + Extra Rate \* Full Cost

Transfer Pricing = Variable Cost + Bonus Rate \* Variable Cost

Source: compiled by the author

## 2. RESEARCH METHODS

Field observations: collect information on the production technology process, production activities, production costs to form the product cost. From there determine the transfer pricing.

Case study: at Dabaco animal feed processing factory, a member of Dabaco Group Company, C.P Vietnam livestock joint stock Company in Hai Duong to collect detailed information in transfer pricing...

Interview: The author's team conducted interviews with two groups of subjects. The first interviewee is a group of managers including Deputy General Director, Deputy Director, and Chief Accountant. The second interviewee is a group of accountants. These are groups of subjects that are directly related to the research topic of the author's group.

Survey form: The survey form is designed for online survey and printed on paper. The online survey form is sent via a link to an email. Paper-based vouchers are sent by post. The authors study and collect information on transfer pricing are raised by management levels at feed mills in the Red River Delta

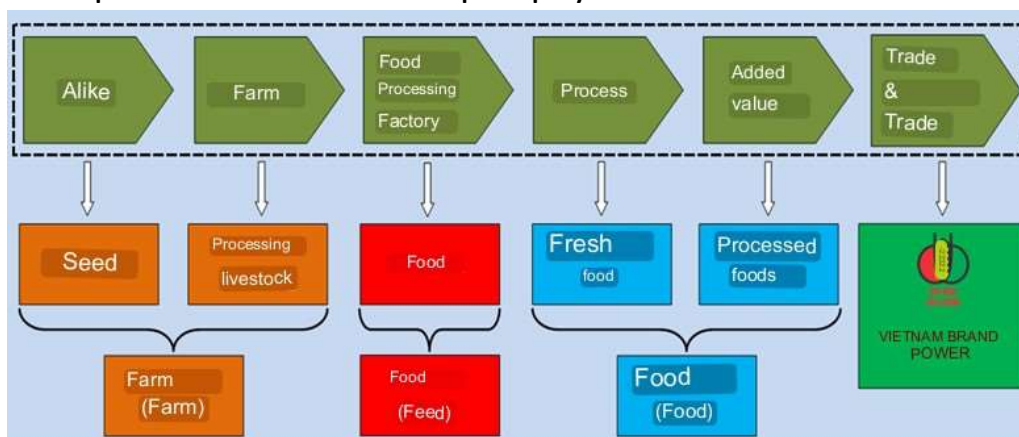
### 2. Actual situation of the cost-based transfer pricing at feed mills in the Red River Delta.

#### 4.1 General information about transfer pricing at feed mills in the Red River Delta

Animal feed (pork bran, chicken bran, etc.) is produced in factories. Then part of the animal feed is sold to the external market, and another part is used within the enterprise. When used within the enterprise, animal feed will be determined at transfer pricing to be transferred to the livestock division as input materials for the livestock division. Therefore, the transfer pricing will be the revenue of the feed production division and the input cost of the livestock division.

A survey of feed mills in the Red River Delta region shows that only six companies use transfer pricing. Because the companies that responded using transfer pricing are all large-scale companies in the animal feed processing industry and the closed production process from farm to table is 3F: Farm – Factory – Food.

Table 1: Integrated food production chain of Dabaco Group Company



## The Cost-Based Transfer Pricing: Research in Feed Mills in the Red River Delta Region

According to the survey results, there are 5/6 businesses that have internal product selling price policies in animal feed processing companies that are determined by managers at the corporation, no discussion from department managers for 83%; and only 1/6 businesses of the total had discussions with the division manager, for 17%. No business allows divisional managers to determine their transfer pricing policy. Thus, in feed mills, decisions about transfer pricing are made by senior managers (Table 2). At Dabaco, the transfer pricing is set by the Deputy General Director in charge of finance and accounting. At C.P. the transfer pricing is decided by the General Director.

**Table 2. Transfer pricing department**

	Number of companies	Percentage
The company's senior manager	5	83%
Senior managers and division managers discuss with each other	1	17%
Total	6	100%

The survey results show that 100% of the member units in the feed mills in the Red River Delta are organized into profit centers. All units determine the revenue and expenses of their division. However, the performance of each division is not used by senior management to evaluate divisional managers.

According to the survey results on transfer pricing targets, the goal of maximizing profit after tax for the corporation was identified as the most important goal. This target selected by the survey companies is 100%. Other goals such as increasing divisional autonomy or evaluating departmental and divisional performance were not mentioned.

The survey results also show that 5/6 businesses are not allowed to buy resources from outside that they can produce. Meanwhile, 1/6 businesses are allowed to buy resources from outside but must get permission from senior management. That shows that most companies with transfer pricing activities can produce and sell outside and ensure internal supply inside the business.

**Table 3. Firms buy resources from outside**

	Number of companies	Percentage
Yes, but with permission from senior management	1	17%
Not allowed to buy	5	83%
Total	6	100%

The survey questionnaire mentions disagreements over transfer pricing policy. Businesses were asked to indicate how to resolve disagreements over their company's transfer pricing policy. The survey results showed that 100% of companies answered that there was no conflict on transfer pricing between divisions. They are all satisfied with their company's transfer pricing system.

### 4.2 The cost-based transfer pricing

Transfer pricing methods are classified into two groups: cost-based pricing methods and non-cost-based pricing methods including market-based pricing methods. And pricing method on the basis of a negotiated price.

The survey results show that 100% of companies with transfer pricing activities use the cost-based transfer pricing method with the base costs being direct material costs, direct labor costs, and general production costs. Other cost-based pricing methods are not used by companies. The transfer pricing method on the basis of market price and negotiated price is not used.

The survey results show that under normal business conditions, the price of the transferred product will fully cover all production costs including direct material costs, direct labor costs, and direct labor costs. General production costs. 100% of companies do not determine the plus profit. Therefore, the price of the internally transferred product is the full production cost of the production department. Because as C.P.'s CFO said, "It doesn't matter whether or not a part of the profit of the production division is added to the transfer price because it is ultimately the profit of the whole company."

It is because companies do not evaluate divisional managers based on the business performance of each division. Therefore, determining whether or not to add profit for the product division does not play an important role in transfer pricing in these companies. Even the transfer pricing may be lower than the production cost of the product as commented by the deputy director of production at Dabaco feed factory "depending on the business goals of the whole company profit or market share at which the company can determine the price of the product to be transferred at a price less than the cost of production". The production department is then willing to take a loss to achieve the overall goal of the company.

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### 3. CONCLUSION AND RECOMMENDATIONS

The survey results show that internal transfer pricing decisions are mostly made by the company's senior managers with little or no communication with divisional managers. Senior managers in feed mills do not allow divisional managers to decide on their division's transfer pricing policy. Therefore, according to the authors' proposal, if the source of information exchanged between senior managers and divisional managers is effective, senior managers can easily obtain information about departments, and transfer pricing decisions can be made by senior management. If the source of information exchange between senior management and division managers is difficult, due to the complexity of the working environment, senior managers have little information about departments or division managers are not willing to share information with senior managers. Transfer pricing decisions should be made by senior management and divisional managers.

When transfer pricing decisions are made by top management without allowing divisional managers to make decisions. This will reduce the autonomy of the parts. Division managers are not allowed to decide on their own the price of products transferred in their division. The division manager at the selling unit is not allowed to decide the selling price of the transferred product. The division manager at the purchasing unit cannot decide on the input costs of his unit. At that time, the goal of the internal transfer price to enhance the role, the autonomy of the divisions will not be achieved. In feed mills, the results of production and business activities are not evaluated under the responsibility of the unit managers. Divisional managers are not responsible for internal sales or internal purchases because the internal sales or internal purchase prices are not set by them. Therefore, do not push the department to strengthen management, save costs to improve quality and reduce product costs. Therefore, as suggested by the authors, division managers should be given more decision-making power regarding transfer pricing decisions. Departments should be given more autonomy. Evaluate departmental managers' compensation and benefits with their department's performance in order to promote departments to strengthen management and control costs to improve quality and reduce product costs.

In order to overcome the limitations when feed mills in the Red River Delta region only use the transfer pricing method on the basis of actual full production costs, According to the authors, transfer pricing is still determined on the basis of production costs. However, transfer pricing in enterprises should reflect their nature and function. Transfer pricing is a tool to effectively allocate resources in a business. Transfer pricing measures the effectiveness, evaluation, and reward of each department as well as divisional managers. If the determination of the transfer pricing is incorrect, it will lead to incorrect decisions related to resource allocation, leading to wrong decisions by the managers.

(1) If the sales department is not operating at full capacity or cannot be sold to the external market, Internal transfers do not generate opportunity costs due to the cancellation of external sales, or even no opportunity costs for intermediate products with no external market. Then the price of the product transferred to the selling department is acceptable:

Transfer pricing > Variable production cost

(2) If the sales department is already operating at full production capacity. When there is an internal transfer of products, the sales department must sacrifice a source of income corresponding to the opportunity cost of the contribution interest resulting from canceling the sale of all these products to outsider. Therefore, the price of the transferred product in this case must be at least equal to the variable costs and loss of contribution due to the cancellation of the contract to sell out on a monthly basis. The transfer price is built as follows:

Transfer pricing = Production cost + Profit plus

Profit plus = Production cost \* Desired rate of profit

Transfer pricing under this method will reflect the business performance of each division. On that basis, it is possible to accurately evaluate each department and the division manager based on the performance of that department. From there, senior managers will have appropriate salary and bonus policies for departmental managers. On the other hand, this transfer pricing should be referenced to the adjusted market price. Animal feed products are mass-produced and highly standardized. Therefore, there is always a market price for these feed products. Feed mills can easily get the market price for reference. However, enterprises should change the market price regulation when determining transfer pricing by deducting sales, transportation, etc. expenses for internal customers. Thus, the adjusted market price will be determined by the following formula:

Adjusted market price = Market price – Cost of selling, shipping...

Transfer pricing and plus, but with the reference of an adjusted market price, will push all departments in the business to strengthen control of administrative costs to improve quality and reduce product costs. When transfer pricing is referenced to the adjusted market price, all departments offer the possibility of a return on investment. At the same time, it helps departments be aware of their reasonable fees compared to product consumption needs. This is also a basis for evaluating the results of managers in each department to consolidate and perfect the responsibility accounting method.

## The Cost-Based Transfer Pricing: Research in Feed Mills in the Red River Delta Region

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## Yoga Exercises to Speed up the Process of Uterine Involution



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**ABSTRACT:** Yoga exercise will restore the strength of the pelvic floor muscles, tighten the muscles of the abdominal wall and perineum, and stimulate the contractions of the uterus. This research aims to determine the efficacy of yoga exercises on the involution of the uterus. Quasi-experimental design is used in this research with the approach of the pre-post test control design. Univariate results from uterine involution could be obtained at the latest 6 days and at the most 14 days. Bivariate analysis with correlation test and independent T test has obtained the following results: mother's age,  $r$  value = 0.277 and  $P$  value = 0.032, labor duration  $r$  = 0.351 and  $P$  value = 0.006. The mothers who did the yoga exercise had an average uterine involution of 8.97 days while those who did not do yoga exercise had the average uterine involution of TFU 13.70 days with  $P$  value of 0.0005. The final results of multivariate was further examined using multiple linear regression test resulting in  $\beta$  coefficient of 4.8 with  $P$  value of 0.0005 and the coefficient of determination ( $R$  square) showing the value of 0.82 and beta value of 0.922. Conclusion: The uterine involution of the mothers who did pregnancy exercise is faster on average by 4.8 days after the age and length of labor variables are controlled. The exercise variable indicates beta value of 0.922, which means that the variable that has the greatest influence on uterine involution is yoga exercises

**KEYWORDS:** Yoga exercise; uterine involution; postpartum period

### I. INTRODUCTION

Post partum hemorrhage in the first day after birth is the cause of more than half of all maternal deaths. Post partum bleeding can occur when risk factors are present and often without warning. It is estimated that postpartum hemorrhage is the cause of 140,000 deaths worldwide every year or about one death every four minutes (Chua et al., 2018). The risk of postpartum hemorrhage occurs around 45% in the first 24 hours of labor and 68-73% within 1 week of labour. Post partum bleeding can be caused by infection, leftover placenta and the involution process that is not going well or is called uterine subinvolution (Anggraeni et al., 2019; Siti Rofi'ah dkk, 2015).

Uterine involution is a very important process for postpartum mothers so that at this stage special care and supervision is needed to ensure the recovery of the postpartum mother's health as before pregnancy. Involution is a process of returning the uterus to its pre-pregnancy state weighing about 60 grams. This process begins immediately after delivery of the placenta as a result of contractions of the smooth muscles of the uterus. Measurement of involution can be done by measuring the height of the uterine fundus, uterine contractions and also by removing lochia (Prawirohardjo Sarwono, 2008).

Mobilization or simple physical activities such as postpartum exercise can prevent postpartum women from uterine subinvolution. Postpartum exercise can make the uterine muscles contract and retract. Doing physical activity during the puerperium can accelerate the return of stretching the pelvic muscles and stretching the lower limbs and reduce pain during the puerperium. Postpartum exercise also affects the decrease in the uterine fundus in postpartum mothers (Hadianti & Sriwenda, 2019). One of the physical activities that can be done for post partum mothers is yoga. According to research conducted by (Anggraeni et al., 2019; Sunarsih & Astuti, 2021) there is the effect of yoga exercise on the process of uterine involution in post partum mothers.

Consistent yoga practice goes a long way in reducing the effects the fight-or-flight response has on the body by giving the body a chance to fully rest. Consistent yoga practice can give mothers confidence and body stability. Yoga can improve posture and coordination, strengthen muscles, increase flexibility, and create balance (Nishitha et al., 2020). According to research conducted by (Anggraeni et al., 2019) yoga for postpartum mothers can reduce muscle tension, improve blood circulation, and stimulate neuro-hormonal and reduce physical and psychological discomfort. Comfortable conditions that occur in the postpartum mother can stimulate the release of the hormone oxytocin and through the bloodstream the hormone is

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transported to the alveoli and causes myoepithelial cells to contract so that the involution process becomes faster (Anggraeni et al., 2019).

### II. RESEARCH METHODS

This type of research is a quasi-experimental with postpartum mothers who are trained in yoga and postpartum mothers who are not trained in gymnastics as a control design. In this study, two groups were used, namely the treatment group (A) and the control group (B). Both were performed by postpartum mothers in the treatment group (A) who were given intervention.

The population in this study were all postpartum mothers with normal deliveries at the Independent Midwife Practice in Bogor District, West Java. The sample in this study was each subject who met the criteria to be a sample member such as primiparas, aged 20-35 years, normal/term pregnancy, hemoglobin (Hb) level of 10-12 gr%, no food restrictions and no postpartum complications. The number of samples used in this study were 36 people.

Data was collected in May - September 2018. Data collection personnel consisted of researchers and assisted by 3 numerators, namely midwives with DIII Midwifery education. The analysis used is multiple linear regression. The validity and reliability of the instrument, prior to conducting the research, training was carried out for the three numerators on yoga exercises and CDs were given to equalize perceptions about the implementation and measurement procedures in the study. After the training, an evaluation is carried out on how to implement yoga exercises for the numerator. To measure the height of the uterine fundus, metlin was used with the same type of material and brand, Merlin, a butterfly brand produced in Shanghai, China. Researchers and numerators equate perceptions about how measurements and evaluations are carried out. To reduce bias, in one patient the process of uterine involution from the first day to the eighth day was evaluated by the same numerator.

### III. RESULT AND DISCUSSION

**Table 1. Distribution of Respondents Based on Mother's Age, Length of Labor (in minutes), Birth Weight and Uterine Involution/Uterus Involution (in days)**

Variable	Mean	SD	Min - Max	95% CI
Age	23,47	4,71	16 – 38	22,25 – 24,68
Labor Length	43,37	31,07	20 – 180	35,34 – 51,39
Baby Birth Weight	3109,67	409,6	2000 – 4000	3003,86 – 3215,48
Uterine Involution	11,33	2,65	6 – 14	10,65 – 12,02

The average age of the mother is 23.47 years with a minimum age of 16 years and a maximum age of 38 years. Judging from the age of the respondents, there are still mothers aged less than 20 years and over 35 years. The ideal reproductive age from a health aspect is at the age of 20-35 years. Mothers who give birth at the age of more than 35 years have a risk of reduced uterine muscle elasticity, and are at risk of complications before and after birth due to decreased uterine muscle elasticity so that uterine contractions are not optimal (Septyara et al., 2020). The average length of labor lasted 43.37 minutes. this is still in the normal category. According to (Prawirohardjo, 2010) The duration of labor for primigravida mothers lasts 1.5 hours to a maximum of 2 hours and for primigravida mothers the duration of labor is 0.5 hours to a maximum of 1 hour (Fatriyani Ishmah, 2020; Prawirohardjo, 2010). The average birth weight of babies is 3109.07 grams, and there are still babies with birth weights of 2000 grams and 4000 grams. Birth weight is related to uterine involution (Rahmadhani et al., 2014). The greater the baby's weight, the greater the uterus will also enlarge optimally, the enlargement of the uterus is caused by mechanical stress due to the growth and development of the growing fetus. A large uterus also requires a longer involution time than a small uterus (Rahmadhani et al., 2014).

**Table 2. Relationship of uterine involution/UTU to maternal age, birth weight and length**

Variable	R Square	P value
Age	-0,277	0,032
Baby Birth Weight	0,122	0,352
Labor Length	-0,351	0,006

The correlation test showed that for the age variable the value of  $r = 0.277$  and the P value = 0.032 means that the older the mother, the longer the process of uterine involution. This is because in women who are over 35 years old, the elasticity of the uterine muscles has reduced and at that age complications often occur before and after childbirth due to reduced elasticity of

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the uterine muscles, causing uterine contractions to be not optimal so that there is a risk of slowing uterine involution (Ningsih, 2021). Mothers who are older are also heavily influenced by the aging process. Where in the aging process there is an increase in fat volume, decreased muscle elasticity and decreased absorption of fat, protein and carbohydrates. If the aging process is associated with a decrease in protein, this will inhibit uterine involution (Widyawaty, 2018).

Meanwhile, the duration of labor was obtained  $r = 0.351$  and the  $P$  value = 0.006, meaning that the relationship between duration of labor and uterine involution shows a moderate relationship and has a negative pattern, namely the longer the mother's labor, the longer the uterine involution process. This is because uterine contractions and retraction last longer so that they have an influence on the involution process. For mothers who experience longer labor, they will easily feel tired, so they can delay early mobilization, even though early mobilization can improve blood circulation, increase body metabolism, the work of organs recovers quickly, including making the process of uterine involution more effective (Kasanah & Alike, 2020).

**Table 3. Relationship of uterine involution to mothers who do yoga and do not do yoga**

Yoga Group	N	Mean	SD	SE Mean	P value
Not doing yoga	30	13,70	0,596	0,109	0,0005
doing yoga	30	8,97	1,52	0,277	

The results of bivariate analysis with an independent T test showed that mothers who did yoga had an average uterine involution of 8.97 days, while mothers who did not do yoga had an average uterine involution of 13.70 days with a  $P$  value of 0.0005 meaning there is a significant difference in the average uterine involution between mothers who did yoga and those who did not do yoga.

**Table 4. Relationship of uterine involution to mothers who do yoga and do not do yoga**

	B	R Square	SE	B	P value
Constant	9,712	0,832	0,832		0,0005
Age	-0,49		0,034	-0,086	0,160
Labor Length	0,008		0,006	0,093	0,165
Yoga Exercise	4,84		0,332	0,922	0,0005

Mothers who did yoga exercise, uterine involution was on average 4.8 days faster after controlling for age and length of labor variables with a  $P$  value of 0.0005. The coefficient of determination (R square) shows a value of 0.823 meaning that the regression model obtained can explain 82.3% of the variation in the TFU (uterine involution) variable while the rest is explained by other variables. The yoga exercise variable shows the greatest beta value (0.922), which means that the variable that has the greatest influence on uterine involution (TFU) is yoga exercise.

This study is in accordance with the theory which states that yoga exercises can accelerate uterine involution. Where the decrease in the height of the uterine fundus can occur properly if the contractions in the uterus are good and continuous. Uterine contractions can increase with yoga exercises for postpartum mothers. Movement Physical exercise can increase muscle contractions in the uterus. Where this occurs due to an increase in calcium ions in the extracells which bind to calmodulin, after calmodulin and potassium bind it will increase myosin kinase and phosphorylase occurs in the myosin head which binds to actin so that periodic muscle tension occurs resulting in muscle contractions in the uterus after contract, uterine involution occurs (Sari, 2018). The results of research conducted by (Anggraeni et al., 2019) showed that yoga exercises had an effect of 40.3% on uterine involution after controlling for parity, frequency of breastfeeding and anxiety. Yoga for post partum mothers is effective for strengthening uterine muscles, improving blood circulation and stimulating neurohormones so that it can accelerate uterine involution (Anggraeni et al., 2019).

## IV. CONCLUSIONS

In mothers who do yoga, the uterus involution is on average 4.8 days faster after controlling for age and length of labor variables with a  $P$  value of 0.0005. The coefficient of determination (R square) shows a value of 0.832 meaning that the regression model obtained can explain 83.2% of the variation in the TFU (uterine involution) variable while the rest is explained by other variables. The yoga exercise variable shows the greatest beta value (0.922), which means that the variable that has the greatest influence on uterine involution (TFU) is yoga exercise.



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This research can be used as material for learning references in postpartum care. Yoga exercises can be used as an alternative to provide comfort to postpartum mothers and accelerate uterine involution. This research can be the basis for further research with the influence of yoga exercise interventions on other variables that are more specific and varied.

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## The Role of Incentives in Moderating the Impact of Work Demand on Work to Family Conflict Experienced By Health Workers at the Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar as Covid-19 Referral Hospital



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**ABSTRACT:** Prof. Hospital Dr. I G. N. G. Ngoerah, which was formerly known as the Sanglah Central General Hospital (RSUP), is the largest Covid-19 referral hospital in Denpasar City. Moreover, this hospital is the most complete hospital with equipment, and is classified as a type A hospital. So, during a Covid-19 pandemic like this, health workers are the spearhead in efforts to deal with Covid-19. Therefore, health workers who are directly involved, such as Covid-19 isolation room workers, are very vulnerable to experiencing work to family conflict. This is due to high work risks and work demands or work demand. Recognizing the important role of health workers, the government pays special attention to health workers through incentives. The purpose of this study was to analyze the effect of work demand on work to family conflict, as well as the role of incentives in mediating the effect of work demand on work to family conflict experienced by health workers at the Covid-19 referral hospital Prof. Dr. I G.N.G. Ngoerah. This research is an explanatory research, with three variables, namely work demand, incentives, and work to family conflict. The research population was all health workers at the Covid-19 Referral Hospital Prof. Dr. I G. N. G. Ngoerah in Denpasar. There are 75 health workers who are directly involved in handling Covid-19, considering that the total population is still below 100, so the sample in this study was determined to be a saturated sample, the data collected was then tabulated and analyzed using the SEM-PLS analysis technique. The results of the analysis show that work demand has a direct positive and significant effect on work to family conflict. It turns out that incentives do not significantly moderate the effect of work demand on work family conflict, and incentives are a predictor variable (predictor moderation).

**KEYWORDS:** Work demands; Work to family conflict, Incentives, Health workers

### I. INTRODUCTION

Hospital is a public facility that functions as a health service center covering the prevention and cure of disease, as well as the maintenance, improvement and restoration of complete health. According to the Decree of the Minister of Health of the Republic of Indonesia Number 1204/MENKES/SK/X/2004 concerning environmental health requirements for hospitals it is stated that hospitals are health service facilities, gathering places for sick and healthy people, or can be a place of disease transmission and allow environmental pollution and health problems<sup>[1]</sup>.

Sanglah General Hospital or Sanglah Central General Hospital or which has now changed its name to Prof. Dr. I Gusti Ngoerah Gde Ngoerah (RSUP Prof. Dr. I G. N. G. Ngoerah) is a regional general hospital located in Denpasar City, Bali Province. Sanglah General Hospital is the main referral hospital and the largest hospital in the Province of Bali. As the main public hospital in Bali, RSUP Prof. Dr. I G. N. G. Ngoerah has health facilities that are fairly complete, and as a general hospital that is still actively operating Prof. Dr. I G. N. G. Ngoerah can accommodate hundreds of people every day, and is the largest Covid-19 referral hospital in Bali.

Work family conflict is considered to be an important problem in today's business world<sup>[2]</sup>. Work family conflict can be defined as a form of role conflict where the demands of the roles of work and family mutually cannot be aligned in several ways<sup>[3]</sup>. In general, work family conflict can be divided into work to family conflict and family to work conflict. During the Covid-19 pandemic as it is today, health workers are the spearhead in efforts to deal with Covid-19. Therefore, health workers who are directly involved (such as Covid-19 isolation room workers) are very vulnerable to experiencing work to family conflict. This is due to high work risks and work demands or work demand.

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Work demand is a trigger for fatigue because the workload is too high but has limited time so that there is a problem through the high desire of a job by requiring it to finish work first rather than other personal matters <sup>[4]</sup>. Work demand is an excess burden which is divided into two, namely quantitative and qualitative <sup>[5]</sup>. Unfinished work due to insufficient time is a quantitative overload. Meanwhile, when an individual has thoughts that he does not have an ability that will be needed to complete a job, it is a qualitative overload. Some aspects of work demand are physical, psychological, social physically or certain psychological <sup>[6]</sup>. Challenges and requests for employees in solving problems, issues, jobs that require using technology or innovation require an individual to learn and adapt <sup>[7]</sup>. Limited time to complete a job and job demands that are always high, causing problems of high desire in a job that must be completed immediately <sup>[8]</sup>.

Recognizing the importance of the role of health workers for the quality of health services related to overcoming the Covid-19 pandemic, the government must pay special attention to health workers. The government needs to understand and know the needs of health workers, because the needs of health workers are one of the reasons why they work well and are focused. According to Utomo <sup>[9]</sup>, if employees' needs are met, then they will get satisfaction which can ultimately affect employee performance. Therefore, as a consequence, companies must manage their employees well by providing incentives to motivate employees to improve their performance. Incentives are deliberately given to employees so that within them a greater enthusiasm arises to improve work performance so that productivity and performance increase <sup>[10]</sup>. Providing incentives within a company plays an important role because it is believed to be able to overcome various problems in an increasingly complex workplace such as low performance and no additional income for employees other than salary. For companies, the provision of incentives is expected to improve employee performance, work productivity, loyalty, discipline, a sense of responsibility for positions and the better the quality of leadership <sup>[11]</sup>. For employees with the provision of incentives they get the opportunity to increase income <sup>[12]</sup>. The aims of this research are to analyse the effect of work demand on the work to family conflict faced by health workers at Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar and the role of incentives in moderating it.

## **II. LITERATURE REVIEW**

### **A. The concept of Work-Family Conflict**

Work family conflict is defined as a consequence of inconsistent demands between the roles at work and in the family<sup>[13]</sup>. Work-Family Conflict is divided into 2 (two), namely (1) Work-to-Family Conflict is a form of inter-role conflict, namely role pressure from work and role pressure from family contradict each other in several ways; (2) Family-of-Work Conflict is a form of conflict between roles including: time, and tension originating from the family that interferes with someone in carrying out their responsibilities at work <sup>[14]</sup>. Family-of-Work Conflict occurs when pressure from family interferes with responsibilities at work. Family-of-Work Conflict means that the role of the family interferes with roles and responsibilities at work <sup>[15]</sup>.

### **B. Work Demand**

Work demand, namely a series of employee main job demands including role ambiguity, role conflict, stress, work pressure and incomplete work <sup>[16]</sup>. Job demand is divided into two, hindrance demands and challenge demands <sup>[17]</sup>. According to Coetzer and Rothmann <sup>[18]</sup>, even though work demand does not refer to negative things, if there are higher demands for effort and costs, it can cause responses such as depression, anxiety and fatigue. Work demand can cause burnout, so it can also have an impact on employee work engagement <sup>[19]</sup>. Job demand can cause employees to be burdened with all the increasing demands, moreover requiring individuals to be able to increase their efforts in completing work <sup>[20]</sup>.

### **C. Incentives**

Incentives are given outside of wages or salaries received by employees every month. The purpose of providing incentives is to increase employee work productivity and to retain high-performing employees to keep working at the company<sup>[21]</sup>. Incentives can be a motivator for company employees to be more enthusiastic at work, so as to improve performance. Incentives are a driving force to take action to achieve goals <sup>[22]</sup>.

## **III. METHODS**

This study uses an explanatory research approach, where explanatory research is research that aims to examine causality between variables that explain a particular phenomenon <sup>[23]</sup>. The three variables in this study are work demand as the independent variable, incentives as the moderating variable, and work to family conflict as the dependent variable. The next research variable is operationalized so that it can be operated <sup>[24]</sup>. Furthermore, the indicators from the results of the operationalization of the variables are used as the basis for compiling a questionnaire which is a data collection instrument with a Likert Scale. Questionnaires were distributed to respondents who were the research sample. It is known that the study

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population is all health workers at Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar. There are 75 health workers who are directly involved in handling Covid-19 in there. Given that the total population is still below 100, the sample in this study is determined to be a saturated sample. So that the entire population is the research respondent. The collected data is then tabulated and analyzed using the SEM-PLS analysis technique, through the SmartPLS application. PLS is a component-based or variant-based Structural Equation Modelling (SEM) [25].

### IV. RESEARCH RESULTS AND DISCUSSION

#### A. Validity and Reliability Test Results of Research Instruments

The questionnaire has also been tested for validity and reliability with the following results. Analysis of the research validity test was carried out using SPSS version 23, namely by correlating the value of each question item with the total value which is the sum of the values of each question item. Based on the results of validity testing, it can be seen that the questions that have fulfilled the requirements can be viewed from the results of their validity with a correlation value of the question item  $> 0.361$ . In the reliability test with the behavioral variable, the Cronbach's Alpha value was  $0.751 > 0.60$ , so it can be concluded that the questions for the behavior variable are reliable or consistent and can be used in subsequent analysis.

#### B. Description of Respondents' Perceptions of Research Variables

Respondents' perceptions are described based on the percentage of respondents' answers to research statements using the mean value (mean) of each item of respondents' perceptions as a whole. To be able to interpret a perception index, the criteria of the three box method can be used [26]. Based on the processing results, it appears that the variables work demand and work to family conflict are rated as high by the respondents with mean values of 3.85 and 3.62 respectively. However, the incentive variable was rated moderate by respondents with a mean value of 3.51, especially for incentive indicators that generate enthusiasm and are fair and proper.

#### C. Results of Data Analysis

##### 1) Evaluation of the Outer Model

An indicator can be said to be valid (convergent validity) if it has a loading factor above 0.6 and an AVE above 0.5 for the intended construct. Based on the results of data processing, it shows that all research indicators have a loading above 0.6 with the construct so that it can be said to be valid. Cronbach's Alpha measures the lower limit of the reliability value of a construct, whereas Composite Reliability measures the true value of the reliability of a construct [27]. The role of thumb value of Cronbach's Alpha or Composite Reliability must be greater than 0.6, but if the results obtained are close to 0.6, this is still acceptable in exploratory studies [28]. Based on the results of data processing, the Cronbach's Alpha and Composite Reliability values of each construct are close to or greater than 0.60 so that it can be said that the gauges used in this study are reliable. Likewise, the Average Variance Extracted (AVE) value is close to or greater than 0.5, so it can be said that all research indicators are valid.

##### 2) Structural Model Testing (Structural Model/Inner Model)

The structural model in PLS needs to be evaluated using R-square for the dependent variable and its significance value is based on the t-values in each path. The results of data processing show an R-square value of 0.530 for the work to family conflict construct. This means that the variability of the work to family conflict construct can be explained by the work demand and incentive constructs of 53 percent, the remaining 47 percent is explained by other factors.

##### 3) Influence Between Variables

Based on the results of data processing, it is known that work demand has a positive and significant direct effect on work to family conflict. This can be seen from the positive regression coefficient, which is 0.749 and the p-value is 0.000 (smaller than 0.05). This means that if there is an increase in work demand, there will also be a significant increase in work to family conflict.

**Table 1. Path Coefficient**

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
Work demand (X) → Work to family conflict (Y)	0.749	0.741	0.075	9.964	0.000
Incentive (M) → Work to family conflict (Y)	-0.006	0.015	0.089	0.066	0.947
Work demand*Incentive (X*M) → Work to family conflict (Y)	0.094	0.084	0.055	1.708	0.088

Note: \*) Non Sig ( $\alpha = 0.05$ )

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Furthermore, incentives directly have a negative but not significant effect on work to family conflict, this can be seen from the regression coefficient which is negative (ie -0.006) and p-value 0.947 (smaller than 0.05). This means that if there is an increase in incentives, it will not be significantly followed by a decrease in work to family conflict, and vice versa.

Regarding the role of incentives as a moderator, the results of data analysis show that incentives do not significantly moderate the effect of work demand on work to family conflict. So considering that incentives directly have a significant effect on work to family conflict, moderation is a predictor of moderation. This means that this moderating variable only plays a role as a predictor variable in the relationship model formed.

### **V. DISCUSSION**

#### **Effect of Work Demand on Work Family Conflict**

Based on the results of data analysis, it is known that work demand directly has a positive and significant effect on work to family conflict. This means that if there is an increase in work demand experienced by health workers at the COVID-19 referral hospital (Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar), it will have an impact on the work to family conflict they experience, and vice versa.

This is consistent with the results of previous studies<sup>[29]</sup> that job demands, husband's social support, and demographic factors have a significant effect on work-family conflict among married bank employees. Both forms of demand (job and family demand) have a significant direct effect on work interfering with family (WIF) and family interfering work (FIW). Time-based, tension-based and strain-based demands on 2,155 adult workers living with family members<sup>[30]</sup>. The results found that tension-based work demand has a strong effect on work family conflict. Furthermore, it was explained that job demands had a significant impact on the work-family conflict of preschool teachers<sup>[31]</sup>.

#### **The Role of Incentives in Moderating the Effect of Work Demand on Work Family Conflict**

The results of the analysis show that incentives moderate/inappropriately strengthen the effect of work demand on work to family conflict. Furthermore, bearing in mind that incentives have a direct and significant negative effect on work family conflict, moderation is pseudo or called a quasy moderator. This means that even though there is an increase in incentives obtained by health workers at the COVID-19 referral hospital (Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar), this does not moderate the effect of work demand on work family conflict.

Regarding the relationship between incentives and work family conflict, it was found that employees adjust their perceptions of work family conflict on the basis of their salary satisfaction. Generally, when employees feel that their rewards are not in a work relationship unequal to their input, then they view the exchange relationship as unfavourable, they feel an unfair trade-off between family time and work time. The norm of reciprocity also underlies the salary satisfaction-WFC relationship: the more satisfied employees are with their pay, the less they feel that work-related tensions and time demands hinder them from fulfilling family responsibilities. This view is also consistent with Spillover's theory, which shows that feelings of salary satisfaction occur in the family domain and reduce perceptions of work family conflict. As the results of the previous descriptive analysis of variables, where respondents gave a moderate assessment of incentives, especially from the point of view that incentives generate enthusiasm and are fair and proper.

After conducting follow-up interviews with several health workers, information was obtained that even though there were additional incentives received by the health workers serving as the Covid-19 task force, this did not significantly affect family conflicts that might arise. Because there is a perception that incentives in the form of money cannot replace extra work time, as well as the risk of infection while on duty.

### **VI. CONCLUSIONS**

Based on the results of the study it can be concluded, namely (1) Work demand has a direct positive and significant effect on work family conflict experienced by health workers at Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar. This means that an increase in work demand will significantly increase the work family conflict experienced by health workers; (2) Incentives did not significantly moderate the effect of work demand on the work family conflict of health workers at Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar. The nature of moderation is predictor moderation, where incentives are the only predictor variable.

In accordance with the results of the research, the things that are suggested include: (1) To the management of Prof. Dr. I G.N.G. Ngoerah Hospital in Denpasar needs to evaluate the incentives that have been given to employees, especially health workers. The incentives referred to are not only incentives in the form of money, but also need to provide incentives in other forms that meet the elements of fairness and decency, so as to increase morale; (2) further research can be carried out by

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focusing on the factors that cause work family conflict. In addition, it is necessary to conduct research on differences in work family conflict on gender, as well as work, as well as other demographic factors. This review can be done by examining role theory and role conflict theory.

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## The Role of Positive Emotion in Mediateing Sales Promotion towards Impluse Buying In E-Commerce Shopee (Study on Shopee Consumers in Denpasar City)



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**ABSTRACT:** The aim of this research is explains the role of positive emotion in mediating sales promotion on impulse buying in e-commerce for shopee consumers in Denpasar city. The population of this study is Shopee consumers in Denpasar City whose exact number is unknown (Infinite). The number of samples used in this study were 120 respondents, taken by purposive sampling technique. The data collection method used a questionnaire which was distributed online via google form. The data analysis technique used was Structural Equation Modeling based on Partial Least Square (SEM-PLS). The results of the analysis show that positive emotion is able to strengthen the influence of sales promotion on impulse buying. This research is expected to provide relevant and useful input for companies related to efforts to improve company performance.

**KEYWORDS:** Positive Emotion, Sales Promotion, Impulse Buying, Shopee

### INTRODUCTION

Technological developments in the digital era have changed people's shopping behavior around the world, including in Indonesia. The shopping behavior of the Indonesian people, who previously shopped at offline stores, is slowly moving to online shopping. This is a good opportunity and opportunity for the wider community, one of which is business people in Indonesia. E-Commerce, also known as electronic commerce, is an activity related to buying, selling, marketing goods or services by utilizing electronic systems such as the internet or computer networks (Linda, 2018). With e-Commerce, the process of selling or buying transactions can be obtained in an efficient way (Nofiyanti & Wiwoho, 2020), because transactions can be done anytime and anywhere. Based on market place data from Katadata, in 2021 Shopee will become the marketplace with the highest Gross Merchandise Value (GMV) beating several other marketplaces, Shopee is one of the marketplaces with fairly good growth performance to become the top ranking market place for the app store ranking category, ranking play store. (databooks.katadata, 2021). To win the competition between e-commerce, Shopee conducts marketing communication activities that encourage impulse buying.

According to Danuza (2018), impulsive buying is someone who makes an impulsive purchase or is commonly called an unplanned purchase, which is a person's behavior in which a person does not plan anything while shopping. Phenomena like this can be exploited by marketers by creating attractive stimuli to further increase impulse buying, and one of the stimuli that can support impulse buying is sales promotion.

The researcher also conducted a pre-survey of 30 respondents who had shopped at Shopee e-commerce and live in Denpasar city, showing that 83.3% of Shopee customers made impulse buying because of sales promotions and 80% because of a good and happy mood. will affect the impulse buying of these customers. This proves that sales promotion and positive emotion can influence impulse buying.

Forms of sales promotion carried out to increase sales include price discounts, free gifts, and joint sales (Oktivera & Felita, 2019). Sales promotion is able to attract attention and provide information that introduces customers to the product. Research conducted by (Idris, 2018) and (Maulana, 2018) states that sales promotion has a significant positive effect on impulse buying. The results of this study are also supported by (Mamuaya & Aditya, 2018), (Ismail & Ahmed Siddiqui, 2019), and (Negara & Kusuma Dewi, 2018) where sales promotion has a positive effect on impulsive buying. However, different results were obtained by (Septiana & Widyastuti, 2021) and Florensia et al (2019) which stated that sales promotion had no significant effect on impulsive buying. This negative effect is caused by the greater the variable discount offered, the price before the discount is installed is much higher than the normal price previously set, so there is no positive emotion that can mediate the effect of sales promotion



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on impulse buying. Research conducted by (Hapsari Nindyakirana & Maftukhah, 2016) and (Devi & Jatra, 2020) found that there was an indirect effect of sales promotion and impulse buying through positive emotion as a mediating variable.

Based on the phenomena and differences in the results of research conducted by several previous researchers and the description of the background above, I am interested in conducting this research to find out how sales promotion influences impulse buying with positive emotion as a mediating variable at PT Shopee Indonesia towards Shopee users in Denpasar City.

H1 :*Sales Promotions*positive and significant effect on Impulse Buying.

According to (Idris, 2018) and (Maulana, 2018) the results show that sales promotion has a positive and significant effect on impulse buying. The same results were obtained by research conducted by(Mamuaya & Aditya, 2018), (Ismail & Ahmed Siddiqui, 2019), (Negara & Kusuma Dewi, 2018) found that sales promotion had a positive and significant effect on impulse buying. However, different results were obtained from research conducted by (Septiana & Widyastuti, 2021) and (Jovita Florensia, 2019) finding that there was no significant relationship between sales promotion and impulse buying.

H2: Sales Promotion has a positive and significant effect on Positive Emotion

Research conducted by (Rosyida & Lestari Anjarwati, 2016) found that sales promotion had a positive and significant effect on positive emotion. The same results were obtained by research conducted by (Idris, 2018) which found that sales promotion had a positive effect on positive emotion.

H3: Positive Emotion has a positive and significant effect on Impulse Buying

According to Pebrianti & Ratnawati's research, 2020 found that positive emotion had a positive and significant effect on impulse buying. The same results were also obtained by research conducted by (Rosyida & Lestari Anjarwati, 2016) obtaining the result that positive emotion has a positive and significant effect on impulse buying

H4: Positive Emotion is able to significantly mediate the Influence of Sales Promotion on Impulse Buying.

According to (Hapsari Nindyakirana & Maftukhah, 2016) the results show that there is an indirect effect from sales promotion and impulse buying through positive emotion as a mediating variable.

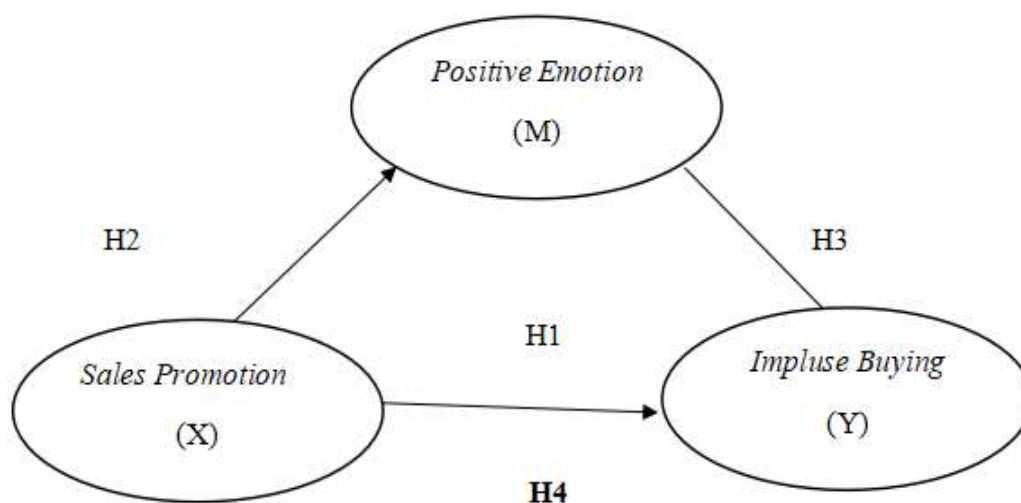


Figure 1: Research Concept Framework

### RESEARCH METHODS

Approach used in this study areassociative research with causality type. Associative research is research that aims to determine the effect or relationship between two or more variables. This research was conducted in Denpasar City. The reason the researcher chose Denpasar City as the research location is that it has a good level of well-being and has high activity and sensitivity to technology so that it can be assumed that the level of online consumption is high Primary data in this study obtained in full from respondents through a list of questions asked. Primary data collected includes respondent identity data, respondents' opinions about impulse buying which involves positive emotion, and sales promotion. Secondary data in this study were obtained from literature and previous research journals.

The object in this research is*impulse buying*Shopee e-commerce users are reviewed based on the influence of positive emotion and sale promotion felt by Shopee application users domiciled in Denpasar City. The exogenous variable in this study is

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Sales Promotion X. The endogenous variable in this study is Impluse Buying Y. The mediating variable in this study is Positive Emotion M.

The population of this study are Shopee consumers in Denpasar City. This research was analyzed with a multivariate sample suggested at least 5 to 10 times the number of indicators studied (Sugiyono, 2018: 155). The number of indicators used is 12 so the number of samples needed is  $12 \times 10 = 120$  respondents. In this study, 120 respondents were taken, which can be said to be sufficient to prove the results of this study.

**Table 1. Research Variable Indicators**

Variable	Indicator	Source
Impulse Buying (Y)	Spontaneity	(Engel et al., 1995)
	Strength, compulsion and intensity	
	Excitement and stimulation	
Sales Promotion (X)	Indifference to consequences	(Kotler and Keller, 2016)
	Promotion frequency	
	Promotional quality	
	Promotion quantity	
	Promotion time	
Positive Emotion (M)	Determination or suitability of promotion goals	Darma and Japrianto (2014) in Gunawan Kwan, (2016)
	<i>Pleasure</i>	
	<i>Arousal dominance</i>	

The method used to collect data is by distributing questionnaires in the form of statements. The questionnaire was distributed using a Google form in the form of a link that was distributed to social media such as WhatsApp, Line and Instagram. The contents of the questionnaire focused on the factors that influence impulse buying, namely positive emotion and sales promotion. The results of each section will show the influence of these factors on the creation of impulse buying on the Shopee application.

The data analysis technique used in this study is Descriptive Statistical Analysis, Inferential Statistical Analysis, Structural Equation Modeling based on Partial Least Square (SEM-PLS).

### DISCUSSION RESULT

The research data was obtained from the results of a questionnaire that was answered by 120 respondents who had used the Shopee application in the last 6 months in the city of Denpasar.

**Table 2: Respondents of Shopee Application Users in Denpasar City**

No	Characteristics	Classification	Amount Respondents (person)	Percentage Respondents (percent)
1	Gender	Man	58	48,3
		Woman	62	51,7
<b>Amount</b>			<b>120</b>	<b>100</b>
2	Income or pocket money per month:	≤ IDR 1,000,000	47	39,1
		IDR 1,000,001-1,500,000	31	25,4
		≥ IDR 1,500,001	43	35,5
<b>Amount</b>			<b>120</b>	<b>100</b>
4	Age	15 – 18 Years	13	10,8
		>18 – 34 Years	54	45

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		>34 – 54 Years	47	39,2
		> 54 Years	6	5
<b>Amount</b>			<b>120</b>	<b>100</b>
		Student / Student	42	35
		Private employees	11	9,1
5	Work	civil servant	26	21,6
		Self-employed	12	10
		Housewife	9	7,5
		Other	20	16,6
<b>Amount</b>			<b>120</b>	<b>100</b>

**Table 3: Recapitulation of Research Instrument Validity Test Results**

Variable	Indicator	Correlation coefficient (Pearson Correlation)	Sig. (2-tailed)	Ket.
<i>Sales promotions (X)</i>	X1.1	0.769	0.000	<i>Valid</i>
	X1.2	0.870	0.000	<i>Valid</i>
	X1.3	0.710	0.000	<i>Valid</i>
	X1.4	0.635	0.000	<i>Valid</i>
	X1.5	0.913	0.000	<i>Valid</i>
<i>Positive emotions (M)</i>	M1.1	0.747	0.000	<i>Valid</i>
	M1.2	0.755	0.000	<i>Valid</i>
	M1.3	0.770	0.000	<i>Valid</i>
<i>Impulse buying (Y)</i>	Y1.1	0.903	0.000	<i>Valid</i>
	Y1.2	0.965	0.000	<i>Valid</i>
	Y1.3	0.934	0.000	<i>Valid</i>
	Y1.4	0.843	0.000	<i>Valid</i>

The results of the validity test in Table 3 show that all research instruments used to measure Sales promotion, positive emotion and impulse buying variables have a correlation coefficient with a total score of all statement items greater than 0.30 with a significance of less than 0.05. This shows that the statement items in the research instrument are valid and appropriate to be used as research instruments.

**Table 4: Recapitulation of Research Instrument Reliability Test Results**

No.	Variable	Cronbach's Alpha	Information
1	<i>Sales promotion(X1)</i>	0.800	Reliable
2	<i>Positive emotions(M1)</i>	0.797	Reliable
3	<i>Impulse buying(Y2)</i>	0.844	Reliable

The reliability test results presented in Table 4 show that all research instruments have a Cronbach's Alpha coefficient of more than 0.70. So it can be stated that all variables have met the reliability requirements so that they can be used to conduct research.

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**Table 5: Descriptive Statistical Test Results**

	STS	TS	CS	S	SS	Total Score	Average	Criteria
X1.1	0	0	6	44	70	544	4.53	Very high
X1.2	0	0	5	51	64	539	4.49	Very high
X1.3	0	1	6	45	68	540	4.50	Very high
X1.4	0	2	9	48	61	528	4.40	Very high
X1.5	1	3	14	48	54	511	4.26	Very high
X1	Average Sales Promotion score					2662	4.44	Very high
M1.1	0	12	29	43	36	463	3.86	Tall
M1.2	1	4	26	43	46	489	4.08	Tall
M1.3	3	8	22	45	42	475	3.96	Tall
M1	Average Positive Emotion score					1427	3.96	Tall
Y1.1	2	9	30	40	39	465	3.88	Tall
Y1.2	1	14	17	53	35	467	3.89	Tall
Y1.3	2	17	33	37	31	438	3.65	Tall
Y1.4	2	7	12	32	67	515	4.29	Very high
Y1	Average Impulse Buying score					1885	3.93	Tall

The results of the descriptive analysis as presented in table 5 show that the sales promotion variable as a whole obtains an average value of 4.44, which means that Shopee has implemented a very high sales promotion.

The results of the descriptive analysis as presented in table 5 show that the positive emotion variable as a whole obtains an average value of 3.96, which means that Shopee consumers already have a high sense of positive emotion.

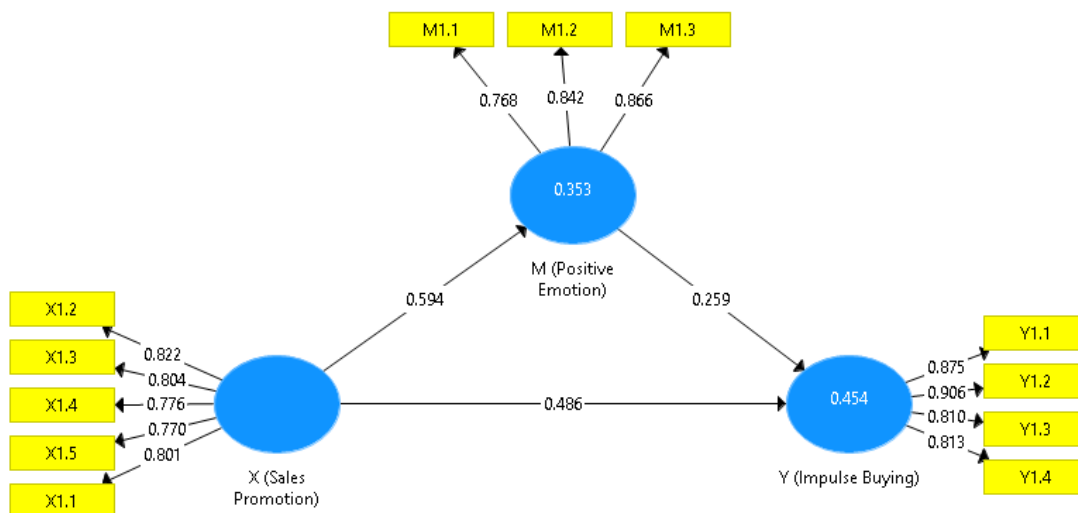
The results of the descriptive analysis as presented in table 5 show that the impulse buying variable as a whole obtains an average value of 3.93, which means that the majority of consumers have high impulse buying at Shopee.

**Table 6: Convergent Validity Test Results**

	M (Positive Emotion)	X (Sales Promotion)	Y (Impulse Buying)
<b>M1.1</b>	<b>0.768</b>		
<b>M1.2</b>	<b>0.842</b>		
<b>M1.3</b>	<b>0.866</b>		
<b>X1.1</b>		<b>0.801</b>	
<b>X1.2</b>		<b>0.822</b>	
<b>X1.3</b>		<b>0.804</b>	
<b>X1.4</b>		<b>0.776</b>	
<b>X1.5</b>		<b>0.770</b>	
<b>Y1.1</b>			<b>0.875</b>
<b>Y1.2</b>			<b>0.906</b>
<b>Y1.3</b>			<b>0.810</b>
<b>Y1.4</b>			<b>0.813</b>

The results of the convergent validity test in Table 6 show that all outer loading variable indicator values have a value greater than 0.70 with a p value of 0.000 less than 0.05. Thus, it can be concluded that all indicators have met the requirements of convergent validity. The results of the convergent validity test can be seen in the following figure

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**Figure 2: The PLS Algorithm Model**

**Table 7: Discriminant Validity Results**

	<i>Average Variances Extracted (AVE)</i>	<i>AVE root(<math>\sqrt{AVE}</math>)</i>
<b>M (Positive Emotion)</b>	<b>0.683</b>	<b>0.826</b>
<b>X (Sales Promotion)</b>	<b>0.631</b>	<b>0.795</b>
<b>Y (Impulse Buying)</b>	<b>0.726</b>	<b>0.852</b>

Based on Table 7, it can be explained that the AVE value of the Sales promotion variable, Positive emotion and Impulse buying is greater than 0.5, thus, all variables in the tested model meet the discriminant validity criteria. The model is said to be good if the AVE of each variable is greater than 0.50. The output results show that the AVE value of all variables is greater than 0.50 so that the model can be said to be valid. The results of the discriminant validity test can also be done by comparing the cross loading values.

**Table 8: Cross Loading Test Results**

	<b>M (Positive Emotion)</b>	<b>X (Sales Promotion)</b>	<b>Y (Impulse Buying)</b>
<b>M1.1</b>	<b>0.768</b>	0.403	0.225
<b>M1.2</b>	<b>0.842</b>	0.418	0.286
<b>M1.3</b>	<b>0.866</b>	0.587	0.673
<b>X1.1</b>	0.448	<b>0.801</b>	0.381
<b>X1.2</b>	0.473	<b>0.822</b>	0.545
<b>X1.3</b>	0.344	<b>0.804</b>	0.503
<b>X1.4</b>	0.345	<b>0.776</b>	0.594
<b>X1.5</b>	0.681	<b>0.770</b>	0.498
<b>Y1.1</b>	0.640	0.596	<b>0.875</b>
<b>Y1.2</b>	0.476	0.564	<b>0.906</b>
<b>Y1.3</b>	0.403	0.449	<b>0.810</b>
<b>Y1.4</b>	0.298	0.557	<b>0.813</b>

Based on Table 8, it can be seen that the correlation of indicators X1, X2, X3, X4, and X5 with the variables is higher than the correlation with other variables. Because the cross loading value on the indicator variable X1 (sales promotion) has a greater correlation with its indicators than with other variables, it can be said that variable X1 (sales promotion) has fulfilled discriminant validity. Furthermore, the correlation of indicators M1.1, M1.2, M1.3, with the variables is higher than the correlation with other variables. Because the cross loading value on the indicator variable M1 (positive emotion) has a greater correlation with its

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indicators than with other variables, it can be said that the variable M1 (positive emotion) has fulfilled discriminant validity. Likewise the correlation indicators Y2.1, Y2. 2, Y2.3, Y2.4, the variables are higher than the correlation with other variables. Because the cross loading value on the indicator variable Y2 (Impulse buying) has a greater correlation with its indicators than with other variables, it can be said that variable Y2 (Impulse buying) has fulfilled discriminant validity.

**Table 9: Instrument Reliability Research Results**

	Cronbach's Alpha	Composite reliability	Information
M (Positive Emotion)	0.789	0.866	Reliable
X (Sales Promotion)	0.855	0.895	Reliable
Y (Impulse Buying)	0.874	0.914	Reliable

The output results of composite reliability and cronbach's alpha variable Sales promotion, positive emotion, and impulse buying are all above 0.70. Thus, it can be explained that all variables have good reliability.

**Table 10: Bound Variable R-square value**

	R Square	R Square Adjusted
M1 (Positive emotions)	0.353	0.347
Y2 (Impulse buying)	0.454	0.444

Based on Table 10, the model of the influence of Sales promotion on Positive emotion gives an R-square value of 0.353 which can be interpreted that the variability of the Positive emotion variable can be explained by the Variability of the Sales promotion variable of 35.3 percent, while 64.7 percent is explained by other variables outside those studied . Furthermore, the model of the influence of Sales promotion and Positive emotion on impulse buying gives an R-square value of 0.454 which can be interpreted that the variability of the impulse buying variable can be explained by the variability of the Sales promotion variable and Positive emotion of 45.4 percent, while 54.6 percent the rest is explained by other variables outside those studied.

### 1) Q-Square Predictive Relevance(Q2 )

The Q2 value has a value with a range of  $0 < Q2 < 1$ , where the closer to 1 means the better the model. To measure how well the observed values are generated by the model and also the parameter estimates, it is necessary to calculate Q-square (Q2) as follows:

$$\begin{aligned}
 Q2 &= 1 - (1 - (R1)^2) (1 - (R2)^2) \\
 &= 1 - (1 - 0.353) (1 - 0.454) \\
 &= 1 - (0.647) (0.546) \\
 &= 1 - 0.353 \\
 &= 0.6467
 \end{aligned}$$

The results of these calculations show that the Q2 value is 0.6467 so that it can be concluded that the model has good predictive relevance. Thus, it can be explained that 64.67 percent of the variation in impulse buying is influenced by sales promotion and positive emotion, while the remaining 35.33 percent is influenced by other variables not examined in this study.

### 2) Goodness of Fit (GoF) Test Results

The Goodness of Fit test is used to assess the accuracy of the model being tested whether it is good (fit) or not. The GoF score criteria are 0.10, 0.25 and 0.36 which shows that GoF is small, GoF Medium and GoF Large (Ghozali and Latan, 2015). The Goodness of Fit formula used is:

$$GOF = \sqrt{AVE \times R^2}$$

Information :

$$\begin{aligned}
 \overline{AVE} &= \text{rata} - \text{rata Ave} \\
 \overline{R^2} &= \text{rata} - \text{rata } R^2
 \end{aligned}$$

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Table 11: Goodness of Fit Test Results

	Average Variances Extracted (AVE)	R Square
M (Positive Emotion)	0.683	0.353
X (Sales Promotion)	0.631	
Y (Impulse Buying)	0.726	0.454
Average	0.680	0.408

Table 11 shows that the average value of R Square is 0.408, then the average value of AVE is 0.680, the results of calculating the Goodness of Fit are as follows:

$$GoF = \sqrt{AVE \times R^2}$$

$$= \sqrt{0.680 \times 0.408} = 0.524$$

A GoF value of 0.365 is classified as large, a GoF value of 0.25 is classified as medium/moderate and a GoF value of less than 0.25 is classified as small (Hair, 2017). A model that has a large GoF value means that it is more appropriate in describing the research sample. Based on the results of the Goodness of Fit (GoF) calculation above, a GoF value of 0.524 is obtained so that it can be concluded that the model in this study has a relatively large research model fit.

### Results of Direct Effect Test and Total Effect Between Variables

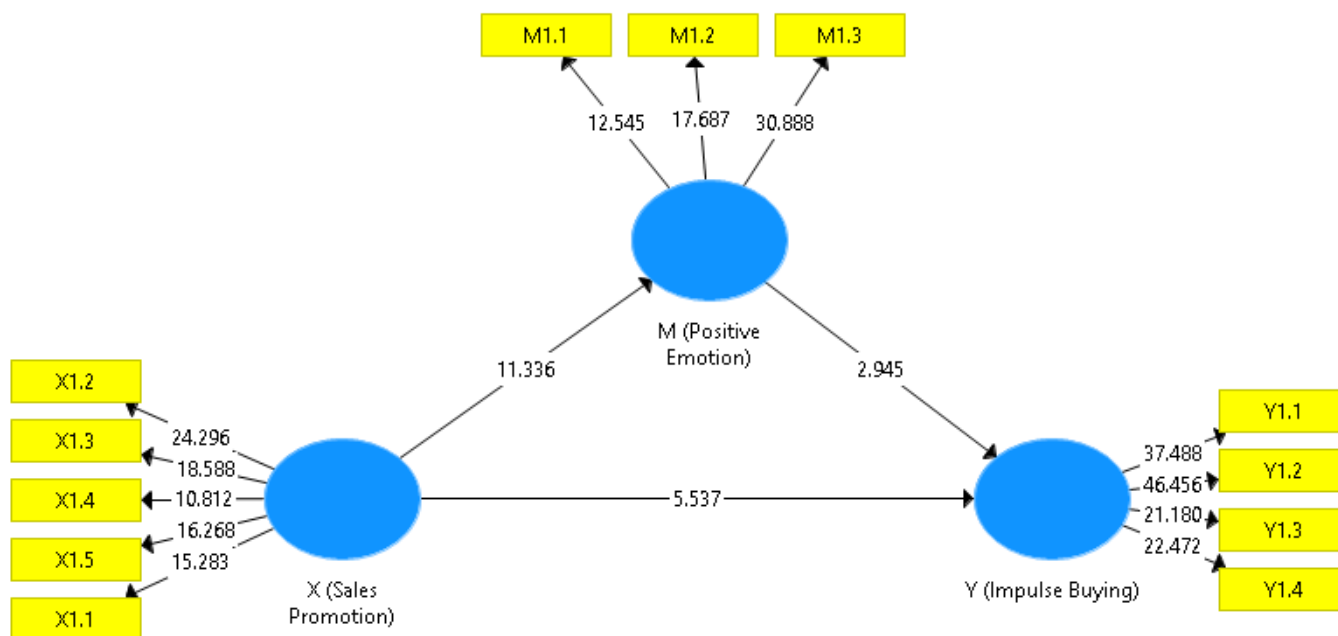


Figure 3: Direct Influence Empirical Model

In Figure 3 it is explained that Sales promotion has a direct effect on impulse buying with a t statistic value of 5.537. Sales promotion has a direct effect on positive emotion with a statistical t value of 11.336. Positive emotion has a direct effect on impulse buying with a statistical t value of 2.945.

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**Table 12: Total Influence Test Results Between Variables**

	Original sample (O)	T Statistics ( O/STDEV )	P Values	Information
M (Positive Emotion) -> Y (Impulse Buying)	0.259	0.088	2,945	H1 is accepted (Positive & significant effect)
X (Sales Promotion) -> M (Positive Emotion)	0.594	0.052	11,336	H2 accepted (Positive & significant effect)
X (Sales Promotion) -> Y (Impulse Buying)	0.486	0.088	5,537	H3 accepted (Positive & significant impact)

Based on Table 12, the influence between variables can be explained as follows:

- 1) Hypothesis testing on influence *Sales promotion* on Positive emotion produces a correlation coefficient value of 0.594, then Sales promotion has a positive effect on Positive emotion. The t Statistics value was 11.336 ( $>$  t-critical 1.96) with a p value of  $0.000 < 0.050$ , so the effect of sales promotion on positive emotion was significant. Thus, hypothesis 1 (H1) which states that sales promotion has a positive and significant effect on positive emotion is accepted
- 2) Hypothesis testing on influence *Sales promotion* on impulse buying produces a correlation coefficient value of 0.486, then sales promotion has a positive effect on impulse buying. The t Statistics value was 5.537 ( $>$  t-critical 1.96) with a p value of  $0.000 < 0.050$ , so the effect of sales promotion on impulse buying was significant. Thus, hypothesis 2 (H2) which states that sales promotion has a positive and significant effect on impulse buying is accepted.
- 3) Hypothesis testing on influence *Positive emotion* on impulse buying produces a correlation coefficient value of 0.259, so positive emotion has a positive effect on impulse buying. The t Statistics value is 2.945 ( $>$  t-critical 1.96) with a p value of  $0.003 < 0.050$ , so the effect of positive emotion on impulse buying is significant. Thus, hypothesis 3 (H3) which states that positive emotion has a positive and significant effect on impulse buying is accepted.

**Table 13: Indirect Effect Test Results (Specific Indirect Effect)**

	Original Sample (O)	Sample Means (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
X (Sales promotion) -> M1 (Positive emotion) -> Y2 (Impulse buying)	0.154	0.152	0.057	2,712	<b>0.007</b>

Based on Table 13, the results of the indirect influence between variables are as follows:

- 1) *Sales promotion* on impulse buying through Positive emotion obtains a correlation value of 0.154 with a t statistic of 2.712  $>$  1.96, and a p value of  $0.007 < 0.050$ , so there is a significant positive indirect effect between Sales promotion on impulse buying through Positive emotion

**Table 14: Recapitulation of Mediation Variable Testing Results**

Variable Mediation	Effect				Information
	(A)	(B)	(C)	(d)	
X (Sales promotion) -> M1 (Positive emotion) -> Y2 (Impulse buying)	0.154 (Sig.)	0.486 (Sig.)	0.594 (Sig.)	0.259 (Sig.)	Partial Mediation



## The Role of Positive Emotion in Mediating Sales Promotion towards Impulse Buying In E-Commerce Shopee (Study on Shopee Consumers in Denpasar City)

Description: significance (Sig.) = t-statistic > 1.96 at  $\alpha = 5\%$

(A) : indirect effect of the independent variable on the dependent variable

(B) : the direct effect of the independent variable on the dependent variable

(C) : the direct effect of the independent variable on the mediating variable

(D) : the direct effect of the mediating variable on the dependent variable

Based on the results of examining the four effects above (effects A, B, C, and D), it can then be proven and intervened from the mediating variables with the following criteria:

- 1) If the indirect effect (p1) . (p2) is significant and the direct effect (p3) is significant and points in the same direction, so it is called complementary partial mediation.
- 2) If the indirect effect (p1) . (p2) is significant and the direct effect (p3) is significant and points in the opposite direction, so it is called competitive partial mediation.
- 3) If the indirect effect (p1) . (p2) is significant and the direct effect (p3) is not significant, meaning that there is only indirect influence by acting as a full mediation.
- 4) If the indirect effect (p1) . (p2) the results are not significant and the direct effect (p3) is significant, meaning that there is a direct influence so that there is no role as a mediation (no mediation).
- 5) If the indirect effect (p1) . (p2) the results are not significant and the direct effect (p3) is not significant, so there is no direct influence and no role as a mediation (no mediation).

Based on the criteria in examining the mediation effect, then from table above, information can be obtained as presented in the following explanation:

- 1) *Positive emotions* able to mediate partial on the indirect effect of sales promotion on impulse buying. These results are shown from the mediation test carried out, namely that the direct influence effect has a significant value, while the A effect which is an indirect effect of the independent variable (sales promotion) on the dependent variable (impulse buying) involving the mediation variable has a significant value. Thus, Positive emotion is a competitive partial mediation.

### CONCLUSION

Based on From the results of the previous research and discussion, it can be concluded that several things are first, sales promotion has a positive and significant effect on impulse buying. This shows that the better the sales promotion, the higher the impulse buying. Second, Sales promotion has a positive and significant effect on Positive emotion. This shows that the better the sales promotion, the higher the positive emotion. Third, positive emotion has a positive and significant effect on impulse buying. This shows that the higher the positive emotion, the higher the impulse buying. Fourth, *Positive emotions* able to mediate partially on the indirect effect of sales promotion on impulse buying. This shows that positive emotion is able to strengthen the influence of sales promotion on impulse buying.

### RESEARCH LIMITATIONS

Based on the research that has been done found several limitations in this study, namely this research was only conducted in Denpasar City so the results could not reach a wider environment and an environment that was always changing, this research only explained the variables of sales promotion, positive emotion to strengthen impulse buying. so there are still other variables that can affect impulse buying and this research is only conducted at a certain point in time (cross section) while the environment can change at any time, so this research is important to do in the future.

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## Nexus between Financial Crises and Economic Stability; Case Study of 'Taper Tantrum' Of 2013 and Its Impact on Economic Stability of Asian Countries



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**ABSTRACT:** Purpose: The purpose of this study is to examine the impact of the "Taper Tantrum" crisis on economic stability in Asian countries. The study seeks to contribute to the understanding of financial crises and provide insights for policymakers to enhance economic stability and resilience in the face of similar disruptions.

Methodology: The methodology includes a comparative analysis of pre- and post-crisis periods to identify changes and trends. The findings are interpreted to draw meaningful conclusions about the effects of the crisis and the effectiveness of policy responses.

Findings: The findings of the study indicate that the "Taper Tantrum" crisis had a significant short-term impact on economic stability in the selected Asian countries. It led to a slowdown in GDP growth, increased inflation rates, and higher unemployment levels.

Limitations: The analysis focuses solely on the "Taper Tantrum" crisis and its impact on economic stability in Asian countries. Other factors and events that may have influenced economic conditions during the same period are not extensively examined. Secondly, the study relies on available data sources, which may have limitations in terms of accuracy, reliability, and coverage. This could affect the robustness of the findings.

Practical implications: This study suggest the need for proactive policy measures to mitigate the impact of financial crises on economic stability. Policymakers should focus on enhancing regulatory frameworks, financial market resilience, and regional coordination.

Originality/ Value: This study contributes to the existing body of knowledge by specifically examining the impact of the "Taper Tantrum" crisis on economic stability in Asian countries, providing unique insights into the effects of this particular crisis on the region.

**KEYWORDS:** Financial crises, Economic stability, Economic growth, Taper Tantrum, Fiscal stimulus

### INTRODUCTION

Financial crises have long been recognized as significant events with far-reaching implications for economies worldwide. These crises can have profound effects on economic stability and growth, disrupting financial markets, eroding investor and consumer confidence, and causing widespread economic downturns. As such, understanding the impact of financial crises on economic stability and growth is of paramount importance for policymakers, economists, and investors. (Rajan, 2010)

Financial crises are characterized by a sudden and severe disruption in the functioning of financial markets, leading to significant adverse effects on the real economy. They can manifest in various forms, such as banking crises, currency crises, or sovereign debt crises. Throughout history, notable examples include the 2008 global financial crisis, the Asian financial crisis of 1997, and the Great Depression of the 1930s. These crises serve as reminders of the devastating consequences that financial turmoil can inflict on economies, ranging from widespread bankruptcies and job losses to sharp declines in GDP and asset prices. (Obstfeld & Rogoff, 2009)

Economic stability and growth are fundamental objectives for policymakers. Stability ensures the smooth functioning of financial markets, maintains investor confidence, and facilitates long-term economic planning. Growth, on the other hand, is essential for improving living standards, reducing poverty, and fostering societal progress. However, financial crises can severely undermine these objectives. (Reinhart & Trebesch, n.d.) The short-term impacts of financial crises include disruptions in financial

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intermediation, decreased availability of credit, reduced consumer and investor confidence, and significant declines in asset prices. These effects create a ripple effect throughout the economy, stifling investment, consumption, and overall economic activity. (Di Martino, 2010)

Furthermore, financial crises can also have long-term consequences for economic growth. They can lead to a contraction in productivity, hinder financial intermediation, impose constraints on credit availability, and necessitate government interventions and fiscal stimulus. Structural changes may occur as resources are reallocated, and the overall trajectory of economic development can be altered. (Chandy et al., n.d.)

Given the severity and frequency of financial crises in the past century, it is crucial to examine their impact on economic stability and growth systematically. By analyzing the causes, short-term effects, and long-term consequences of financial crises, policymakers and economists can gain valuable insights into crisis management and the formulation of effective policies to mitigate the adverse impacts. (Cecchetti & Kharroubi, n.d.)

Therefore, this research paper aims to delve into the topic of the impact of financial crises on economic stability and growth. It will examine the causes and types of financial crises, analyze the short-term and long-term effects of such crises on economic stability and growth, provide case studies of notable financial crises, and explore policy responses and mitigation measures.

By gaining a comprehensive understanding of the impact of financial crises, this research aims to contribute to the existing body of knowledge and provide valuable insights for policymakers, economists, and stakeholders in managing and preventing future crises, promoting economic stability, and fostering sustainable economic growth.

### **LITERATURE REVIEW**

The impact of financial crises on economic stability and growth has been extensively studied in the field of economics. Researchers have examined various aspects of financial crises, including their causes, transmission mechanisms, short-term effects, and long-term consequences. The literature provides valuable insights into the complex relationship between financial crises and economic performance.

Studies have identified several key causes of financial crises. Asset price bubbles, driven by speculative behavior and excessive leverage, have been identified as a common precursor to financial crises (Reinhart & Rogoff, 2009). Inadequate risk management practices, weak regulation, and banking sector vulnerabilities, such as high levels of nonperforming loans, have also been identified as factors contributing to financial instability (G. L. Kaminsky & Reinhart, 1999). Furthermore, global imbalances and macroeconomic factors, such as recessions or external shocks, can amplify the likelihood and severity of financial crises (Obstfeld & Rogoff, 2009).

The short-term impacts of financial crises on economic stability are well-documented. During crises, financial markets experience disruptions, leading to reduced access to credit, heightened risk aversion, and declines in asset prices. These effects can spill over into the real economy, resulting in a contraction of economic activity, rising unemployment rates, and decreased consumer and investor confidence (Bordo & Haubrich, 2017). Studies have shown that financial crises can have significant adverse effects on output growth, trade, and investment (Aizenman & Marion, 1999).

The long-term consequences of financial crises on economic growth have also been extensively examined. Research suggests that financial crises can lead to a protracted period of low economic growth and even stagnation. The aftermath of crises often involves a contraction in productivity, reduced financial intermediation, and impaired credit availability, hindering investment and entrepreneurial activities (Cecchetti & Kharroubi, 2015). Financial crises can also necessitate government interventions and fiscal stimulus, which may lead to increased public debt burdens and crowding out of private investment. Moreover, financial crises can trigger structural changes in the economy, resulting in resource reallocation and changes in the composition of output.

Empirical studies have provided evidence supporting the link between financial crises and economic stability and growth. For example, Reinhart and Trebesch examine the historical impact of financial crises on economic stability and find that crises tend to have long-lasting effects on growth rates and debt levels (Reinhart & Trebesch, 2015). Taylor analyzes the policy responses to the 2008 global financial crisis and provides an empirical analysis of the causes of the crisis and its aftermath. (Taylor, 2009)

Despite the extensive research on the topic, there are still areas that require further exploration. For instance, the specific transmission channels through which financial crises impact economic stability and growth warrant deeper investigation. Additionally, the effectiveness of policy responses and mitigation measures in mitigating the adverse impacts of financial crises remains an important avenue for future research.

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## OBJECTIVES

The literature review on the impact of financial crises on economic stability and growth provides a comprehensive understanding of the causes, types, and consequences of financial crises. It reveals that financial crises can have significant short-term disruptions in financial markets, leading to reduced credit availability, investor panic, and declines in asset prices. Furthermore, financial crises have been found to have long-lasting effects on economic growth, productivity, and investment. The literature also highlights the importance of policy responses and mitigation measures in managing the impact of financial crises. Building upon this existing body of knowledge, the objectives of this research paper are;

1. To examine the causes and types of financial crises.
2. To analyze its short-term effects on economic stability.
3. To investigate the long-term consequences on economic growth.
4. To provide empirical evidence through case study of "Taper Tantrum 2013" in order to enhance understanding of the specific impact of financial crises on economic stability and growth.
5. To assess the effectiveness of policy responses.
6. To explore transmission channels.

By addressing these objectives, this research aims to contribute to the existing literature and provide valuable insights for policymakers, economists, and stakeholders in effectively managing and mitigating the impact of financial crises.

## METHODOLOGY

The research methodology involves a comparative analysis of the pre-crisis and post-crisis periods to identify changes and trends. For this we used published data of World Bank about three economic indicators, Annual GDP Growth rate, Annual Inflation Rate and Annual Current Account Balance as percentage of GDP. The findings are then interpreted and discussed to draw meaningful conclusions and provide insights into the effects of the crisis and the effectiveness of policy responses.

### Causes of Financial Crises:

Asset Bubbles	•Rapid increases in asset prices, such as stocks, real estate, or commodities, driven by speculative behavior and unsustainable expectations.
Excessive Leverage	•High levels of debt and leverage in the financial system, leading to vulnerabilities and potential defaults when economic conditions deteriorate.
Financial Market Imbalances	•Disparities between financial market participants' expectations and realities, leading to sudden corrections and market disruptions.
Banking Sector Vulnerabilities	•Weaknesses in the banking sector, such as poor loan quality, inadequate capitalization, or excessive reliance on short-term funding.
Inadequate Risk Management	•Weak risk assessment, inadequate oversight, and lax regulation that allow risks to accumulate unchecked within the financial system.
Macroeconomic Factors	•Economic downturns, recessions, or external shocks that impact the overall economic conditions and disrupt financial stability
Contagion and Spillover Effects	•Financial distress experienced by one institution or country can spread to others due to interconnectedness and interdependencies within the financial system.

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### Types of Financial Crises:

Banking Crises	Characterized by bank failures, liquidity shortages, and the erosion of public confidence in the banking system.
Currency Crises	Occur when a country's currency comes under pressure, leading to devaluations, capital flight, and a loss of confidence in the currency's value.
Sovereign Debt Crises	Arise when a government is unable to meet its debt obligations, often leading to defaults, debt restructuring, or seeking external assistance.
Systemic Crises	Widespread and severe financial disruptions that affect multiple sectors of the economy and pose significant risks to overall financial stability.
Stock Market Crashes	Sharp and sudden declines in stock prices, often triggered by investor panic, leading to a loss of wealth and erosion of market confidence.
Real Estate Crises	Rapid declines in real estate prices, property market collapses, and mortgage defaults, which can have significant spillover effects on the broader economy.
Global Financial Crises	These are large-scale crises that have a systemic impact on multiple countries and regions, such as the 2008 global financial crisis.

### Short-term impacts of financial crises:

- **Output and Employment Contractions:** Financial crises often lead to a sharp decline in economic output and a rise in unemployment. A study by Reinhart and Rogoff found that financial crises are associated with a significant contraction in economic growth, leading to an average decline in output of about 9% in the year following the crisis. (Reinhart & Rogoff, 2009).
- **Financial Market Disruptions:** Crises can disrupt financial markets, leading to a loss of investor confidence, sharp declines in asset prices, and liquidity problems. Mishkin highlights the role of financial market disruptions in exacerbating the impact of crises on economic stability. (Mishkin, 1992)
- **Banking Sector Instability:** Financial crises can trigger banking sector distress, including bank failures and a loss of depositor confidence. A study by Laeven and Valencia found that banking sector instability is a common feature of financial crises, with negative implications for economic stability. (Laeven & Valencia, 2013)
- **Government Intervention and Fiscal Costs:** In response to crises, governments often intervene to stabilize financial systems, which can lead to a significant increase in fiscal costs. A study by Honohan and Klingebiel emphasizes the importance of government intervention in containing financial crises and the associated fiscal burden. (Honohan & Klingebiel, 2003).
- **Disruptions in International Trade and Capital Flows:** Financial crises can disrupt international trade and capital flows, leading to a contraction in exports, reduced foreign direct investment (FDI), and increased borrowing costs. Eichengreen and Arteta (2000) analyze the impact of financial crises on international trade, highlighting the adverse consequences for economic stability. (*Financial Policies in Emerging Markets* - Google Books, n.d.)
- **Investor and Consumer Confidence:** Crises erode investor and consumer confidence, leading to reduced spending and investment, which further dampens economic activity. A study by Bloom shows that financial crises have a negative impact on consumer confidence and household spending. (Bloom, 2009)

### Long-term impacts of Financial Crises on economic growth.

- **Lower Productivity and Investment:** Financial crises can disrupt the efficient allocation of resources, leading to a decline in productivity. The disruptions in credit markets, bankruptcies of businesses, and reduced investment can limit the ability of firms to innovate, expand, and invest in productive activities. This can hinder long-term economic growth potential. A study by Ranciere et al. found that financial crises have a negative impact on productivity growth, which can persist for several years. (Rancière et al., 2008)
- **Human Capital and Skill Erosion:** Financial crises often result in job losses, layoffs, and reduced investment in education and skills development. These factors can contribute to a loss of human capital in the economy. The long-term consequences include a decrease in labor productivity, diminished innovation, and a decline in the quality of the workforce, which can impede economic growth.
- **Financial Sector Weakness:** Financial crises expose weaknesses in the financial system, such as inadequate risk management practices, weak regulatory oversight, and excessive leverage. These weaknesses can persist even after the crisis, leading to a

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long-term impairment of the financial sector's ability to allocate capital efficiently, support investment, and facilitate economic growth. Demirgüç-Kunt and Detragiache discuss the long-term impact of financial crises on financial sector development (Demirgüç-Kunt & Detragiache, 2002).

- **Macroeconomic Stability:** Financial crises can undermine macroeconomic stability, leading to higher inflation, fiscal imbalances, and reduced policy credibility. A study by Kaminsky et al. examines the long-term impact of financial crises on macroeconomic stability and the challenges faced in achieving sustained growth (G. Kaminsky & Schmukler, 2003).
- **Socioeconomic Inequality:** Financial crises can exacerbate socioeconomic inequality, as the burden of the crisis is often borne disproportionately by vulnerable groups. A study by Furceri and Loungani examines the long-term impact of financial crises on income inequality (Furceri & Loungani, 2018).
- **Lower Investment and Capital Formation:** Financial crises often lead to a decline in investment levels as businesses face difficulties accessing credit and become more risk-averse. This reduction in investment and capital formation can have long-term consequences by limiting the expansion of productive capacity, hindering technological progress, and slowing down economic growth.
- **Loss of Confidence and Uncertainty:** Financial crises can erode investor and consumer confidence, leading to prolonged periods of economic uncertainty. Uncertainty can dampen investment, discourage entrepreneurial activity, and delay consumption decisions. This can have a lasting impact on economic growth by impeding business expansion and limiting consumer spending.
- **Fiscal Constraints:** Financial crises often result in increased government spending to support the economy and stabilize the financial system. This can lead to higher public debt levels and fiscal constraints, which can impede the government's ability to invest in infrastructure, education, and other growth-enhancing initiatives, thereby affecting long-term economic growth.

### Taper Tantrum 2013:

The "Taper Tantrum" of 2013 refers to a period of financial market volatility that occurred when the U.S. Federal Reserve signaled its intention to gradually reduce its bond-buying program, also known as quantitative easing (QE). The term "Taper Tantrum" was coined to capture the strong market reactions and investor panic that ensued.

- **Background:** After the 2008 Global Financial Crisis, the Federal Reserve implemented various measures to stimulate the U.S. economy, including large-scale asset purchases (quantitative easing). As the U.S. economy showed signs of improvement, the Federal Reserve announced in May 2013 that it would consider tapering its monthly bond purchases, signaling a potential reduction in the liquidity injected into the market.
- **Market Volatility:** The announcement of potential tapering triggered a sharp rise in global bond yields, as investors anticipated a tightening of monetary policy. Bond yields, particularly in the U.S., increased rapidly, causing bond prices to decline. This sudden spike in yields led to a broader sell-off in financial markets, including emerging markets.
- **Capital Outflows from Emerging Markets:** As investors anticipated higher yields and a potential tightening of monetary policy in the United States, they began to withdraw capital from emerging market economies, seeking safer investments. This led to significant capital outflows from countries such as India, Indonesia, Brazil, and South Africa, among others. These outflows put pressure on emerging market currencies, causing depreciation and increasing borrowing costs.
- **Impact on Asian Economies:** Several Asian economies were significantly affected by the Taper Tantrum. Countries such as India, Indonesia, and Thailand experienced sharp declines in their currencies and stock markets. These currency depreciations raised concerns about inflation, increased import costs, and impacted investor confidence. Central banks in these countries had to intervene by raising interest rates and implementing other policy measures to stabilize their economies.
- **Global Implications:** The Taper Tantrum had global implications, affecting both developed and emerging market economies. It highlighted the interconnectedness of financial markets and the vulnerability of emerging markets to shifts in global investor sentiment. The episode underscored the importance of policy coordination and effective communication among central banks to manage the potential spillover effects of monetary policy changes.

The Taper Tantrum of 2013 demonstrated the sensitivity of financial markets to changes in monetary policy and the potential impact on emerging market economies. It served as a reminder of the challenges faced by countries in managing capital flows and maintaining financial stability in an interconnected global financial system. In our study we focused on three key Asian economies affected by the Taper Tantrum: India, Indonesia, and Thailand.



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## India: Implications, Mitigation measures and Effectiveness of the Policies:

**Currency Depreciation:** The announcement of the tapering of quantitative easing led to a sharp depreciation of the Indian rupee against the U.S. dollar. This depreciation increased import costs, fueling inflationary pressures and creating challenges for the central bank in managing price stability.

The Reserve Bank of India (RBI) intervened in the foreign exchange market to stabilize the depreciating Indian rupee. It implemented measures such as selling foreign currency reserves and tightening controls on capital outflows.

The policy measures implemented by the Reserve Bank of India (RBI) helped stabilize the rupee to some extent. However, the depreciation of the currency was still significant, indicating a mixed effectiveness of the measures.

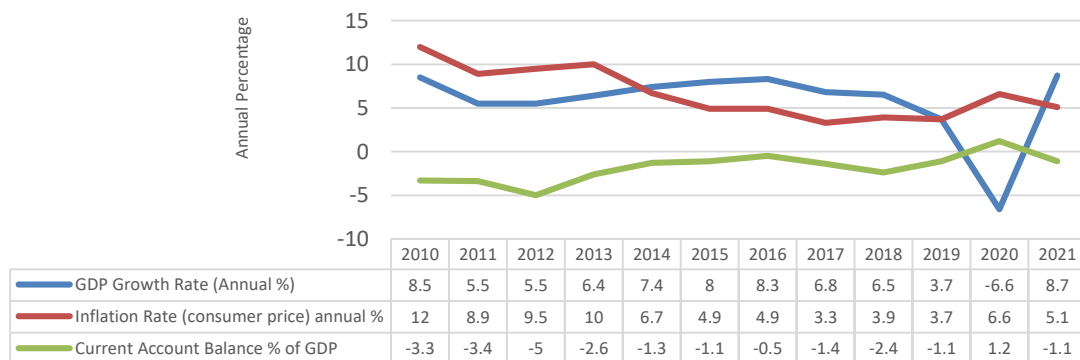
**Capital Outflows:** India experienced significant capital outflows as global investors withdrew funds from emerging markets. The outflows put pressure on India's current account deficit and external financing requirements, posing challenges for the country's balance of payments.

The RBI raised interest rates to attract capital inflows and stabilize the currency. It also implemented measures to curb speculation in the currency market.

The policy responses, including interest rate hikes and tightening controls on capital outflows, helped mitigate the capital outflows to some extent. However, the measures couldn't completely prevent the impact of capital flight, indicating a partial effectiveness.

The structural reforms introduced by the Indian government aimed at improving the investment climate and reducing external vulnerabilities showed positive results in the long term. These reforms helped enhance economic resilience and reduce the country's reliance on foreign capital, indicating a relatively effective approach. Figure 1.

Figure 1: Pre and Post Crises Indicators of India



Source: World Bank Data. (World Bank Open Data, n.d.)

## Indonesia: Implications, Mitigation measures and Effectiveness of the Policies:

**Currency Depreciation:** The Indonesian rupiah experienced a significant depreciation against the U.S. dollar. This depreciation increased imported inflation, impacted consumer purchasing power, and affected investor sentiment.

Bank Indonesia raised interest rates to support the rupiah and attract capital inflows. The central bank aimed to maintain stability in the financial markets and reduce currency depreciation.

The policy measures, including interest rate hikes, contributed to stabilizing the rupiah to some extent. However, the currency still experienced significant depreciation, indicating a partial effectiveness of the measures.

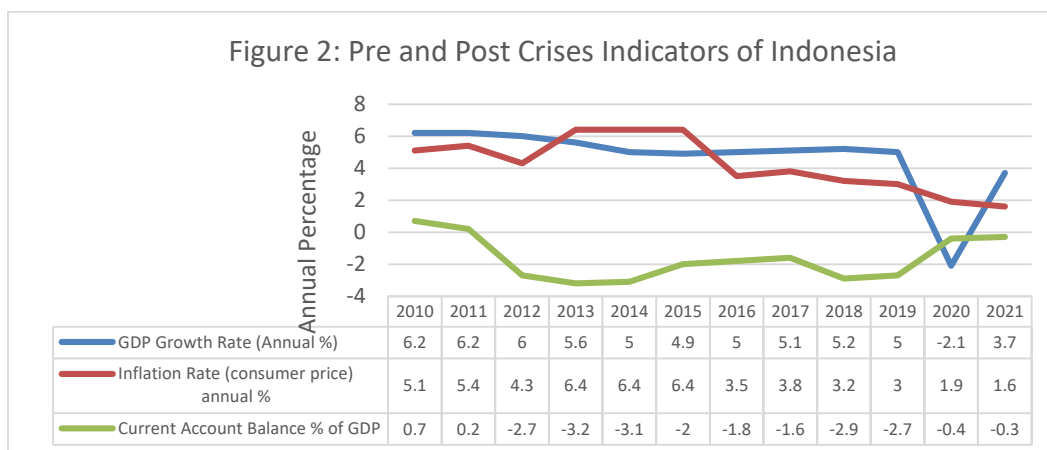
**Capital Outflows:** Similar to other emerging economies, Indonesia experienced capital outflows as investors sought safer assets. These outflows put pressure on the country's financial markets and external financing.

Bank Indonesia implemented measures to manage liquidity, including tightening rules on banks' foreign currency holdings. These measures aimed to maintain stability in the banking system and reduce vulnerabilities to external shocks.

The policy responses, including measures to manage liquidity and tighten rules on foreign currency holdings, helped stabilize financial markets and reduce vulnerabilities. These measures showed some effectiveness in managing capital flows and stabilizing the financial system.

The structural reforms implemented by the Indonesian government aimed at improving the investment climate and enhancing competitiveness showed positive outcomes. These reforms contributed to greater economic resilience and reduced reliance on external financing, indicating an effective approach. Figure 2.

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Source: World Bank Data. (World Bank Open Data, n.d.)

### Thailand: Implications, Mitigation measures and Effectiveness of the Policies:

**Currency Depreciation:** The Thai baht depreciated against the U.S. dollar, impacting export competitiveness and affecting tourism revenues, a significant contributor to Thailand's economy.

The Bank of Thailand intervened in the foreign exchange market to stabilize the Thai baht. It sold foreign currency reserves and implemented measures to manage currency volatility.

The policy measures implemented by the Bank of Thailand helped stabilize the baht to some extent. However, the currency still faced depreciation, suggesting a partial effectiveness of the measures.

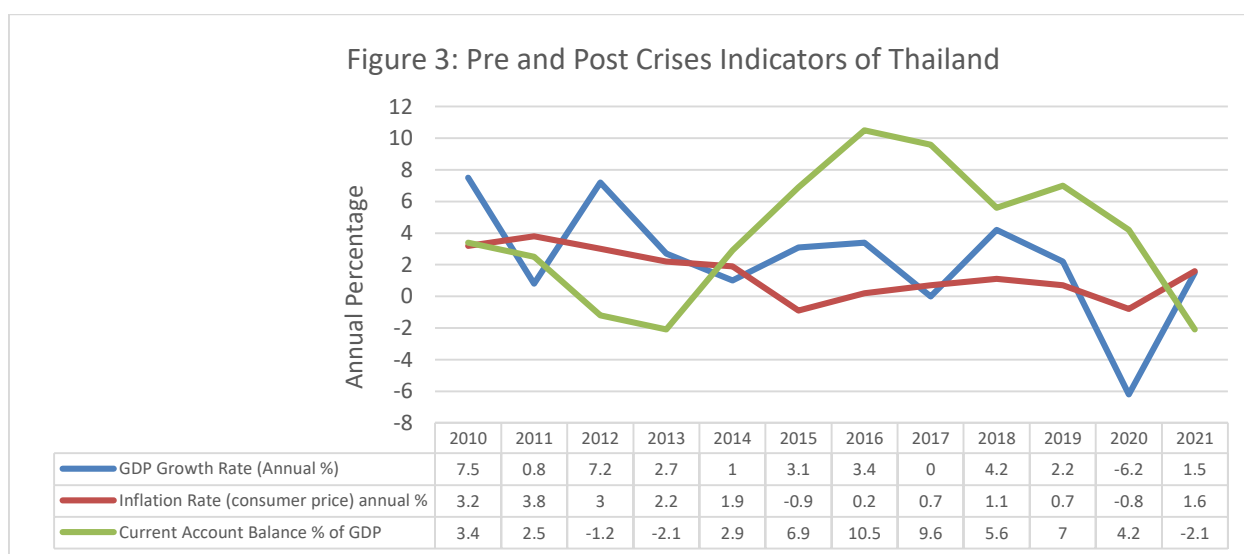
**Capital Outflows:** Thailand experienced capital outflows as investors withdrew funds from the country, putting pressure on its financial markets and affecting external financing.

The Bank of Thailand responded by implementing measures to stabilize the currency and attract capital inflows. These measures included raising interest rates and implementing measures to manage capital flows.

Thailand introduced capital control measures to manage capital inflows and outflows. These measures aimed to reduce short-term speculative flows and stabilize the financial markets.

The capital control measures introduced by Thailand helped manage capital flows and stabilize the financial markets to a certain extent. However, the impact of capital outflows was still significant, indicating a mixed effectiveness of the measures.

The fiscal stimulus measures implemented by the Thai government to boost domestic demand and support economic growth had positive outcomes in stimulating the economy and improving resilience. These measures showcased an effective response to the crisis. Figure 3.



Source: World Bank Data. (World Bank Open Data, n.d.)

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### Lessons Learned and Recommendations:

India realized the importance of maintaining a stable currency and managing external vulnerabilities. The crisis highlighted the need for building sufficient foreign exchange reserves and implementing prudent monetary and fiscal policies. To improve crisis management in the future, India could focus on diversifying its export markets to reduce reliance on any single region. Strengthening the financial sector through enhanced regulatory frameworks and risk management practices would also be beneficial.

Indonesia recognized the significance of managing capital flows and reducing external vulnerabilities. The crisis underscored the importance of structural reforms to enhance competitiveness and attract long-term investments. Going forward, Indonesia can prioritize enhancing the flexibility and efficiency of its financial markets to better handle capital flows. Continued structural reforms, including improving infrastructure, investing in human capital, and reducing regulatory burdens, can enhance economic resilience.

Thailand understood the importance of maintaining stability in the financial markets and managing external shocks. The crisis emphasized the need for effective monetary and fiscal policy coordination to mitigate the impact of capital flows. Thailand can focus on strengthening its financial regulatory framework and implementing measures to manage capital flows effectively. Diversifying the economy beyond tourism and exports and promoting domestic consumption can help reduce reliance on external factors.

### Overall Recommendations:

- **Strengthen Policy Coordination:** Enhance coordination among central banks and regulatory authorities both domestically and internationally to ensure a coherent response to financial crises. Improved communication and information sharing are crucial during such periods.
- **Build Resilience:** Countries should work on building resilience through structural reforms, such as improving the business environment, enhancing competitiveness, and diversifying their economies. This can help reduce vulnerability to external shocks and enhance long-term growth prospects.
- **Maintain Adequate Reserves:** Accumulating sufficient foreign exchange reserves is vital to withstand capital outflows and stabilize currencies during crises. Countries should strive to maintain an adequate level of reserves to effectively manage external vulnerabilities.
- **Strengthen Financial Sector:** Enhance financial sector regulation and supervision to ensure stability and prevent excessive risk-taking. Robust risk management practices, proper monitoring of capital flows, and effective measures to manage liquidity are crucial elements.
- **Promote Economic Integration:** Encourage regional economic integration to diversify export markets and reduce dependence on any single region. Increased intra-regional trade and investment can provide a buffer against global shocks.

These recommendations are not exhaustive, but they provide a starting point for future crisis management efforts. Each country should tailor its strategies based on its unique circumstances and challenges.

### CONCLUSION

Based on the statistical facts and data presented, we can draw several conclusions regarding the impact of the "Taper Tantrum" crisis on the economic stability of the selected Asian countries:

India experienced a significant impact from the crisis, with a noticeable slowdown in GDP growth and a rise in inflation. However, post-crisis measures helped stabilize the economy to some extent, leading to improved growth rates and a reduction in the current account deficit.

Indonesia faced challenges in managing the crisis, with a slowdown in GDP growth and an increase in inflation. The country implemented structural reforms to enhance competitiveness and attract investments, which contributed to a gradual recovery in the post-crisis period.

Thailand's economy was affected by the crisis, resulting in a significant decline in GDP growth. However, the country implemented effective policy measures to stabilize the financial markets and address external vulnerabilities, leading to an eventual recovery and a current account surplus.

Overall, the statistical evidence highlights that the "Taper Tantrum" had varying impacts on the selected Asian countries. While all countries experienced some level of economic disturbance, their policy responses and structural reforms played a crucial role in mitigating the effects of the crisis. These conclusions suggest that proactive policy measures, such as maintaining exchange rate stability, managing capital flows, and implementing structural reforms, can contribute to restoring economic stability in the

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aftermath of financial crises. Additionally, building resilience, diversifying economies, and improving financial sector regulations are vital for ensuring long-term stability and reducing vulnerability to future shocks. It is important for policymakers to learn from the experiences of the "Taper Tantrum" crisis and prioritize measures that enhance economic resilience, strengthen policy coordination, and promote sustainable growth. By doing so, countries can better prepare themselves to withstand future financial disruptions and minimize their adverse impacts on economic stability.

### ACKNOWLEDGEMENT

We sincerely appreciate everything our department, college, and university have done to provide excellent infrastructure. It is imperative that we extend our sincere gratitude to those who have shown themselves to be trustworthy advisors. No governmental, private, or nonprofit financing organization has ever given us a grant or fund for this research.

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## To go or not to go: Role of Online Reviews towards Customer Dining Intention



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**ABSTRACT:** The objective of this study is to investigate the role of online reviews towards customer dining intention in casual dining restaurants. Specifically, this study sought to answer the questions (1) how does online reviews affect customer casual dining intentions? (2) What are the attributes of online reviews that greatly influence customer dining intention? And (3) what is the extent of the effect of online reviews on customer casual dining intentions? The research was carried out in the city of Malolos, Bulacan, and respondents are Malolos residents who have dined at a casual dining restaurant at least once and who chose a restaurant based on online reviews. Descriptive Quantitative research was utilized in the study. An adapted questionnaire from the study of Thomas, et al. (2019) was used and random sampling method was employed to gather 100 respondents. Most respondents agreed that online reviews affect customers' casual dining intentions. A closer look at the study reveals that all proposed online review attributes greatly influence customer dining intention. This agreed with the previous study by Thomas et al. (2019), where the identified factors were derived. Product/ service rating, website reputation, and review quantity show the strongest positive effects.

**KEYWORDS:** customer dining intention, online reviews, E-wom, hospitality industry

### 1. INTRODUCTION

Word of Mouth (WOM) is a traditional mode of communication initially described as sharing thoughts and comments about the products and services people were purchasing. However, word of mouth has evolved into an entirely new type of communication. Electronic word-of-mouth, or eWOM, is today's new form of WOM communication (Yang, 2017). With modern technology, these new means of communication had a significant impact on consumer behavior (Cantalops & Salvi, 2014) because they enable consumers to exert on each other (Jalilvand & Samiei, 2012) by allowing them to share their experiences and opinions about a product, companies, or brands (Gómez-Suárez et al., 2017). The only distinction between electronic word-of-mouth (eWOM) and traditional word-of-mouth (WOM) is the communication platform, which is the Internet.

Online reviews are one of the forms of eWOM. Online reviews have altered the style of consumer purchasing behavior in the restaurant industry, and many scholars have investigated the impact of online reviews in the restaurant industry (DiPietro, Crews, Gustafson, & Strick, 2012; Schindler & Bickart, 2012; Taylor & Atay, 2016; Yan, Wang, & Chau, 2015). When consumers have limited information about the quality of a service or product until they purchase it, they are more likely to seek this information ahead of time (Parikh et al., 2014). The restaurant reviews provide a variety of information that assists the restaurant's customers in making decisions ahead of time.

Online websites, social media, and blogs have reshaped how people plan their visits. With a single click, tourists can quickly obtain detailed information about their destination and other facilities, such as restaurants and shopping malls. Consumers are increasingly using and relying on the opinions of others posted on online review sites (Malbon, 2013; Nielsen Global Company, 2013). Online restaurant review sites provide a quick overview of each establishment's name, address, and the reviewer's overall evaluation of its food and service. Potential customers can interact with many other diners through online restaurant review sites. As a result, potential customers are informed of a restaurant's potential strengths and weaknesses through online restaurant reviews. Thus, online reviews today can connect a potential customer directly with a restaurant even before he or she walks through the restaurant's doors (Yang et al., 2017).

There are numerous studies conducted regarding customer dining intention. One study by Yan X. et al. (2015) investigated factors influencing customers revisit intention to dine by analyzing online reviews. Another study by Gunden N. (2017) attempts to fill the gap regarding the relationship between online reviews and restaurant attributes that are significant considerations when choosing

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a restaurant. The study's greatest limitation is the type of restaurant, as the author does not focus on a specific type of restaurant. However, this study investigates whether online reviews influence customer casual dining intention.

## 2. LITERATURE REVIEW

### Relevant Theories

#### Signaling Theory

According to Connelly et al. (2010), signaling theory has investigated various business areas, such as entrepreneurship behavior, organizational stakeholder behavior, and employee and employer behavior. However, studies aimed at determining the impact of online information, such as ratings and customer comments, still necessitate comprehension. As stated by Kwon et al. (2021), a growing number of users are utilizing these connectivity resources to select tourist destinations, hotels, and restaurants, based on their expectations and personal preferences. The signaling theory will be applied to customer attitude formation in the hospitality industry. Online reviews provide essential signals about various aspects of restaurant attributes (for example, food quality, service quality, and environment); these signals shape customer attitudes toward the service environment, which may lead to positive purchase intentions. As a result, individuals do not directly perceive the product and locations; instead, they look for various cues and signals within that specific context. Signals aid in understanding hidden information, so consumers rely on them to proceed with any decision or choice. A car, for example, denotes wealth, while a speaker's accent denotes his country of origin. Similarly, restaurant attributes indicate service quality, which aids in customer decision-making for patronage.

#### Congruity Theory

Congruity Theory, proposed by Osgood and Tannebaum (1955), is a model of attitude change that states congruity or congruence when a person we like approves the same thing we agree with. According to congruity theory, when an individual source of opinion praises or disparages an object, a receiver's attitude toward that object changes depending on how well the receiver regards the specific source. The theory is concerned with whether a source makes an "associative assertion" about an object (praises, recommends, advocates, or aligns themselves with the object) or a "dissociative assertion" (disparaging, denouncing, condemning, or otherwise expressing a negative evaluation of it). The theory makes specific predictions based on how well the receiver perceives the source and the object before the source makes an assertion, influencing the receivers' attitudes toward both the object and the source.

#### Homophily

Homophily is another construct studied in WOM literature. Homophily refers to the degree of similarity in specific characteristics such as age, gender, education, or lifestyle (Rogers, 1983). While tie strength refers to the strength of the relationship, homophily refers to similarities in individual characteristics. A person can be homophilic while having a weak tie with acquaintances and vice versa (Steffes & Burgee, 2008). According to some researchers, homophily may include not only demographic similarities such as age, gender, education, and occupation (Brown & Reingen, 1987) but also similarities in values, preferences, and lifestyle (Gilly et al. 1998). Perceptual affinity (De Bruy & Lilien, 2008) defines this latter type of similarity as "similarities between two people's values, likes, dislikes, and experience" (De Bruy Lilien, 2008, p. 154).

#### Tie Strength

Social ties and tie strength are essential concepts in WOM literature, particularly regarding the spread of WOM. *Tie strength* is defined as "the amount of time, emotional intensity, intimacy (mutual finding), and reciprocal services that characterize the tie" (Granovetter, 1973, p. 1361). He proposed a reasonable explanation for the WOM process in his "the strength of weak ties" theory. It describes the flow of WOM behavior using strong and weak ties. He believes that weak ties play an essential role in the spread of WOM. Without weak ties, a system would be made up of disjointed subgroups, and WOM would not spread from one to the other.

As weak ties contribute to the spread of WOM among groups, strong ties contribute to the persuasive power of WOM messages. Consumers' networks may contain a wide range of relationships, ranging from very strong ties (i.e., family and close friends) to weak ties (i.e., colleagues or acquaintances). Depending on the strength of their relationships, they may spread WOM in different ways. People are more likely to believe what others say if they have strong ties, such as siblings, relatives, or friends than strangers or acquaintances (Godes & Mayzlin, 2004). Because senders and receivers are likely to know each other, receivers can assess the source's credibility (Steffes & Burgee, 2009).

### Relevant Literature & Studies

#### Restaurant Online Reviews

Online reviews are frequently referred to as an "electronic form of word of mouth," or eWOM. These new modes of communication have resulted in changes in customer behavior (Cantallops & Salvi, 2014; Gómez-Suárez et al., 2017). This tool is available to all

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customers, who can use online platforms to share their opinions and reviews with other users. People look to online reviews for information about a product or service (Nieto et al., 2014). Most readers are strangers (Cheung & Thadani, 2012). People intend to share their opinions with others online by writing reviews as the Internet becomes more integrated into people's daily lives. Many of their opinions are about previous customers' products or services. As a result, online reviews are becoming a vital source for customers to learn about products (Huet et al., 2008) and assist them in purchasing decisions (Burgess et al., 2011).

Because online social media has grown so quickly, the restaurant industry has been given numerous opportunities. As a result, many online customers rely on websites that provide restaurant reviews, discussion forums, and personal blogs, among other things (Yang et al., 2017). Similarly, online reviews assist other users in determining whether or not a restaurant is worth visiting (Cheung & Lee, 2012). Numerous researchers have studied the impact of online reviews on restaurant selection (Cheung & Lee, 2012; Fox, 2013; Parikh, 2013; Parikh, 2014; Yang, 2017). A positive relationship has been found between the attributes and restaurant visit intentions. In essence, the context of online reviews allows customers to see how many people recommend a product or service, which has a significant impact on customers' purchasing intentions.

### The Number of Online Reviews

The number of reviews plays an essential role in speeding up customer selection. Zhang et al. (2014) The number of reviews perceived by online users as the popularity of a restaurant (Zhang et al., 2010). Furthermore, more online reviews may increase the likelihood of online users clicking on the restaurants' websites (Zhang et al., 2010). According to Lu, Ba, Huang, and Feng (2013), a higher volume of online reviews positively impacts restaurant sales and the overall number of restaurant customers. As the researchers point out, customers prefer restaurants with a high volume of online reviews. As a result, Luca and Zervas (2016) claim that many online reviews influence consumers' restaurant decisions. For example, consumers may prefer a more expensive restaurant with many online reviews over a less expensive restaurant with fewer reviews. As a result, online restaurant reviews have become an influential and invaluable source of information in the restaurant industry. They frequently leave a strong impression when consumers make purchasing decisions (Yim, Lee, & Kim, 2014). A large number of online reviews are invaluable sources of information for restaurants to investigate their customers' dining experiences, assist restaurants in increasing engagement with customers and restaurants, and spread a massive amount of information to potential patrons in order to win their business (Gan, Ferns, Yu, & Jin, 2016). The context of a restaurant review includes the customer's evaluation of their prior experience. Food quality is one of the most influential aspects of a customer's opinion. As a result, customer attitudes could be influenced by reviewing the attributes of customer recommendations, particularly the quality of food served at a specific restaurant (Lee, 2016). Similarly, prior research has shown that the number of online reviews is essential in answering the research question. (Gan et al., Luca et al., 2016; Lu et al., 2013; Yim et al., 2014; Zhang et al., 2010; Zhang et al., 2014; Zhang et al., 2010).

### Purchase Intention

Because online shoppers cannot use their senses to evaluate products before purchasing, their decisions will be solely based on the information provided on websites. As a result, they include eWOM in their decision-making process. According to studies, online reviews play a significant role in purchase decisions (Chen & Xie, 2005; Clemons et al., 2006; Davidow, 2003; Hu et al., 2008), with the primary goals of eWOM being to either recommend or discourage other customers from purchasing products and services (Sen & Lerman, 2007). Customers who gather more information from online sources report a higher interest in the product or company, which may eventually lead to purchase behavior (Bickart & Schindler, 2001). Gauri et al. (2008) discovered that the percentage of positive reviews, but not the volume of positive reviews, influences purchase intent. Adequate information and high-quality eWOM positively impact interest, attitude, and purchase intent (Chu & Shiu, 2008; Park et al., 2007; Wyatt & Badger, 1990). Depending on customer expertise, the way eWOM influences purchase intention may differ.

### Revisit Intention

When a company offers a product or service, there may be many similar goods or services available on the market from competitors. Customers usually have a variety of options. As a result, in addition to attracting new customers, companies must improve the value of existing customers and take adequate steps to attract their repurchase behaviors (Hanai et al., 2008). Customer revisits intention has been studied in a variety of domains, including tourism services (Alegre & Cladera, 2009), catering services (Kim & Moon, 2009), hospital services (Lee, 2005), retail business (Zboja and Voorhees 2006), bank services (Shao et al., 2008), telecom services (Wang et al., 2004). Several customer retention-driving factor models were developed and estimated using structural equation modeling or logistic regression. These models consider satisfaction, trust, the number of previous visits, perceived switching cost, and customer value. Among the factors influencing repeat visits, numerous studies support the notion that customer satisfaction is a significant determinant of customer revisit intention (Alegre & Cladera, 2006).

### Online Reviews on Customer Restaurant Selection

Kohli, H., & Khandai, S. (2019) carried out a study that seeks to comprehend the impact of Electronic Word of Mouth (eWOM) on restaurant selection, with a particular emphasis on the relationship between awareness of review websites and the reading



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frequency of online reviews. A survey of 228 people was conducted, and it was discovered that people are aware of and read online reviews, which leads to positive purchase intention.

Arnieyantje, A. H., Norfezah, M. N., Liana, N., & Shakir, M. (2021) conducted a study to determine the impact of online reviews on restaurant visitation intentions. The study was carried out by distributing a self-administered questionnaire to 156 participants, and the data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20. Positive online reviews (eWOM), negative online reviews (eWOM), and online food quality reviews significantly influenced customers' intention to visit restaurants.

A study by Aureliano-Silva, L., Leung, X., and Spers, E. E. (2021) investigates the effect of online reviews on customers' intention to visit restaurants. According to the findings, online reviews with higher online ratings and emotional appeal resulted in higher restaurant visit intention.

A study by Huifeng, P., & Ha, H. Y. (2021) investigates the relationships between performance and financial risks, online customer reviews, and restaurant revisit intent. The results of a survey of 274 respondents show that online customer reviews have a direct impact on restaurant visit intention and performance risk, and financial risk has a direct impact on restaurant visit intention.

### Online Review Attributes

Gunden, N. (2017) conducted a study to investigate the relative importance of online review attributes in customer restaurant selection using CBC Analysis. According to the findings, the most important factor in customer restaurant selection is food quality, followed by overall restaurant rating, price, service quality, number of online reviews, and atmosphere. The CBC analysis shows the relative importance of each attribute for customer decisionmaking. Furthermore, the overall restaurant rating is determined to be a significantly important factor influencing customer restaurant selection, whereas the rest of the attributes vary in rank.

Aditya, A. R., and Y. Alversia (2019) studied the effect of online reviews on customer purchase intention when selecting the first visited cafe using regression analysis. The findings identified six attributes of online review content and one source attribute: timeliness, reviewer expertise, usefulness, volume, positive and negative online reviews, and comprehensiveness.

### Online Reviews on Purchase Intention

Ismail Erkan and Chris Evans (2016) discovered how electronic word-of-mouth conversation on social media websites influences customer purchase intention. Social media provided a valuable forum for eWOM discussion. Individuals converse with their friends and associates about any brand's products and services. The survey results of 384 university students who used social media revealed a positive influence on consumers' purchase intentions.

A study by Pratminingsih, S. A., Astuty, E., & Mardiansyah, V. (2019) examined the impact of electronic word of mouth on purchasing decisions. A survey was carried out to provide answers to the research questions. In this study, 200 questionnaires were distributed through random sampling. This study's findings show that electronic word of mouth positively influences purchase decisions.

M. Civelek and A. Ertemel (2018) investigated whether Millennials have greater purchasing intentions than other age groups. Users of social media communicate with family, friends, and known and unknown peer communities. Peer to peer interaction is achieved through electronic word of mouth. Positive peer comment influence on brand awareness leads to brand trust. They concluded that social media eWOM peer to peer communication among Millennials has an impact on purchase decisions.

Maryam Tariq et al. (2017), studied eWOM and brand awareness influences on customer purchase intention. Customers look for brand information before deciding whether to purchase the product or not to purchase the product. Users review various suggestions and opinions from the expert who purchased online before making a purchase decision. Offline users can also benefit from electronic information when making purchasing decisions. As eWOM information is shared and accessed globally at any time, it is stored in internet-rich social media.

### Online Reviews on Revisit Intention

Yan, X., Wang, J., & Chau, M. (2015) researched the factors influencing customers' revisit intention to restaurants by analyzing online reviews. The findings indicate that food quality, price and value, service quality, and atmosphere are predictors of restaurant customers' intention to revisit, and that restaurant type moderates the effect of customer satisfaction with service quality, atmosphere, and price and value on revisit intention.

## Conceptual Framework



Figure 1: Conceptual Framework

The research is to investigate the role of online reviews towards customer dining intention. Through an in-depth review and study of the online review and restaurant selection literature, a conceptual model has been proposed as shown in figure (1). The framework illustrated above demonstrates the variables used in the study. Online Review Attributes is the Independent Variable whereas Customer Dining Intention is the Dependent Variable.

### Hypothesis of the Study

Based on the specific statement of the problem, the following hypotheses was formulated:

- H1.** Online reviews' accuracy greatly affects the customer dining intentions.
- H2.** Online reviews' completeness greatly affects the customer's dining intentions.
- H3.** Online reviews' timeliness greatly affects the customer dining intentions.
- H4.** Online reviews' quantity greatly affects the customer's dining intentions.
- H5.** Online reviews' consistency greatly affects the customer's dining intentions.
- H6.** Online reviews' expertise greatly affects the customer dining intentions.
- H7.** Online reviews' product/service rating greatly affects the customer dining intentions.
- H8.** Online reviews' website reputation greatly affects the customer dining intentions.
- H9.** Online reviews' credibility greatly affects the customer dining intentions.
- H10.** Online reviews significantly affect the customer dining intentions

### 3. METHODOLOGY

To answer the proposed research question, this study used a descriptive quantitative approach. The data-gathering technique used in the study is a survey and the study used a random sampling in determining its respondents. The subjects of this research are

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Malolos residents who have dined at a casual dining restaurant at least once and chose a restaurant based on online reviews. The sample participants are drawn from various age groups, genders, and groups of people, including students, who are considered samples for the study. The researchers chose 100 people to complete the survey in order to collect data for the study. The research tool is an adapted questionnaire from Thomas et al. (2019) to identify the characteristics of online reviews that have a significant influence on customer dining intention. The survey questionnaire is divided into three sections: the first focuses on the impact of online reviews on customer casual dining intentions. The second section discusses which online review factors have the greatest influence on customer casual dining intention. The third section includes questions about the impact of online reviews on customer casual dining intentions. The questionnaire is composed entirely of Likert scale responses ranging from strongly agree to strongly disagree. Descriptive statistics were used.

### 4. RESULTS

**Table 1. Frequency, Weighted Mean and Descriptive Interpretation of Impact of Online reviews towards customer casual dining intention.**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. Positive comments tend to elicit emotional trust from customers.	27	64	9	0	3.18	Agree
2. Positive feedback boosts confidence and trust in the product.	22	73	5	0	3.17	Agree
3. Positive comments are extremely pervasive.	19	69	12	0	3.07	Agree
4. Online reviews help customers make purchasing decisions.	37	61	2	0	3.26	Strongly Agree
5. Customers are more likely to trust food establishment that have online reviews than food establishment that do not have online reviews.	14	86	0	0	3.14	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.16</b>	<b>Agree</b>

Table 1 shows the summary of results for the frequency, weighted mean, and interpretation of the impact of online reviews towards customer casual dining intention. Positive comments tend to elicit emotional trust from customers has a weighted mean of 3.18 with an interpretation of agree. Positive feedback boosts confidence and trust in the product has a weighted mean of 3.17 with an interpretation of agree. Positive comments are extremely pervasive has a weighted mean of 3.07 with an interpretation of agree. Online reviews help customers make purchasing decisions has a weighted mean of 3.26 with an interpretation of strongly agree. Customers are more likely to trust food establishment that have online reviews than food establishment that do not have online reviews has a weighted mean of 3.14 with an interpretation of agree. With that, the overall weighted mean would be 3.16 and the interpretation would be Agree.

**Table 2. Frequency, Weighted Mean and Descriptive Interpretation Online reviews' accuracy**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. Online reviews are accurate.	23	73	3	1	3.18	Agree
2. Online reviews are thoroughly written.	20	71	8	1	3.10	Agree
3. Online reviews are correct.	27	65	8	0	3.19	Agree
4. Online reviews are precisely formulated.	19	70	11	0	3.19	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.17</b>	<b>Agree</b>

As shown in Table 2, Online reviews' accuracy has an overall weighted mean of 3.17 with an interpretation of Agree. Online reviews are accurate has a weighted mean of 3.18 with an interpretation of agree. Online reviews are thoroughly written has a weighted

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mean of 3.10 with an interpretation of agree. Online reviews are correct has a weighted mean of 3.19 with an interpretation of agree. Online reviews are precisely formulated has a weighted mean of 3.19 with an interpretation of agree.

**Table 3. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' completeness.**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. Online reviews contain all the information needed about the reviewed product/services.	32	68	0	0	3.32	Strongly Agree
2. Online reviews contain very detailed information about the reviewed product/services.	22	71	5	2	3.13	Agree
3. Online reviews contain a variety of information about the reviewed products/services.	29	61	10	0	3.19	Agree
4. Overall, online reviews are comprehensive.	28	64	8	0	3.20	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.21</b>	<b>Agree</b>

Table 3 shows that Online reviews' completeness has an overall weighted mean of 3.21 with an interpretation of Agree. Online reviews contain all the information needed about the reviewed product/services has a weighted mean of 3.32 with an interpretation of strongly agree. Online reviews contain very detailed information about the reviewed product/services has a weighted mean of 3.13 with an interpretation of agree. Online reviews contain a variety of information about the reviewed products/services has a weighted mean of 3.19 with an interpretation of agree. Overall, online reviews are comprehensive has a weighted mean of 3.20 with an interpretation of agree.

**Table 4. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' timeliness.**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. Online reviews are current	22	73	5	0	3.17	Strongly Agree
2. Online reviews are timely.	27	64	9	0	3.18	Agree
3. Online reviews are up to date.	19	69	12	0	3.07	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.14</b>	<b>Agree</b>

As shown in Table 4, online reviews' timeliness has an overall weighted mean of 3.14 with an interpretation of Agree. Online reviews are current has a weighted mean of 3.17 with an interpretation of agree. Online reviews are timely having a weighted mean of 3.18 with an interpretation of agree. Online reviews are up to date has a weighted mean of 3.07 with an interpretation of agree.

**Table 5. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' quantity**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. There is a great number of reviews from different authors about many products/services.	37	61	2	0	3.35	Strongly Agree
2. There is a variety of reviews about many products/services	25	73	2	0	3.26	Strongly Agree
3. There is a multitude of information about many products/services	24	72	4	0	3.20	Agree
4. The number of online reviews about products/services is high.	27	69	4	0	3.23	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.26</b>	<b>Strongly Agree</b>

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Table 5 shows that Online reviews' quantity has an overall weighted mean of 3.26 with an interpretation of Strongly Agree. There is a great number of reviews from different authors about many products/services has a weighted mean of 3.35 with an interpretation of strongly agree. There is a great number of reviews from different authors about many products/services has a weighted mean of 3.26 with an interpretation of strongly agree. There is a multitude of information about many products/services has a weighted mean of 3.20 with an interpretation of agree. The number of online reviews about products/services is high has a weighted mean of 3.23 with an interpretation of agree.

**Table 6. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' consistency**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. Different online reviews about a product/service are often consistent with each other in terms of content	24	73	3	0	3.21	Agree
2. Different online reviews about a product/service overlap to some extent with each other in terms of content.	22	77	1	0	3.21	Agree
3. There is a multitude of information about many products/services	14	86	0	0	3.14	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.19</b>	<b>Agree</b>

As shown in Table 6, Online reviews' consistency has an overall weighted mean of 3.19 with an interpretation of Agree. Different online reviews about a product/service are often consistent with each other in terms of content has a weighted mean of 3.21 with an interpretation of agree. Different online reviews about a product/service overlap to some extent with each other in terms of content has a weighted mean of 3.21 with an interpretation of agree. There is a multitude of information about many products/services has a weighted mean of 3.14 with an interpretation of agree.

**Table 7. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' expertise**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. Reviewers of online reviews seem to possess sufficient knowledge.	25	72	3	0	3.22	Agree
2. Reviewers of online reviews seem to have enough insights to make an assessment	19	75	6	0	3.13	Agree
3. Reviewers of online reviews seem to be competent	17	75	8	0	3.13	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.16</b>	<b>Agree</b>

As shown in Table 7, Online reviews' expertise has an overall weighted mean of 3.16 with an interpretation of Agree. Reviewers of online reviews seem to possess sufficient knowledge has a weighted mean of 3.22 with an interpretation of agree. Reviewers of online reviews seem to have enough insights to make an assessment has a weighted mean of 3.13 with an interpretation of agree. Reviewers of online reviews seem to be competent has a weighted mean of 3.13 with an interpretation of agree.

**Table 8. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' product/service rating**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. The rating of products/services by means of stars has narrowed down the number of alternative products/services that are interesting to me.	35	65	0	0	3.25	Agree

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2. The rating of products/services by means of stars has allowed me to find products/services that satisfy my needs.	32	63	5	0	3.27	Strongly Agree
3. The rating of products/services by means of stars has allowed me to find well-rated products/services	42	55	3	0	3.39	Strongly Agree
4. The rating of products/services by means of stars has allowed me to get a quick overview of products/services.	35	61	4	0	3.31	Strongly Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.33</b>	<b>Strongly Agree</b>

Table 8 shows that Online reviews' product/service rating has an overall weighted mean of 3.33 with an interpretation of Strongly Agree. The rating of products/services by means of stars has narrowed down the number of alternative products/services that are interesting to me has a weighted mean of 3.25 with an interpretation of agree. The rating of products/services by means of stars has allowed me to find products/services that satisfy my needs has a weighted mean of 3.27 with an interpretation of strongly agree. The rating of products/services by means of stars has allowed me to find well-rated products/services has a weighted mean of 3.39 with an interpretation of strongly agree. The rating of products/services by means of stars has allowed me to get a quick overview of products/services has a weighted mean of 3.31 with an interpretation of strongly agree.

**Table 9. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' website reputation**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. The website is very popular	33	64	3	0	3.30	Strongly Agree
2. The website has a high reputation with good reason.	28	70	2	0	3.26	Strongly Agree
3. The website is known for its high reputation	35	63	2	0	3.33	Strongly Agree
4. The website is trustworthy in my opinion	20	75	5	0	3.15	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.26</b>	<b>Strongly Agree</b>

As shown in Table 9, Online reviews' website reputation has an overall weighted mean of 3.26 with an interpretation of Strongly Agree. The website is very popular has a weighted mean of 3.30 with an interpretation of strongly agree. The website has a high reputation with good reason has a weighted mean of 3.26 with an interpretation of strongly agree. The website is known for its high reputation has a weighted mean of 3.33 with an interpretation of strongly agree. The website is trustworthy in my opinion has a weighted mean of 3.15 with an interpretation of agree.

**Table 10. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews' credibility**

INDICATORS	4	3	2	1	WEIGHTED MEAN	INTERPRETATION
1. I think online reviews are credible.	40	55	5	0	3.35	Strongly Agree
2. I think online reviews are factual	20	74	6	0	3.14	Agree
3. I think online reviews are reliable.	25	72	3	0	3.22	Agree
4. I think online reviews are trustworthy.	20	75	5	0	3.15	Agree
<b>OVERALL WEIGHTED MEAN:</b>					<b>3.22</b>	<b>Agree</b>

Table 10 shows that Online reviews' credibility has an overall weighted mean of 3.22 with an interpretation of Agree. I think online reviews are credible has a weighted mean of 3.35 with an interpretation of strongly agree. I think online reviews are factual has a weighted mean of 3.14 with an interpretation of agree. I think online reviews are reliable has a weighted mean of 3.22 with an interpretation of agree. I think online reviews are trustworthy has a weighted mean of 3.15 with an interpretation of agree.

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Table 11. Frequency, Weighted Mean and Descriptive Interpretation of Online reviews in customer dining intention 4

INDICATORS		2	1	WEIGHTED MEAN	INTERPRETATION	
1. I intend to dine in a restaurant which I have read positive online reviews.	45	54	3.44			
2. If somebody asks me for advice, I will recommend restaurants.	60	1	0	3.38	Strongly Agree	
3. As a matter of principle, I inform myself before dining in a restaurant with the help of online reviews.	33	62	5	0	3.28	Strongly Agree
4. In the future, I will dine in a restaurant which I have read reviews online	29	70	1	0	3.28	Strongly Agree
<b>OVERALL WEIGHTED MEAN:</b>				<b>3.35</b>	<b>Strongly Agree</b>	
<b>3</b>						

1. I intend to dine in a restaurant which I have read positive online reviews.

Table 11 shows the summary of results for the frequency, weighted mean, and interpretation of the extent of the effect of online review on customer casual dining intention.

I intend to dine in a restaurant which I have read positive online reviews has a weighted mean of 3.38 with an interpretation of strongly agree. If somebody asks me for advice, I will recommend restaurants has a weighted mean of 3.44 with an interpretation of strongly agree. As a matter of principle, I inform myself before dining in a restaurant with the help of online reviews has a weighted mean of 3.28 with an interpretation of strongly agree. In the future, I will dine in a restaurant which I have read reviews online has a weighted mean of 3.28 with an interpretation of strongly agree. With that, the overall weighted mean would be 3.35 and the interpretation would be Strongly Agree.

## 5. DISCUSSION AND CONCLUSION

From the analysis of the data presented in the study, the following results were obtained.

1. Most respondents agreed that online reviews affect customers' casual dining intentions. With an overall weighted mean of 3.16 and verbal interpretation of agree, it has been found that online reviews positively affect customers' casual dining intention. This agreed with the previous study conducted by Kohli, H., & Khandai, S. in 2019 entitled "The Role Of eWOM in Social Media On Consumer's Choice Of Restaurant Selection, which states that people are aware and reading online reviews leads to positive purchase intention.
2. A closer look at the study reveals that all proposed online review attributes greatly influence customer dining intention. This agreed with the previous study by Thomas et al. (2019), where the identified factors were derived. Product/ Service Rating, Website Reputation, and Review Quantity show the strongest positive effects. The Product/ Service Rating ranked as the most important attribute in restaurant selection, with an overall weighted mean of 3.33 and a verbal interpretation of Strongly Agree.
3. The findings reveal the extent of the effect of online reviews on customer dining intention. With an overall weighted mean of 3.35 and a verbal interpretation of To a Very Large Extent, it has been found that customers are increasingly using and relying on the opinions of others posted on online review sites, as stated by Malbon, 2013, Nielsen Global Company. Interestingly, the findings revealed that most respondents intend to dine in a restaurant and have read positive online reviews.

### Conclusions

Based on the discoveries of the study, the following conclusions are drawn:

1. Online reviews positively affect customers' casual dining intentions. Customers who gather more information from online sources report a higher interest in the product or company, which may eventually lead to positive dining intentions.
2. The following proposed online review attributes derived from the previous study, including accuracy, completeness, timeliness, review quantity, review consistency, review expertise, product/service rating, website reputation, and credibility, greatly influence customer dining intention.

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3. Customers intend to dine in a restaurant where they have read positive online reviews. Online Reviews provide various information that assists customers in making decisions ahead of time.

### Limitations

Overall, this paper improves our awareness of the role of online reviews towards customer dining intention. Many of the psychological factors that influence customer dining intention must be investigated further. In the incredibly challenging hospitality industry of today, this kind of investigation is particularly necessary. To better understand the relationship between attitudes and intention, further study could test the conceptual framework in various contexts.

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## Social Media as a Tool for Promoting Tourist Destinations in the Municipality of San Rafael, Bulacan, Philippines



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**ABSTRACT:** The study was conducted on the Municipality of San Rafael Bulacan, Philippines. It focused on recognizing the impact, determined the relation and identified the effectiveness of Social Media such as Facebook, Instagram, and TikTok as advertisements towards tourist destinations in the Municipality of San Rafael Bulacan, Philippines. San Rafael is a first-class municipality in the Philippine province of Bulacan. It has a population of 103,097 people according to the 2020 census. With Metro Manila's ongoing expansion, San Rafael is now part of the Greater Manila built-up suburb area, which extends all the way to San Ildefonso, Bulacan in the North. San Rafael is 60 kilometers (37 miles) from Manila, the country's capital.

A descriptive correlational design is used in the research study. The respondents were 50 working employees and 50 tourists from San Rafael River Adventure, The Spot, The Viewpoint Grape & Dragon Fruit Farm + Bambu Cafe, Hey Brew Cafe and Bypass Grill & Restaurant.

Facebook is the most effective platform for looking for and promoting tourist destinations on social media. Twice a week is how often the respondents post and see the promotion of tourist destinations, and between 12:01 p.m. and 6:00 p.m. is the time when respondents usually see and post the promotion of tourist destinations on social media. The image-based, audio-based and text-based content sometimes attracts the interest of the respondents. While, video-based always attracts their interest when looking for a tourist destination. Owned is the most seen and used nature of post according to the findings of the study. Natural paid promotion is the most seen than paid promotion. In addition, the actual tourist is the one who endorses the tourist destinations and Facebook is the most effective platform for looking for and promoting tourist destinations on social media in boost according to the findings of the study.

**KEYWORDS:** social media, tourist destination, descriptive correlation, tourism, tourism promotion

### INTRODUCTION

According to World Tourism Organization (UNWTO), tourism is the act of traveling primarily for recreational or leisure purposes, as well as the provision of services in support of this act. However, tourists are defined as individuals who "travel to and stay in areas outside their typical surroundings for leisure, business, and other objectives unrelated to the execution of a remunerated activity inside the place visited for no more than one year in a row." According to Walton 2022, Tourism is the act and practice of spending time away from home for the purpose of recreation, relaxation, and pleasure while utilizing commercial services provided. Consequently, tourism is a product of modern social structures, having originated in 17th-century Western Europe, although it has roots in classical antiquity. It contrasts from exploration in that tourists follow the "worn road," profit from established systems of provision, and are generally insulated from difficulty, danger, and shame, as would befit a pleasure-seeker. On the other hand, tourism intersects with other activities, interests, and processes, such as pilgrimage.

According to Turisme Proactiu in 2018, two pioneers of tourism research provided one of the earliest conceptual definitions of tourism; it is stated that tourism is the collection of relationships and phenomena resulting from the trip and stay of non-residents, provided that the stay does not lead to permanent residence and is unrelated to any permanent or temporary gains activity. The British Tourism Society provides a clearer definition that tourism is defined as any activity involving the temporary relocation of individuals from their customary locations of employment. and their activities while in these destinations. A conceptual definition is offered for a social view of tourism that warrants special attention: tourism is a sort of relaxation that entails leisurely travel to a less familiar destination or community.

The human desire to communicate and advances in digital technology have inspired the rise of social media. According to Boyd (2014), social media refers to platforms and services that appeared in the early 2000s, such as social networking sites, video-

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sharing sites, blogging and microblogging platforms, and associated technologies that enable users to create and share their personal content. Furthermore, social media allows users to participate in online communities. Users can contribute information, ideas, and content on social media platforms through these channels and mediums, which also help to establish a virtual world of communication.

Massive user communities demonstrate that social media has become a daily occurrence for many people (Kemi, 2016). It has brought people from all over the world closer together by facilitating the creation, sharing, and exchange of information and ideas via virtual communities and networks. These social networking sites generate very dynamic platforms using web-based technology. The platform is undeniably simple to get and employ. Currently, everyone is connected to social media at an alarming rate. Some major social media platforms, such as Facebook and Twitter, have enabled everyone to communicate with others, forge better ties with friends and acquaintances we cannot meet in person, and keep up with their lives. Some programs, such as YouTube, Instagram, and WhatsApp, have made it possible to exchange photos and videos with friends and family who live faraway places. Furthermore, there is a strong connection between social media and tourism. According to Sharma et al. (2017), as an information-based economy, tourism greatly benefits from social media. The information that consumers require will help them plan their trips and make decisions on the destinations they will visit and other travel-related goods. Social media has also increased the reach of businesses because it makes it simple for them to target clients who are located far away without even meeting.

Based on Tjoe (2022), due to their shared emphasis on sharing experiences, social media and tourism complement one another nicely. For younger groups, social media's influence on tourism can be extremely powerful. In addition to Facebook posts, 46% of Generation Z travelers claim that Instagram influences their trip choices. With 51% of millennials claiming that Facebook interactions have impacted or inspired their travel selections, it is clear that this generation is equally open to social media. In addition, according to him, when you take into account how much individuals like sharing and recounting their travel experiences online, the significance of social media in the tourism business becomes abundantly evident. A social media post from friends or relatives may be enough to motivate you to book your next vacation. Social media posts may be an enormously essential source of social proof. Moreover, According to Gohil (2015), one of the best tools for destination marketing and advertising available today is social media. Social media turned out to be a significant means of communication that quickly spread throughout the area. Based on Tjoe (2022), due to their shared emphasis on sharing experiences, social media and tourism complement one another nicely. For younger groups, social media's influence on tourism can be extremely powerful. In addition to Facebook posts, 46% of Generation Z travelers claim that Instagram influences their trip choices. With 51% of millennials claiming that Facebook interactions have impacted or inspired their travel selections, it is clear that this generation is equally open to social media. In addition, according to him, when you take into account how much individuals like sharing and recounting their travel experiences online, the significance of social media in the tourism business becomes abundantly evident. A social media post from friends or relatives may be enough to motivate you to book your next vacation. Social media posts may be an enormously essential source of social proof. Moreover, According to Gohil (2015), one of the best tools for destination marketing and advertising available today is social media. Social media turned out to be a significant means of communication that quickly spread throughout the area. Tourism is one of the industries that has profited the most from the internet. As a result, social media has become an integral part of any national or regional tourism promotion or planning. However, on the contrary, social media may both aid and threaten the tourist business since it has a bad and good impact on traveler decisions. This is because social media users' comments and personal experiences have a significant impact on traveler decisions (Sharma et al. 2018).

Consequently, numerous research papers have explored the effect of social media advertisements on tourism marketing. However, this study focuses on social media as a tool for promoting tourist spots in the San Rafael, Bulacan, municipality. The study's primary objective was to determine whether social media promotion had an effect and impact on promoting tourist sites in the municipality of San Rafael, Bulacan.

The study was conducted on the Municipality of San Rafael Bulacan, Philippines specifically the tourists and working personnel at San Rafael River Adventure, The Spot, The Viewpoint Grape & Dragon Fruit Farm + Bambu Cafe, Hey Brew Cafe and Bypass Grill & Restaurant. There are total of 50 working personnel and 50 tourists. The study focused on recognizing the impact, determined the relation and identified the effectiveness of Social Media such as Facebook, Instagram, and TikTok as advertisement towards tourist destinations in the Municipality of San Rafael Bulacan, Philippines. San Rafael is a first-class municipality in the Philippine province of Bulacan. It has a population of 103,097 people according to the 2020 census. With Metro Manila's ongoing expansion, San Rafael is now part of the Greater Manila built-up suburb area, which extends all the way to San Ildefonso, Bulacan in the North. San Rafael is 60 kilometers (37 miles) from Manila, the country's capital.

Different literatures were classified in this part of the study to give important background of the study, to set the structure and to justify the variables in the research study. According to the book "Understanding Social Media" by Priya Kanwar in 2012, social media refers to websites that allow users to exchange information, multimedia, and so on. Friendster, Facebook, MySpace,

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and other popular social media networks are wonderful examples. Social media also includes YouTube, Photobucket, Flickr, and other image and video sharing sites. The social media category also includes news gathering and online reference sites such as Digg and Wikipedia. Twitter and other microblogging platforms are types of social media. In other words, there are many social media platforms that allow users to communicate with others from all over the world.

Based on Christian FuchsNow's book *Social Media: A Critical Introduction* (2013), individuals must comprehend the positive and negative aspects of social media more than ever before. Critical thinking abilities are required to help individuals understand the problems and challenges of today's complicated media world. Only then can people make appropriate decisions about what is happening in the media and why. As a result, addressing the issue of the social media users' perception is beneficial. Social media networks offer the ability to communicate with millions of individuals in real time across countries. It also has the capability to make life simpler and easier.

According to Denicolai et al. (2019) in Douglas G. Pearce's book "Tourist Destinations: Structure and Synthesis" in 2020, a tourist destination is a local network that generates value chain processes. Their subsequent empirical study of networked core competencies, however, concentrated on tourism firms and public institutions. Moreover, according to Musso (2021), a tourist destination is a site of interest that is frequented by tourists, typically for its inherent or shown natural or cultural worth, historical significance, natural or man-made beauty, or to give recreation and pleasure.

As stated by Gohil (2015), due to the internet's aggressive presence in modern life, social media can be one of the most efficient marketing and advertising platforms for destinations. Social media turned out to be a significant means of communication that quickly spread throughout the area. Tourism is one of the industries that has profited the most from the internet. As a result, social media has become an integral part of any national or regional tourism promotion or planning. In addition, according to Dean (2021) word of mouth is one of the most potent strategies employed by advertisers to market their brands. However, there are 4.48 billion people currently using social media. It quickly spreads information everywhere. On the other hand, based on Buted et.al (2014) social media is a terrific usage to advertise your expertise, products and services. Social media use made it easier and more affordable. It is now being utilized to promote the tourism business through network sites where people generally communicate and meet new ventures.

KÜTÜK (2016) declared that users can contribute a variety of information, images, videos, and text comments about numerous topics via social media sites. One of the fields most closely associated with the internet and social media is tourism. All of these social media are currently used by local and international tourism enterprises to advertise their products and services. Future purchases of goods and services as well as decision-making are significantly influenced by social media engagement with customers. Moreover, Angelkova, et. al (2017), states that the key answer to how social media can boost the tourism promotion of the destination itself is the larger target group. Social media is a 24/7 marketing platform for travel destinations, and every user who visits social media is a potential traveler. When a potential visitor sees pictures or videos of a beautiful location, they may decide to go there without having made any prior plans.

Buted et al. (2014) recognized the social networking platforms that people and the hospitality industry often use, including Facebook, Twitter, YouTube, blogs, and websites. In addition, Cvijanovi et al. (2018) also note that Facebook and Instagram are the most popular social media sites, with people using them primarily to share photos of travel and tourist destinations as well as to make destination decisions. Furthermore, according to Azpeitia, (2021), social media platform TikTok is a platform that offers chances for companies to expand through marketing. Marketing changes as technology does, and firms must modify their marketing tactics as audiences change in order to match their target audiences' growth.

Asuncion et al. (2019) stated that social networking is a very useful and practical marketing tool. Moreover, they responded to online consumer reviews in the same way and said they almost didn't have any major challenges encountered when using social media as a marketing strategy. On the other hand, it is also stated by Buted et al. (2014) that to prevent using social media in a harmful way, one needs to be knowledgeable about the various social media programs. Tourism-related sectors may utilize social media as a marketing tool consistently, but they should be prepared to respond quickly to any issues that may occur.

According to Ghorbanzadeh et al. (2022), since the internet and social media platforms are now two of the most widely used information channels for prospective visitors and are now one of the primary sources of online travel information, the role of social media in the expansion of the tourism sector cannot be overlooked. In addition, based on Gebreel and Shuayb (2022), platforms for social media play a sensitive and crucial role in how well tourism is marketed to and promoted among all users of these media. Additionally, social media platforms have the capacity to give users reliable information about their destinations, enabling them to make informed decisions about their travel plans and the tourist attractions they intend to visit and social networking sites have a significant influence on tourists' ultimate decisions. The ultimate decision made by tourists is directly influenced by social media platforms.

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Based on Sharma et al. (2017), social media is crucial to the tourist sector, which is built on information. Consumers require information that will help them plan their trips and make judgments on the destinations they will visit and other travel-related goods. Social media has helped businesses reach a wider audience because they can now easily target customers who are located far away without really meeting them. However, the use of social media in tourism marketing can be both helpful and dangerous because it has a dual impact on the industry, possessing both positive and negative impacts on the decisions of prospective tourists who are greatly influenced by the posts and personal experiences of other social media users.

### Methods and Techniques of the Study

A descriptive correlational design is used in the research study. According to IvyPanda (2022), utilizing a descriptive correlational methodology, the objective is to create static depictions of occurrences and establish the relationship between variables. Furthermore, it is claimed that in correlational study, two variables, such as an individual's height and weight, are examined to determine their link. The purpose of this method is to determine the relationship between social media promotion and tourist destinations in the municipality of San Rafael, Bulacan. A selfconstructed questionnaire was created by the researchers to inquire about the data collection method of the respondents. Data collection is important to the study because it aims to determine the relationship between social media promotion and its impact on tourism attractions in the municipality of San Rafael, Bulacan.

The respondents were 50 working employees and 50 tourists from San Rafael River Adventure, The Spot, The Viewpoint Grape & Dragon Fruit Farm + Bambu Cafe, Hey Brew Cafe and Bypass Grill & Restaurant. The total number of respondents in this research is one hundred (100). Random sampling techniques were applied to address the research problems given during data collection. According to research-methodology.net, simple random sampling is the purest and most straightforward probability sampling approach (also known as random sampling). This

Tourist destination in San Rafael, Bulacan	Working Personnel	Tourist
San Rafael River Adventure	10	10
The Spot	10	10
The Viewpoint Grape & Dragon Fruit Farm + Bambu Cafe	10	10
Hey Brew Cafe	10	10
Bypass Grill & Restaurant	10	10
Total	50	50

Method is considered to provide the most unbiased portrayal of the population.

### Research Instrument

The study used a self - constructed questionnaire and likert scale questionnaire. The structured questionnaire is a quantitative data collection strategy in which the researchers will ask the working personnel and the tourists in the Municipality of San Rafael Bulacan. There would be one set of questionnaires, which would be described based on platform, frequency, content, nature of post, boost, popularity, and sales.

### Data Gathering Procedure

The researchers get the formal endorsement letter that was signed by the research professor, research adviser, and department head of hospitality and tourism management to present to the tourist destinations of San Rafael, Bulacan. The researchers provide a primary tool in collecting and gathering data in this study which is one set of a self-structured Likert-scaled questionnaire that is intended for all the respondents which are the working personnel and the tourists. The researchers conduct a face-to-face, closed-ended survey with a sample of respondents picked at random. The set of self-constructed questionnaires that is intended for the employees and tourists which would be described based on frequency, content, nature of post, boost, popularity and sales.

### Data Processing and Statistical Treatment

To answer the questions set forth in this study, data were subjected to both descriptive and inferential statistics. While to determine the descriptive statistics, frequency distribution and percentages were used. The statistical treatment that used in the

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study is descriptive statistics and Pearson's  $r$  correlation. According to Bakshi (2021) descriptive statistics are used to characterize the fundamental characteristics of the study's data. It is also stated that it provides simple summaries about the sample and the measures. These are the foundation of almost any quantitative data analysis, along with simple graphics analysis. Descriptive statistics are used to present qualitative data in an understandable form. Additionally, according to Turney (2022), the Pearson correlation coefficient ( $r$ ) is the most often used method of measuring a linear connection. This is a number between negative one (-1) and positive (1) that measures both direction and strength of the relationship between two variables. Furthermore, the Pearson correlation coefficient is a descriptive statistic, which means it summarizes the properties of a dataset. In general, it demonstrates the strength and direction of a linear connection between two numerical variables.

### RESULTS

**Table 1: Social media platform use in promoting/looking for a tourist destination**

Social Media Platform		
Platform	F	%
Facebook	92	57%
Instagram	34	21%
Tiktok	27	17%
Others	8	5%

Table 1 depicts 100 respondents' perceptions of tourist destinations in San Rafael Bulacan's social media promotion used in promoting or searching for tourist destinations. The respondents were asked what social media platform they use. A total number of 92 or 57% respondents uses Facebook, 34 of them or 21% uses Instagram, while TikTok has 27 or 17% users, and 8 or 5% respondents uses other platforms. It can be assumed that Facebook is the most used platform by the respondents when it comes to promoting/looking for tourist destinations.

**Table 2: Posting/seeing the promotion of tourist destinations weekly on social media**

Frequency							
What time do you usually post and see the promotion of tourist destinations on social media?	F	%	M	MD	MO	SD	VI
Once a week	52	52%					
Twice a week	18	18%	1.99	1	1	1.19	Between 12:01 pm to 6:00 pm
Thrice a week	13	13%					
Others	7	7%					

Table 2 shows the 100 respondents' perception in posting/seeing the promotion of tourist destinations weekly on social media. The respondents were asked how often they post or see promotions of tourist destinations in social media. A total number of 52 or 52% of respondents answered once a week, 16 or 16% of them answered twice a week, 13 or 13% of the respondents answered thrice a week, whilst 7 or 7% of them answered others. Thus, it has heterogenous standard deviation of 1.19 meaning that the answers varied individually and can be assumed that the respondents post and see promotions of tourist destinations twice a week as indicated by the computed mean of 1.99.

**Table 3: Time of posting/seeing the promotion of tourist destination on social media**

Frequency							
What time do you usually post and see the promotion of tourist destinations on social media?	F	%	M	MD	MO	SD	VI
Between 6:01 am to 12:00 pm	12	12%					
Between 12:01 pm to 6:00 pm	43	43%	2.4	2	2	0.79	Between 12:01 pm to 6:00 pm
Between 6:01 pm to 12:00 am	38	38%					
Between 12:01 am to 6:00 am	7	7%					

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Table 3 depicts 100 respondents' perceptions of the time of posting/seeing the promotion of tourist destinations on social media. The respondents were asked what time they saw and posted the promotion of tourist destinations on social media. A total number of 12 or 12% respondents answer between 6:01 am to 12:00 pm, 43 of them or 43% answer between 12:01 pm to 6:00 pm, while between 6:01 pm to 12:00 am has 38 or 38% respondents and 7 or 7% respondents answer between 12:01 am to 6:00 am. Thus, it has homogenous standard deviation of 0.79 which means that the answer of individuals is same and can be assumed that between 12:01 pm to 6:00 pm is the time were respondents usually see and post the promotion of tourist destinations on social media as indicated by the computed mean of 2.40.

**Table 4: Social media content that attracts/publishes on social media for promoting tourist destinations**

Content	Response	F	%	M	MD	MO	SD	VI
Image based	Never	0	0%	3.34	4	4	0.61	Sometimes
	Rarely	6	6%					
	Sometimes	34	34%					
	Always	60	60%					
Video based	Never	0	0%	3.51	4	4	0.58	Always
	Rarely	4	4%					
	Sometimes	41	41%					
	Always	55	55%					
Text based	Never	5	5%	2.94	3	3	0.78	Sometimes
	Rarely	18	18%					
	Sometimes	55	55%					
	Always	22	22%					
Audio based	Never	10	10%	3.34	4	5	1.61	Sometimes
	Rarely	33	33%					
	Sometimes	40	40%					
	Always	17	17%					

Table 4 shows 100 respondents' perceptions of social media content that attracts/publishes on social media promoting tourist destinations. The respondents were asked what social media content attracts their interest when looking at a tourist destination and publish on social media promotion of tourist destinations. In image-based content the total number of 0 or 0% respondents answer never, 6 of them or 6% answer rarely, while sometimes 34 or 34% answer and 60 or 60% respondents answer always. Thus, it has a homogeneous standard deviation of 0.61, which means that the answers of individuals are the same, and it can be assumed that in image-based content, it is sometimes that which attracts or is published on social media for promoting tourist destinations, as indicated by the computed mean of 3.34.

While, in video-based content, the total number of 0 or 0% respondents answer never, 4 of them or 4% answer rarely, while sometimes 41 or 41% answer; and 55 or 55% respond always. Thus, it has a homogeneous standard deviation of 0.58, which means that the answers of individuals are the same, and it can be assumed that in video-based content, it is always that which attracts or is published on social media for promoting tourist destinations, as indicated by the computed mean of 3.51.

Furthermore, in text-based content, the total number of 5 or 5% respondents answer never, 18 of them or 18% answer rarely, while in sometimes 55 or 55% answer, and 22 or 22% respond always. Thus, it has a homogeneous standard deviation of 0.78, which means that the answers of individuals are the same, and it can be assumed that in text-based content, it is sometimes that which attracts or is published on social media for promoting tourist destinations, as indicated by the computed mean of 2.94.

Finally, in audio-based content, the total number of 10 or 10% respondents answer never, 33 of them or 33% answer rarely, while sometimes 40 or 40% answer, and 17 or 17% respond always. Thus, it has a homogeneous standard deviation of 0.88, which means that the answers of individuals are the same, and it can be assumed that in audio-based content, it is sometimes that which attracts or is published on social media for promoting tourist destinations, as indicated by the computed mean of 2.64.

**Table 5: Nature of posts that publish and see on social media**

Nature of Post	F	%
Owned	51	48%
Collaboration	19	18%
Grabbed (tourist-made)	33	31%
Others	3	3%

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Table 5 depicts 100 respondents' perception of the nature of posts that they see and publish on social media. The respondents were asked on what nature of post they saw on social media promotions. 51 or 48% of the respondents answered owned, 19 or 18% of them are collaboration, while 33 or 31% of the respondents answered grabbed or tourist made and 3 or 3% of them answered others. Therefore, it can be assumed that owned is the most seen and used nature of post.

**Table 6: Kinds of promotion utilize/see in social media**

<b>Boost</b>							
What kind of promotion do you utilize and see in social media?	F	%	M	MD	MO	SD	VI
Natural Promotion (unpaid promotion, people promote)	86	86%	1.14	1	1	0.35	Natural Promotion (unpaid promotion, people promote)
Paid Promotion	14	14%					

Table 6 depicts 100 respondents' perception in the kinds of promotion they utilize and see in social media. The respondents were asked what kind of promotion they utilize and see on social media, 86 or 86% of respondents answered that they utilize and see natural promotion (unpaid promotion, people promote), while 14 or 14% of respondents answered paid promotions. On that account, it has homogeneous standard deviation of 0.35 meaning it has the same answer of individuals and can be assumed that natural promotion is the most utilized and seen in social media promotion by the computed mean of 1.14.

**Table 7: The endorsers of tourist destinations promotion that post/see in social media**

<b>Boost</b>		
Who endorses the tourist destination's social media promotion strategies that you post and see?	F	%
Influencers	35	26%
People/Actual Tourist	70	52%
Employees	25	19%
Others	4	3%

Table 7 shows 100 respondents' perceptions of the endorsers of tourist destinations promotion that post/see in social media. The respondents were asked who endorses the tourist destinations promotion that they see and post in social media. A total number of 35 or 26% respondents answer influencers, 70 of them or 52% answer people or the actual tourist, while employees have 25 or 19% answers, and 4 or 3% respondents answer others. Thus, it can be assumed that people or actual tourists are the one who endorses the tourist destinations promotion that post/see in social media.

**Table 8: Social media platform use to find tourist destinations**

<b>Boost</b>		
In what way did you find this tourist destination?	F	%
Through Facebook	86	59%
Through Instagram	26	18%
Through Tiktok	24	16%
Others	10	7%

Table 8 depicts 100 respondents' approach in social media recommendations used in finding tourist destinations. The respondents were asked in what way they found out about these tourist destinations. 86 or 59% of them saw it through Facebook, 26 or 18%

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of respondents through Instagram, while 24 or 16% of them found it through TikTok and 10 or 7% of them on other platforms. It can be assumed that the respondents use social media platforms through Facebook to find tourist destinations.

**Table 9: Effects of social media promotion on popularity of tourist destination**

Popularity	Response	F	%	M	MD	MO	SD	VI
Using social media promotion helped me select a destination for my next getaway	Strongly Agree	57	57%	1.45	1	1	0.56	Stongly Agree
	Agree	42	42%					
	Disagree	0	0%					
	Srongly Disagree	1	1%					
My travel decision making is affected by social media promotion.	Strongly Agree	38	38%	1.7	2	2	0.64	Agree
	Agree	56	56%					
	Disagree	0	0%					
	Srongly Disagree	2	2%					
Social media helps the tourist destination to be known.	Strongly Agree	67	67%	1.35	1	1	0.54	Stongly Agree
	Agree	32	32%					
	Disagree	0	0%					
	Srongly Disagree	1	1%					
My travel decision making is affected by social media promotion.	Strongly Agree	67	67%	1.41	1	1	0.55	Stongly Agree
	Agree	32	32%					
	Disagree	0	0%					
	Srongly Disagree	1	1%					
Social media promotion helped in increasing the number of people visiting the tourist	Strongly Agree	61	61%	1.31	1	1	0.53	Stongly Agree
	Agree	38	38%					
	Disagree	0	0%					
	Srongly Disagree	1	1%					

Table 9 illustrates the effect of social media promotion on the popularity of tourist destinations. When the respondents were asked if social media promotion helped them select a destination for their next getaway, a total of 57 of them, or 57%, answered strongly agree, 42 of them, or 42%, agreed, while 0 or 0% answered disagree, and 1 or 1% responded strongly disagree. Thus, it has a homogeneous standard deviation of 0.56, which means that the answers of individuals are the same, and it can be assumed that the respondents strongly agree that social media promotion helped them select a destination for their next getaway, as indicated by the computed mean of 1.45.

In the question to the respondents if social media promotion affects their travel decision making, a total number of 38 or 38% answered strongly agree, 56 of them or 56% answered agree, while 0 or 0% answered disagree and 2 or 2% responded strongly disagree. Therefore, it has a homogeneous standard deviation of 0.64, which means that the answers of individuals are the same, and it can be assumed that the respondents agree that social media promotion affects their travel decision, as indicated by the computed mean of 1.70.

In the question to the respondents if social media helps the tourist destinations to be known, a total number of 67 or 67% answered strongly agree, 32 of 32% answered agree, while 0 or 0% answered disagree and 1 or 1% responded strongly disagree. Thus, it has a homogeneous standard deviation of 0.54 which means that the answers of individuals are the same and can be assumed that the respondents strongly agree that social media promotion helps the tourist destinations to be known as indicated by the computed mean of 1.35.

Furthermore, in the question asked of the respondents if social media promotion helped in increasing the number of people visiting the tourist destination, a total of 61 or 61% answered strongly agree, 38 of 38% answered agree, 0 or 0% answered disagree, and 1 or 1% responded strongly disagree. Thus, it has a homogeneous standard deviation of 0.55, which means that the answers of individuals are the same, and it can be assumed that the respondents strongly agree that social media promotion helped increase the number of people visiting the tourist destination, as indicated by the computed mean of 1.41.

Finally, in the question to the respondents about whether social media promotion is a great way to attract visitors to a tourist destination, a total of 71 or 71% answered strongly agree, 28 or 28% answered agree, 0 or 0% answered disagree, and 1 and 1% responded strongly disagree. Therefore, it has a homogeneous standard deviation of 0.53 which means that the answers of individuals are the same and can be assumed that the respondents strongly agree that social media promotion is a great way to attract visitors to a tourist destination as indicated by the computed mean of 1.31.



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**Table 10: Effects of social media promotion on tourist destination in terms of sales**

Sales	Response	F	%	M	MD	MO	SD	VI
Social media gives you a competitive advantage over competitors who still use traditional techniques.	Strongly Agree	56	56%	1.48	1	1	0.59	Strongly Agree
	Agree	41	41%					
	Disagree	2	2%					
	Strongly Disagree	1	1%					
Social media promotion helps develop relationship with potential customers	Strongly Agree	57	57%	1.45	1	1	0.56	Strongly Agree
	Agree	42	42%					
	Disagree	0	0%					
	Strongly Disagree	1	1%					
Social media promotion can help you reach out to the right prospect and brand awareness	Strongly Agree	63	63%	1.39	1	1	0.55	Strongly Agree
	Agree	36	36%					
	Disagree	0	0%					
	Strongly Disagree	1	1%					

Table 10 depicts 100 respondents' perception of the effects of social media promotion on tourist destinations in terms of sales. When the respondents were asked if social media gives a competitive advantage over competitors who still use traditional techniques, a total number of 56 or 56% answered strongly agree, 41 of them or 41% answered agree, while those who disagree have 2 or 2% answers and 1 or 1% respond strongly disagree. Thus, it has a homogeneous standard deviation of 0.59 which means that the answers vary individually and can be assumed that it is strongly agreed that social media gives a competitive advantage over competitors who still use traditional techniques as indicated by the computed mean of 1.48.

In the question to the respondents, if the social media promotion helps develop relationships with potential customers, a total number of 57 or 57% answers strongly agree, 42 or 42% answers agree while disagrees have 0 or 0% answer and 1 or 1% respond strongly disagree. Therefore, it has a homogeneous standard deviation of 0.56, which means that the answers of individuals vary and can be assumed that it is strongly agreed that social media promotion helps develop relationships with potential customers as indicated by the computed mean of 1.45.

Finally, in the question to the respondents if social media promotion can help you reach out to the right prospects and raise brand awareness a total number of 63 or 63% answers strongly agree, 36 or 36% answers agree while disagree have 0 or 0% answer and 1 or 1% respond strongly disagree. Thus, it has a homogeneous standard deviation of 0.55, which means that the answers vary individually and can be assumed that it is strongly agreed that social media promotion can help you reach out to the right prospects and raise brand awareness as indicated by the computed mean of 1.39.

**Table 11: The relationship between social media promotion and tourist destinations in the municipality of San Rafael, Bulacan**

	p1	f1	f2	ci	cv	ct	ca	n1	b1	b2	b3	p1	p2	p3	p4	p5	s1	s2	s3
p1	1.00																		
f1	0.18	1.00																	
f2	0.06	0.18	1.00																
ci	0.26	0.19	0.03	1.00															
cv	0.22	0.39	-0.03	0.27	1.00														
ct	0.05	-0.06	0.04	-0.04	-0.18	1.00													
ca	0.09	-0.02	-0.21	0.05	0.03	0.47	1.00												
n1	0.17	-0.14	0.17	0.06	-0.09	0.18	-0.08	1.00											
b1	0.10	-0.08	-0.02	-0.31	0.24	-0.01	-0.10	0.01	1.00										
b2	0.19	-0.09	0.17	-0.13	-0.16	0.03	-0.03	0.11	-0.07	1.00									
b3	0.40	-0.02	0.04	0.15	0.13	-0.05	-0.04	0.05	0.06	0.36	1.00								
p1	0.22	-0.13	-0.05	-0.16	0.03	0.13	0.09	-0.16	0.14	-0.09	-0.30	1.00							
p2	0.12	-0.02	0.06	-0.02	-0.07	0.19	-0.09	0.00	-0.04	0.04	0.01	0.52	1.00						
p3	0.19	-0.26	0.02	-0.03	-0.13	-0.14	-0.20	0.12	-0.10	0.03	0.02	0.51	0.42	1.00					
p4	0.16	-0.21	0.11	-0.15	-0.19	-0.20	-0.15	0.04	-0.04	0.11	-0.06	0.38	0.38	0.73	1.00				
p5	0.14	-0.24	0.09	-0.15	-0.09	-0.13	-0.15	0.07	-0.02	0.13	-0.05	0.42	0.37	0.72	0.78	1.00			
s1	0.10	-0.08	0.06	-0.14	-0.07	0.02	-0.03	0.06	0.06	0.03	-0.14	0.38	0.43	0.45	0.50	0.52	1.00		
s2	0.08	-0.05	0.16	-0.07	0.03	-0.05	-0.10	0.11	0.09	-0.07	0.01	0.28	0.38	0.45	0.44	0.52	0.56	1.00	
s3	0.09	-0.10	0.20	-0.18	-0.12	-0.04	-0.15	-0.04	0.08	0.02	-0.03	0.35	0.39	0.46	0.53	0.59	0.60	0.77	1.00

P1: Social media platform use in posting/looking for tourist destination

F1: Posting/seeing the promotion of tourist destinations weekly on social media

F2: Time of posting/seeing the promotion of tourist destination on social media

CI: Image based content that publish/attracts the interest of the respondents in social media

CV: Video based content that publish/attracts the interest of the respondents in social media

CT: Text based content that publish/attracts the interest of the respondents in social media

CA: Audio based that publish/attracts the interest of the respondents in social media

N1: Type of nature of post that publish/see on social media

B1: Promotion that utilize/see in social media

B2: Endorsers of the promotion that post/see in social media

B3: Social media platform use to find tourist destinations

P1: The use of social media promotion to help select a destination for the next getaway

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P2: Social media promotion influences travel decisions

P3: Social media aids in publicizing the tourism location

P4: The help of social media promotion in increasing the visitors of tourist destination P5: Visitors to a tourism destination are drawn in by social media promotion

S1: The advantage of social media users over those who still use traditional techniques

S2: The help of social media promotion in developing relationships with potential customers

S3: Social media promotion as a tool for having the right prospects and brand awareness

The Pearson r correlation table interpretation:

.00 - .30 - negligible

.31 - .50 - low

.51 - .70 - moderate

.71 - .90 - high

.91 - 100 - very high

Based on the Pearson R correlation test the following: show low to high positive negative correlation.

The CI, which stands for "image-based content," is the first variable that demonstrates the type of media content that piques the interest of vacationers while they are searching for new places to visit. On the other hand, B1, also known as the first question in Boost, is the second variable that inquiries into the manner of promotion that the respondents make use of and observe on social media. Based on the Pearson r correlation computation with a total of -0.31 that was done between CI and B1, the image that was based on the content has a negative low correlation on Boost 1, which refers to the different forms of promotion that are utilized and viewed in social media.

	<b>B1: Promotion that utilize/see in social media</b>	
<b>C1: Image based content that publish/attracts the interest of the respondents in social media</b>		<b>-0.31</b>

	<b>P1: The use of social media promotion to help select a destination for the next getaway</b>	
<b>S3: Social media promotion as a tool for having the right prospects and brand awareness</b>		<b>0.35</b>

The first question in the Platform section or P1, inquires of respondents as to which platform they consult first when looking at potential tourist destinations. When it comes to reaching out to the right prospect and increasing brand awareness, the S3 or question number 3 in Sales asks respondents to indicate whether they Strongly Agree, Agree, Disagree, or Strongly Disagree that social media marketing can help. Based on Pearson r correlation computation with a total of 0.35 indicates that the P1 or question 1 in platform has a positive low correlation in the S3 or Sales question number 3, which indicates that it has a variable that is rarely associated.

	<b>B2: Endorsers of the promotion that post/see in social media</b>	
<b>B3: Social media platform use to find tourist destinations</b>		<b>0.36</b>

B2, also known as question 2, is the second variable in Boost. It is the first variable that asks who encourages the social media advertising methods that tourist destinations publish and see. In the meantime, B3, which is the third question in Boost, is the second variable that inquires as to how the tourist destination was discovered by the respondents. If you heard about it through a friend or through social media. It has a positive low correlation to each other, suggesting that the promotion techniques they post and observe are rarely associated to how they found out about the tourist locations, based on Pearson r correlation with a computed total of 0.36, which indicates that it has a positive low correlation to each other.

	<b>P2: Social media promotion influences travel decisions</b>	
<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>		<b>0.37</b>

The second question in the Popularity section or P2 asks respondents to indicate whether they strongly Agree, Agree, Disagree, or Strongly Disagree with the statement that the promotion they see on social media influences their travel decisions. The fifth question in the Popularity section or P5 asks whether or not the use of social media is an effective strategy to entice people to visit a certain tourist area. Based on Pearson correlation computation, which was 0.37, it has a positive low correlation, which indicates that their travel decision making is hardly related in social media promotion and is hardly related as to great ways of attracting a visitor in a tourist destination. This indicates that social media promotion is hardly related as a great way of attracting a visitor in tourist destinations.

	<b>P1: The use of social media promotion to help select a destination for the next getaway</b>	
<b>P4: The help of social media promotion in increasing the visitors of tourist destination</b>		<b>0.38</b>

P1, also known as the question number one in Popularity, asks respondents to indicate whether they strongly Agree, Agree, Disagree, or Strongly Disagree with the statement that the use of social media helps tourists choose their destination for their upcoming vacation. The fourth question in the Popularity section (P4) inquires as to whether or not the promotion of the tourist attraction through social media contributed to an increase in the number of persons who visited the location. Based on Pearson correlation computation, which was 0.38, the two have a positive low correlation, which indicates that the variables are hardly

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related or that the social media promotion somewhat helps the tourist for their next destination and barely helps them in increasing the number of people visiting the tourist destination. In other words, the variables are hardly related to each other.

	<b>P1: The use of social media promotion to help select a destination for the next getaway</b>	
<b>S1: The advantage of social media users over those who still use traditional techniques</b>		<b>0.38</b>

P1, also known as question one in the Popularity section, is the first variable that determines whether or not the traveler strongly agrees or Agrees with the statement being made. Disagree, or strongly disagree if the use of social media enabled them to select a destination for their next getaway. While S1 or question one in the Sales section questions whether social media delivers a competitive advantage over competitors who still use traditional approaches. Based on Pearson correlation computed result of 0.38, the two have a positive low correlation, implying that the two variables are rarely associated with each other. The social media promotion didn't really assist them in choosing a location for their next vacation, but it does provide them with a slight advantage over competitors who continue to rely on traditional methods.

	<b>P2: Social media promotion influences travel decisions</b>	
<b>P4: The help of social media promotion in increasing the visitors of tourist destination</b>		<b>0.38</b>

The second question on the Popularity (P2) scale is the first variable, and it inquires as to whether or not the respondents' travel decisions are influenced by social media. The fourth question in the Popularity category, also known as P4, inquires as to whether or not the promotion of the tourist destination through social media helps to increase the number of people who visit the place. Based on pearson r correlation computation 0.38, which indicates that the two have a positive low correlation, which can be interpreted to mean that social media promotion with helping in selecting destination for next getaway and helping them in increasing the number of people visiting their tourist destination is hardly correlated with one another.

	<b>P2: Social media promotion influences travel decisions</b>	
<b>S2: The help of social media promotion in developing relationships with potential customers</b>		<b>0.38</b>

P2, also known as question number two in Popularity, is the first variable that examines whether or not the respondents' travel choice making is influenced by the marketing they see on social media. While S2, also known as the second question in Sales,

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inquiries into whether or not advertising through social media can assist in developing relationships with prospective clients. Based on the Pearson r correlation computation 0.38, which indicates that it has a positive low correlation, which shows that their trip decision making and the development of interaction with the potential customers is barely associated in terms of social media advertising.

	<b>F1: Posting/seeing the promotion of tourist destinations weekly on social media</b>	
<b>CV: Video based content that publish/attracts the interest of the respondents in social media</b>		<b>0.39</b>

The F1 or Frequency 1 variable is the first one that demonstrates posting or seeing the promotion of tourist destinations weekly on social media. On the other hand, the CV or Content video-based variable is the second one that inquires about the media content that piques the interest of tourists when they are searching for tourist destinations. The computation between F1 and CV reveals that the posting or witnessing the advertising of tourist locations weekly on social media has a positive low on the Video based on Pearson r correlation of 0.39. This is since it has a positive low on the Video based on content.

	<b>P2: Social media promotion influences travel decisions</b>	
<b>S3: Social media promotion as a tool for having the right prospects and brand awareness</b>		<b>0.39</b>

The P2 or question number two in the platform of the social media promotion affected in their travel decision making in the first variable, and the S3 or the question number three in the sales to the respondents if social media promotion can help to reach out to the right prospects and raise brand awareness serves as the second variable in this study. The result of the computation between P2 and S3 shows a positive low correlation based on Pearson correlation computation of 0.39, which indicates that social media promotion has an effect on travel decision making. At the same time, social media promotion can help to reach out to the appropriate prospects and raise brand awareness.

	<b>P2: Social media promotion influences travel decisions</b>	
<b>B3: Social media platform use to find tourist destinations</b>		<b>0.40</b>

As the first variable, P1, also known as question number one, inquires of respondents as to which platform they consult first when looking at potential tourism locations. When it arrives in Boost 3, is the second variable that asks how the tourist location was discovered by the respondents. The purpose of this question is to gather more information about the respondents' travel

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experiences. Based on the Pearson correlation computation between P1 and B3, it has a 0.40 positive low correlation, which indicates that it also helped tourists in selecting a tourist destination for the upcoming vacation by providing them with more alternatives, as well as reaching out to the appropriate prospects and increasing brand awareness. This was accomplished by providing them with more options.

	<b>P1: The use of social media promotion to help select a destination for the next getaway</b>	
<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>		<b>0.42</b>

P1, also known as question number one, is the name of the variable that asks respondents which platform they consult first while looking into suitable tourism places. This question is the first variable in the study. When it comes to population 5, the advertising of a tourist site through social media is an efficient method for luring visitors to visit that location. Based on Pearson correlation computation of 0.42 with a positive low correlation, which indicates that it helped tourists in selecting a tourist destination for the upcoming vacation by providing them with more alternatives at the same time social media promotion is an effective method of attracting tourists to a tourist destination. This finding was determined by the findings of the investigation.

	<b>P1: The use of social media promotion to help select a destination for the next getaway</b>	
<b>P3: Social media aids in publicizing the tourism location</b>		<b>0.42</b>

The P2 or question number two in the platform of the social media promotion affected in their travel decision making in the first variable, when it comes to Population 3, which stands for question number three in the popularity if social media helps the tourist destinations to be known serve as the second variable. As a result of performing the computation between P2 and P3, based on Pearson r correlation computation of 0.42, it has a positive low correlation, which indicates their travel decision making is hardly related in social media promotion is hardly related as to great way attracting a visitor in tourist destination at the same time social media promotion it helps the tourist destinations to be known.

	<b>P2: Social media promotion influences travel decisions</b>	
<b>S1: The advantage of social media users over those who still use traditional techniques</b>		<b>0.43</b>

The P2 or question number two in the platform of the social media promotion affected their travel decision making in the first variable, while S1 or question one in the Sales section questions whether social media delivers a competitive advantage over

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competitors who still use traditional approaches. Based on the Pearson  $r$  correlation computation of 0.43, the two have a positive low correlation, which indicates their travel decision making is hardly related to social media promotion, which is a great way of attracting a visitor to a tourist destination at the same time giving a competitive advantage over rivals who still use traditional techniques.

	<b>P4: The help of social media promotion in increasing the visitors of tourist destination</b>	
<b>S2: The help of social media promotion in developing relationships with potential customers</b>		<b>0.44</b>

The fourth question on P4 inquires as to whether or not the promotion of the tourist destination through social media helps to increase the number of people who visit the place. While S2, also known as the second question in Sales, inquires into whether or not advertising through social media can assist in developing relationships with prospective clients. Based on the Pearson correlation computation of 0.44, the two have a positive low correlation, which indicates that helping them in increasing the number of people visiting their tourist destination is hardly correlated with one another and the development of interaction with the potential customers is barely associated in terms of social media advertising.

	<b>P3: Social media aids in publicizing the tourism location</b>	
<b>S1: The advantage of social media users over those who still use traditional techniques</b>		<b>0.45</b>

The P3 or the Population question three, which stands for question number three in popularity, if social media helps the tourist destinations to be known, serve as the second variable. While S1 or question one in the Sales section questions whether social media delivers a competitive advantage over competitors who still use traditional approaches. Based on Pearson correlation computation of 0.45, there is a positive low correlation, which indicates social media promotion, it helps the tourist destinations to be known and gives a competitive advantage over rivals who still use traditional techniques.

	<b>P3: Social media aids in publicizing the tourism location</b>	
<b>S2: The help of social media promotion in developing relationships with potential customers</b>		<b>0.45</b>

The first variable is "P3," which stands for "question number three in the popularity if social media helps the tourist destinations to be known." The second variable is "S2," which stands for "question number two in the sales to the respondents: whether social media promotion helps develop relationships with potential customers." Based on Pearson correlation computation between P3

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and S2, the result demonstrates a 0.54 positive low correlation, which indicates that the promotion of tourist sites through social media assists these locations in becoming more wellknown while simultaneously creating relationship with prospective clients.

	<b>P3: Social media aids in publicizing the tourism location</b>	
<b>S3: Social media promotion as a tool for having the right prospects and brand awareness</b>		<b>0.46</b>

The first variable is P3, or question number three in the popularity if social media helps the tourist destinations to be known, and the second variable is S3, or question number three, in sales to respondents if social media promotion helps reach out to the right prospects and raise brand awareness. Based on Pearson correlation computation between P3 and S3, it has a 0.46 positive low correlation, which indicates that the promotion of tourist destinations in social media helps the location to be known, as well as reach out to the appropriate prospects and increase brand awareness.

	<b>CT: Text based content that publish/attracts the interest of the respondents in social media</b>	
<b>CA: Audio based that publish/attracts the interest of the respondents in social media</b>		<b>0.47</b>

CT, also known as text-based media content, will serve as the first variable, while the CA, also known as audio-based media content, function as the second variable. Based on the Pearson correlation computation of between the variables CT and CA, there is a 0.47 positive low correlation, which indicates that text-based and audio-based content are types of media content that attract the interest of the respondents and are typically published in promoting tourist destinations through social media.

	<b>P4: The help of social media promotion in increasing the visitors of tourist destination</b>	
<b>S1: The advantage of social media users over those who still use traditional techniques</b>		<b>0.50</b>

The first variable is "P4", which stands for "question number four in the popularity if social media promotion helps to increase the number of people who visit the tourist destinations." The second variable is "S1," which stands for "question number one in the sales to the respondents if social media gives a competitive advantage over competitors who use traditional techniques." On the basis of the computation between P4 and S1, based on Pearson r correlation computation of 0.50, which is a positive low correlation, which indicates that in social media promotion, it helps to increase the number of people who visit the tourist destinations while at the same time giving a competitive advantage over rivals who still use traditional techniques.



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	<b>P1: The use of social media promotion to help select a destination for the next getaway</b>	
<b>P3: Social media aids in publicizing the tourism location</b>		<b>0.51</b>

The P1 variable, also known as question one in the Popularity section, is the first one to demonstrate that the respondents' usage of social media promotion helped them in selecting a tourist destination for the next getaway. On the other hand, P3, also known as question three in popularity, is the second variable that demonstrates that the promotion of a tourist destination through social media helps to increase its level of popularity. Based on Pearson correlation computation between P1 and P3, there is a positive moderate that yields the value of 0.51. It is an indication that the promotion of a tourist destination helped it become widely known, and it also helped tourists in selecting a tourist destination for the upcoming vacation by providing them with more alternatives.

	<b>The use of social media promotion to help select a destination for the next getaway</b>	
<b>P2: Social media promotion influences travel decisions</b>		<b>0.52</b>

The P1, which is also known as question one in the Popularity section, is the first one to illustrate that the respondents' use of social media promotion helped them in selecting a tourist destination for the next getaway. This is demonstrated by the fact that the respondents' usage of social media promotion was significantly higher than the overall average. On the other hand, P2, also referred to as question two in popularity, is the second variable that reveals that social media advertising of a tourist destination has an effect on the decision-making process that tourists go through when selecting where to go on vacation. Based on the Pearson r correlation computation between P1 and P2, there is a positive moderate that results in the value of 0.52 being obtained? It shows that social media promotion of a tourist destination influences travelers' travel decisions and helps it become well-known.

	<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>	
<b>S1: The advantage of social media users over those who still use traditional techniques</b>		<b>0.52</b>

The P5 variable, also known as question five in the Popularity section, is the first variable to indicate that social media promotion is an effective technique for attracting tourists to a tourist destination. On the other side, S1, also known as question one in sales, is the second variable that reveals that social media provides an advantage over competitors that continue to promote a tourist destination using traditional techniques. Based on Pearson correlation computation between P5 and S1 is a positive moderate with

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a value of 0.52. It indicates that social media promotion is superior to traditional strategies for promoting tourist destinations, and that social media promotion is an effective technique of attracting tourists to a tourist destination.

	<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>	
<b>S2: The help of social media promotion in developing relationships with potential customers</b>		<b>0.52</b>

The P5, also referred to as question five in the Popularity section, is the first variable indicating that social media promotion is an effective strategy for attracting tourists to a tourist destination. S2, often known as question two in sales, is the second variable indicating that social media facilitates the development of relationships with potential consumers. Based on the Pearson r correlation computation between P5 and S2 yields a positive moderate with a value of 0.52. It implies that social media promotion is an effective method for bringing tourists to a tourist destination, as well as a method for gaining and developing relationships with potential customers.

	<b>P4: The help of social media promotion in increasing the visitors of tourist destination</b>	
<b>S3: Social media promotion as a tool for having the right prospects and brand awareness</b>		<b>0.53</b>

P4, also known as question four in the Popularity section, is the first variable demonstrating that social media promotion contributed to an increase in the number of visitors to the tourist destination. S3, also known as question three in sales, is the second variable showing that social media promotion can assist in reaching the appropriate prospects and increasing brand awareness. Based on Pearson correlation computation between P4 and S3 is a positive moderate of 0.53. It is implied that promotion on social media helps in raising the number of people visiting the tourist destination. Additionally, promotion on social media may assist in reaching out to the appropriate prospects and improving brand awareness of a tourist destination.

	<b>S1: The advantage of social media users over those who still use traditional techniques</b>	
<b>S2: The help of social media promotion in developing relationships with potential customers</b>		<b>0.56</b>

S1, also referred to as question one in the Sales section, is the first variable used to demonstrate that promotion using social media gives a competitive advantage over competitors who continue to rely on traditional technique. The second variable showing that the use of social media makes it easier to create relationships with prospective customers is indicated by the S2. This variable is also referred to as question two in sales. Based on the Pearson r correlation computation of 0.56 is the outcome of the computation

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that was performed between S1 and S2. It suggests that traditional promotion techniques for tourist destinations are being replaced by social media promotion as the preferable method. In addition, promotion on social media may be used as a tool for gaining potential customers and developing relationships with it.

	<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>	
<b>S3: Social media promotion as a tool for having the right prospects and brand awareness</b>		<b>0.59</b>

The P5 variable, which is also referred to as question five in the Popularity section, is the first variable that indicates that promoting a tourist destination using social media is an effective strategy for attracting visitors to visit a destination. S3, also known as question three in sales, is the second variable demonstrating that promoting through social media may help in reaching the suitable prospects and raising brand awareness. This variable is known as S3. Based on the Pearson r correlation computation between P5 and S3 yielded a result of 0.59, which may be interpreted as a positive moderate. It indicates that promotion through social media is an effective strategy for attracting tourists to a tourist destination. Furthermore, promotion through social media may help in reaching the suitable prospects and raising brand awareness.

	<b>S1: The advantage of social media users over those who still use traditional techniques</b>	
<b>S3: Social media promotion as a tool for having the right prospects and brand awareness</b>		<b>0.60</b>

S1, also known as question one in the Sales section, is the first variable used to demonstrate that social media advertising gives a competitive advantage over competitors who are still relying on traditional techniques. S3, also known as question three in sales, is the second variable indicating that promoting via social media may help in reaching the appropriate prospects and increasing brand awareness. Based on Pearson correlation computation between S1 and S3 was 0.60, which may be taken as a positive moderate. It demonstrates that traditional promotion approaches for tourist destinations are being surpassed by social media promotion as the best strategy, and social media promotion may help in reaching the relevant prospects and raising brand awareness.

	<b>P3: Social media aids in publicizing the tourism location</b>	
<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>		<b>0.72</b>

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The first variable is P3, or question number three in the popularity if social media helps the tourist destinations to be known, and the second variable is P5, or question number five, in the popularity if social media promotion is a great way to attract visitors to a tourist destination. Based on Pearson correlation computation between P3 and P5, it has a 0.72 positive high correlation, which indicates that in social media promotion it helps the tourist destinations to be known and at the same time it is also a great way to attract visitors to a tourist destination.

	<b>P3: Social media aids in publicizing the tourism location</b>	
<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>		<b>0.72</b>

The P3, or question number three, in the popularity if social media helps the tourist destinations be known is the first variable; on the other hand, the second variable is the P4, or question number four, in the popularity if social media promotion helps increase the number of visitors to the tourist destinations. Based on Pearson correlation computation between P3 and P4, the result shows 0.73, which is a positive high correlation, which indicates that in social media promotion it helps to increase the number of visitors to the tourist destinations and at the same time helps them to be known.

	<b>S2: The help of social media promotion in developing relationships with potential customers</b>	
<b>S3: Social media promotion as a tool for having the right prospects and brand awareness</b>		<b>0.77</b>

The first variable is S2, or question number two, in the sales if social media promotion helps to develop relationships with potential customers, and the second variable is S3, or question number three, in the sales if social media promotion can help to reach out to the right prospects and raise brand awareness. Based on Pearson correlation computation between S2 and S3, it has a 0.77 positive high correlation, which indicates that in social media promotion, it helps to develop relationships with potential customers and at the same time helps to reach appropriate prospects and increase brand awareness.

	<b>P4: The help of social media promotion in increasing the visitors of tourist destination</b>	
<b>P5: Visitors to a tourism destination are drawn in by social media promotion</b>		<b>0.78</b>

The P4, or the question number four in the popularity if social media promotion helps to increase the number of visitors of the tourist destinations is the first variable, on the the other hand the second variable is the P5 or question number five in popularity if social media promotion is a great way to attract visitors to a tourist destination. Based on Pearson r correlation computations

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between P4 and P5, it has a 0.78 positive high correlation, which indicates that in social media promotion, it is a great way to attract visitors to a tourist destination and at the same time help to increase the number of visitors to a tourist destination.

Summary Output

<i>Regression Statistics</i>	
Multiple R	0.17
R Square	0.03
Adjusted R Square	0.02

Standard Error 1.18 Observations 99.00

### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1.00	4.26	4.26	3.05	0.08
Residual	97.00	135.74	1.40		
Total	98.00	140.00			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>	
Intercept	2.71	0.42	6.38	0.00	1.87	3.56	1.87	3.56	
	13.00	-0.06	0.04	-1.75	0.08	-0.13	0.01	-0.13	0.01

Statistically significant

Thus, reject the null hypothesis

There is statically significant relationship ( $r= 0.17$ ,  $p= 0.08$ ) between social media platform and promotion of tourist destinations in the Municipality of San Rafael, Bulacan.

## DISCUSSION

According to the study's findings, Facebook, with 57% of responses, is the most popular platform for travelers searching for tourist destinations, as well as the most popular platform for social media promotion of tourist destinations. As supported in the study by Tjoe (2022), in which 51% of millennial claim that Facebook interactions have impacted or inspired their travel selections, this generation is equally open to social media. In addition, according to him, when you take into account how much individuals like sharing and recounting their travel experiences online, the significance of social media in the tourism business becomes abundantly evident. The data from the study reveals that the respondents post and see the promotions of tourist destinations twice a week, as indicated by the computed mean of 1.99. On the other hand, it also reveals that between 12:01 p.m. and 6:00 p.m. is the time when respondents usually see and post the promotion of tourist destinations on social media, as indicated by the computed mean of 2.40. These findings supported with what Cvijanović, et al. (2018) stated that social media is a 24/7 marketing platform for travel destinations, and every user who visits social media is a potential traveler. When looking at a tourist destination on social media, it sometimes piques the respondent's interest, according to the computed mean of 3.34 for image-based content. While video content has a computed mean of 3.51, it always attracts tourists who were looking for a destination on social media. Text-based content, on the other hand, with an indicated mean of 2.94, can be assumed to sometimes attract or publish content on social media for promoting destinations. Finally, audio-based content with a computed mean of 2.64 sometimes attracts tourists and respondents on social media for promoting tourist destinations. As stated, and supported by KÜTÜK (2016) study, users can contribute a variety of information, images, videos, and text comments about numerous topics via social media sites. One of the fields most closely associated with the internet and social media is tourism. All these social media are currently used by local and international tourism enterprises to advertise their products and services. In accordance with the perception of nature of post that the respondents see and publish on social media, it is found that owned is the most seen and used nature of post as indicated by the computed percentage which is 48%. As stated, and supported by Gohil (2015) social media can be one of the most powerful tools for destination marketing and advertising thanks to the Internet's aggressive presence in today's society. Also, social media turned out to be a significant means of communication that quickly spread throughout the area. According to the study's finding, natural promotion or unpaid promotion as indicated by the computed mean of 1.14 of responses is the promotion that is

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utilized/seen in social media. Additionally, people/actual tourists with the 52% of responses are the ones who endorse the tourist destinations promotion that post and see in social media and lastly, Facebook with the 59% responses in social media platforms used to find tourist destinations. As stated, and supported by Gohil (2015) social media can be one of the most powerful tools for destination marketing and advertising thanks to the Internet's aggressive presence in today's society. Furthermore, social media turned out to be a significant means of communication that quickly spread throughout the area. According to the findings of the research study, social media promotion helped the tourists to select a destination for their next getaway. On this particular topic, fifty-seven (57) out of one hundred (100) respondents strongly agree. On the other hand, 56 of the 100 respondents agree that the promotion of a tourist destination through social media has an effect on a tourist's choice of selecting a certain place as a tourist destination. Sixty-seven (67) of the one hundred (100) respondents strongly agree that promoting a tourist destination through social media may help to make the destination more known. Sixty-one (61) of one hundred (100) respondents strongly agree in the statement that the promotion of the tourist destination through social media contributes to an increase in the number of tourists visiting the tourist destination. Seventy-one (71) out of one hundred respondents (100) also strongly agree in agreement that promotion through social media platforms is an excellent strategy to attract tourists to a tourist destination. This was supported by Gohil (2015) statement that social media has grown in popularity as a result of the Internet's aggressive presence in today's culture and may be one of the most potent tools for destination marketing and promotion. The tourist industry has benefited the most from the internet, and as a result, social media has become an integral component of any national or regional tourism planning or promotion. It is currently used to promote the tourist industry through network sites where individuals connect and seek out new tourist destinations. According to the study's findings, the effects of social media promotion on tourist destinations in terms of sales indicate that social media promotion gives a competitive advantage over competitors who still use traditional techniques. On this particular topic, fifty-six (56) out of 100 respondents strongly agree. On the other hand, fifty-seven (57) out of 100 respondents strongly agree that social media promotion helps to develop relationships with potential customers. In addition, sixty-three (63) out of 100 respondents strongly agree that social media promotion helps to reach out to the right prospects and raise brand awareness. As stated and supported by Buted et.al (2014) social media is a terrific usage to advertise your expertise, products and services. Social media use made it easier and more affordable. It is now being utilized to promote the tourism business through network sites where people generally communicate and meet new ventures.

### **CONCLUSIONS**

In the light of the findings of this research the following conclusions were drawn:

Facebook is the most effective platform for looking for and promoting tourist destinations on social media. Twice a week is how often the respondents post and see the promotion of tourist destinations, and between 12:01 p.m. and 6:00 p.m. is the time when respondents usually see and post the promotion of tourist destinations on social media. The image-based, audio-based and textbased content sometimes attracts the interest of the respondents. While, video-based always attract their interest when looking for a tourist destination. Owned is the most seen and used nature of post according to the findings of the study. Natural paid promotion is the most seen than paid promotion. In addition, the actual tourist is the one who endorses the tourist destinations and Facebook is the most effective platform for looking for and promoting tourist destinations on social media in boost according to the findings of the study.

The usage of different social media platforms for promotional purposes helps tourists in selecting a travel destination. In order to find anything that attracts people, tourists rely on social media. Due to this, the number of people who visit a tourist destination will rise if it is promoted through social media. Social media promotion helps a tourist destination become widely known and recognized. Among the respondents strongly agree that social media gives a competitive advantage over competitors who still use traditional techniques, social media promotion helps to develop relationships with potential customers and social media promotion helps to reach the right prospects and raise brand awareness. Social media promotion has a significant relationship with the tourist destinations in the municipality of San Rafael, Bulacan.

### **RECOMMENDATIONS**

Based on the conclusions drawn, the researcher recommends that:

Tourism business owners may utilize Facebook as their platform for promoting their tourist destinations, and future researchers may also conduct a study on how Facebook significantly affects the tourist destinations in the municipality of San Rafael in Bulacan. Tourism business owners may consider posting their promotions in their tourist destinations twice a week and posting them between 12:01 p.m. and 6:00 p.m., and future researchers may also conduct a study on how effective it is to post promotions twice a week and the time between 12:01 p.m. and 6:00 p.m. When posting a promotion on social media, owners of tourism-related businesses may consider using video-based content because it always attracts tourists who were looking for a destination on social

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media. The owned nature of posts is the aspect that is utilized and observed the most; business owners may always use it to boost the promotion of their tourism destination. A tourism business owner may value the actual tourist. since natural promotion helps to promote tourist destinations. Additionally, they can utilize Facebook as their platform to boost the tourist destination.

Tourist business owners may consider engaging more in social media promotion since tourists rely on social media platforms to select tourist destinations, make tourist destinations known, and increase the number of people visiting the tourist destinations. Tourism business owners may consider social media as a promoting tool. It will help them to increase their sales, since it can provide a competitive advantage over competitors, develop a relationship with potential customers and help to reach the right prospects and raise brand awareness.

Tourism business owners may utilize social media promotion, specifically Facebook, as their platform to positively affect their tourist destinations, and future researchers may also conduct a study on how Facebook significantly affects the tourist destinations in their chosen place or even the municipality of San Rafael in Bulacan.

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## Social Media as a Tool for Promoting Tourist Destinations in the Municipality of San Rafael, Bulacan, Philippines

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## Application of the Altman Z-Score Model in Assessing the Financial Health of Garment Manufacturing Enterprises Listed on the Vietnam Stock Market



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**ABSTRACT:** The article has provided the content and function of the Z-score model in predicting the possibility of bankruptcy through the actual financial situation of the enterprise. The study uses two research methods, namely the analytical method and the meta-analytic method. Through the methodology, the team obtained an overview of the study and identified gaps in which to conduct the research. Next, the research team selected a sample of 9 garment manufacturing companies listed on the Vietnamese stock market. Combining the collection of secondary data from financial statements and the theory of the Z-score model, we have a basis to evaluate the financial situation of these 9 enterprises in 2022. 4 enterprises having in good financial condition, 4 enterprises with difficult financial situations and 1 enterprise with financial distress consistent with the actual situation of all 9 enterprises. The analysis results also show that the Z-score model is reliable and quite effective in assessing financial health and predicting the bankruptcy of enterprises.

**KEYWORDS:** Bankruptcy, Financial health, Manufacturing enterprises, Vietnam, Z-score model

### 1. INTRODUCTION

Corporate financial health is a major concern of shareholders, employees, auditors and external parties such as investors, banks and business partners. Each subject will base on its financial situation to make its decision. For example, investors and shareholders will decide to buy and hold more stocks and bonds if the financial situation of the business is good and vice versa. With business partners, they can continue cooperation or stop cooperation if there are signs of financial difficulties. Thus, in order to make an accurate decision, the above subjects need to have a good understanding of the financial market and need technical tools to assist them in accurately assessing the financial health of the business that is considering investment, cooperation, and loans. Altman's Z-score model is a quantitative tool with five coefficients: working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value market of equity to book value of total liabilities and the ratio of net sales to total assets. This model is considered by experts in financial markets and researchers as one of the best models for predicting the financial situation and bankruptcy of a business. Simple to use with data that can be easily collected from financial statements, so this tool is applied by many audiences. With the goal of studying the applicability of the Z-Score Model in assessing the financial health of garment manufacturing enterprises listed on the Vietnam stock market. The research team analyzes and evaluates the effectiveness of this model on actual data and considers the appropriateness of the model when applied in a developing country like Vietnam.

### 2. LITERATURE REVIEW

#### 2.1. Model Z-score

Developed in 1968 by Edward I. Altman, the Z formula is used to predict a firm's product growth over two years. The Z-score model relies on multiple balance sheet values and the value of a business's earnings to assess the financial health of a business. When businesses fall into financial distress, it will seriously affect investors, shareholders and lenders. Through the combination of online calculation of 4 or 5 Common Business Variable Ratio calculated by the coefficient, Altman (1968) formulated for the first time the Z-score model formula which has the following format:

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.64X4 + 0.999X5 \text{ (p.589-609)}$$

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Let's take a look at how the 5 indicators in the Z-score model are identified and calculated by Altman (1968).

X1: The ratio of working capital to total assets. The measure of liquid assets is related to the size of the company (pages 589–609).

$X1 = \text{Working capital} / \text{Total assets}$

X2: Ratio of retained earnings to total assets. The profitability measure reflects a company's age and earning power (pages 589–609).

$X2 = \text{Retained earnings} / \text{Total assets}$

X3: The ratio of earnings before interest and taxes to total assets. Measure performance outside of taxes and leverage factors. It recognizes operating income as important to long-term viability (pp.589–609).

$X3 = \text{EBIT} / \text{Total Assets}$

X4: Ratio of market value of equity to book value of total liabilities. Adding market size can show stock price movements as possible red flags (pages 589–609).

$X4 = \text{Market Value of Total Equity} / \text{Book Value of Total Liabilities}$

X5: Ratio of sales to total assets (p.589–609).

$X5 = \text{Revenue} / \text{Total Assets}$

According to Altman (1968), after calculating the Z score, we will classify enterprises into three groups. Group 1 is a group of businesses with healthy finances, eligible for ratings in the safe zone. Group 1 needs to meet  $Z > 2.99$ . Group 2 is a group of businesses with weak financial performance, classified in the gray area as the warning area and at risk of product development. Group 2 includes enterprises with Z scores between 1.81 and 2.99,  $1.81 < Z < 2.99$ . Group 3 is a group of businesses with financial distress that are classified as dangerous areas, the risk of product discovery is very high. Group 3 includes enterprises with  $Z < 1.81$  (pp.589-609). With the combination of important figures and 5 financial indicators that are easily calculated through data collected on corporate financial statements, the Z-score model is widely applied in most countries around the world. However, we should note that it is a model built by Altman in 1986 using research samples, research data and performing analytical methods for manufacturing enterprises. Therefore, this original Z-score model only applies to studies conducted in listed manufacturing enterprises and is not suitable for enterprises in other regions.

In addition to the model built in 1968, Altman also built two variants of the Z-score model suitable for businesses other than the listed manufacturing sector. Let's explore the first variant of the Z-score model, the Z' model. The Z' model was developed by Altman & Hotchkiss (2006) in 2006. The Z'-score model is used by firms in the non-manufacturing group in the emerging market. The goal of the Z'-score is to rate the bond quality. The model of Variant Z' is presented as follows:

$Z' = 3.25 + 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$

The calculation method of 4 indicators in the Z'-score model is similar to the Z-score model. Enterprises evaluated according to the Z'-score model are classified into 3 groups. Group 1 is a safe enterprise, not in danger of bankruptcy,  $Z' > 5.85$ . Group 2 are enterprises that are at risk of bankruptcy and are in the warning zone if  $4.35 < Z < 5.85$ . The last group is the group of enterprises with  $Z < 4.35$ , this group of enterprises has a very high risk of bankruptcy because the financial situation is exhausted (Altman & Hotchkiss, 2006).

Finally, we learn that the second variant of the Z-score is the Z''-score model, which applies to manufacturing enterprises that are not listed on the stock market and enterprises belonging to the non-manufacturing group such as enterprises that provide financial, educational, or real estate services.

The Z''-score model of Altman et al (2017) has the following form:

$Z'' = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$  (pp.131–171)

The calculation of 5 indicators in the Z''-score model is similar to the Z-score model. With the Z''-score model, enterprises are also classified into three groups. Group 1 includes enterprises located in the safe zone with Z'' score  $> 2.66$ . The second group includes businesses that are at risk of bankruptcy and are classified in the warning zone with  $1.1 < Z'' < 2.6$ . The last group includes enterprises with high risk, located in the red zone and at high risk of bankruptcy,  $Z'' < 1.1$  (Altman et al, 2017, pp131-171).

Many researchers have made the mistake of applying the 1968 Z-score model in their study to predict corporate bankruptcy for all manufacturing and non-manufacturing sectors. However, if the Z-score variant is not applied correctly, it will have serious consequences and errors in the assessment of the financial quality of the business. In this study, we assess the financial health of garment manufacturing companies listed on the Vietnamese stock market. So using the Z-score 1968 model is a perfect fit.

### 2.2. Overview

Anjum's study (2012) on models for predicting corporate bankruptcy and explores the focus on Altman's Z-score model (pp.212-219). The author identifies businesses that operate and want to achieve the highest profit target. However, is the financial position

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of the enterprise between the published figures and the actual figures consistent? The author believes that financial ratios should be used to assess the financial honesty of a business built by many different authors. In Anjum's research, it was shown that Altman's Z-score model development can predict the probability of bankruptcy 2 to 3 years in advance. The results of the study clearly show Altman's research on predicting corporate bankruptcy. Along with that, the author also considers that the Z-score model is suitable to be applied in predicting the bankruptcy of enterprises in the fields of the modern economy and this model can predict the recession and bankruptcy before 1 to 3 years (Anjum, 2012, pp212-219).

Research by Panigrahi (2019) on the value of the z-score model in predicting the financial difficulties of pharmaceutical companies group (pp.65-73). The author believes that predicting the financial decline of enterprises is a concern of many businesses after the 2008 crisis. The difficult financial situation greatly affects the operation of enterprises and enterprises. It is difficult for businesses to access loans and enter contracts with partner businesses. The author emphasizes that empirical research predicting the bankruptcy of enterprises is very necessary. Early detection of financial distress helps businesses find ways to overcome and avoid bankruptcy. Along with that, the author applies the z-score model to assess the financial difficulties of some pharmaceutical companies during the period from 2012 to 2017. Research data is secondary data from financial reports enterprise itself. The analysis results show that the average Z score of the selected enterprises is 5.9. This result has helped the author to assess the financial status of pharmaceutical enterprises in good condition (Panigrahi, 2019, pp.65-73).

Research by Grice & Ingram (2001) on testing the generality of the Z-score model (pp.53-61). With the aim of testing the bankruptcy predictability of the Z-score model at banks listed on the Indonesian stock exchange. Secondary data is taken from the financial statements of 29 banks for the period 2011-2013. Applying Altman's Z-score analysis technique with the evaluation criteria of 2.99-point oscillation. Calculation results and comparison with Z scores at 29 banks in 2011 show that there are 14 banks facing bankruptcy, 13 banks with a good financial situation with Z score higher than 2, 99 and 2 banks are in the gray zone, their financial status is weak. In 2012, the results changed slightly, leaving only 10 banks with healthy financial status, 14 banks with poor financial status and 5 banks in the gray area. In the last year of the study, the number of financially healthy banks was 11.4 in the gray area and 14 in bankruptcy (Grice & Ingram, 2001, pp.53-61).

Research by Andriawan & Salean (2016) on Altman's Z-score analysis method (pp.67-82). With the aim of studying the efficiency of bankruptcy prediction and testing the influence of independent variables on the value of financial ratios in Altman's Z-score model. The author used secondary data from the financial statements of 6 companies in the pharmaceutical sector listed on the stock exchange of Indonesia. Through the linear regression method, the research results of Andriawan & Salean (2016) have shown that in the period 2009 to 2013, most of the research companies have good financial status. stock price coefficient is 52% (pp.67-82). Thus, this study also appreciates the effectiveness of Altman's bankruptcy predictor.

Research by Altman et al. (2014) on assessing troubled businesses and their likelihood of bankruptcy through the Z-score model (1-48). Continuing their studies, Altman et al. (2014) conducted a study on a large sample of data from 32 European countries and 3 non-European countries. Except for China and the United States, the remaining companies are in the industrial sector, so the research team applies the Z-score model developed by Altman in 1983 to manufacturing and non-manufacturing companies export. Based on the theoretical basis from 34 high-quality scientific articles of prestigious journals from 2000 to the time of research and the theory of the Z-score model in 1983. The research results show that the score model Z performed quite well when assessing the financial situation in many countries with an accuracy of about 75%. Although there are many other studies that suggest that Z-score does not achieve the expected predictive effect, this study has shown that we need to incorporate some additional variables that will help increase the accuracy of the prediction higher (pp1-48).

Research by Mohammed (2016) on using the Z-score model to predict the probability of bankruptcy at Raysut SAOG and its subsidiary in Oman (70-80). From the perspective that a stable financial situation is the top concern of businesses. The measurement of corporate financial status has many technical tools, but the author believes that Altman's Z-score model has been proven to ensure high reliability. Therefore, with secondary research data from the financial statements of the cement business Raysut SAOG and its subsidiaries in Oman and the evaluation method of Altman, the author gives the results of data analysis as follows: For 8 years (from 2007 to 2014) shows that Raysut SAOG and its subsidiaries are in good financial condition and Z-score is always higher than 2.99. Identify the benefits of the Z-score model for managers in supporting financial decision-making, changing operating policies, or helping investors avoid risks when investing in businesses with unhealthy finances.

Research on bankruptcy prediction by Li (2012) for the period from 2008 to 2011 shows the superiority and efficiency of the Z-score model (31-41). The author used three models to predict the probability of bankruptcy of enterprises in the United States in the period 2008-2011. Of the three models, which are the original Z-score model, the re-estimated Z-score model, and the re-estimated model with additional variables, all have the highest predictability results for the criterion "Market value" market of

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equity/total debt". The author also identifies the superiority of the Z-score model compared to other technical models based on accounting data. The author argues that the change in total assets has almost no effect and is not a decisive factor in predicting bankruptcy. At the same time, the author finds that all models can make mistakes and predict the bankruptcy of enterprises (Li, 2012, pp31-41).

From the research overview, we can see that assessing the financial status of enterprises is considered by many authors to be very important. The application of Altman's bankruptcy prediction model in research in Vietnam is quite limited. Therefore, our team must conduct research on the content and application of the Z-Score model in assessing the financial health of garment manufacturing enterprises listed on the Vietnamese stock market and make sense.

### 3. METHODS

**Methodology:** The research team used the methodology to conduct research on the literature on the origin, construction process, role and applicability, and effectiveness of Altman's Z-score model. Along with that, the research team searched the internet for published articles in the form of research papers, reports, and books on the content of the Z-score model. We use some case study documents on the Z-score model to include in our research in this article.

**Methods of analysis and synthesis:** The research team uses secondary data which is the financial statements of garment manufacturing enterprises listed on the Vietnam stock market for analysis. From the analysis results of 5 indicators of the Z-score model, the research team summarizes them in two tables and presents them in the article. Based on the results of analysis and synthesis, the research team has identified businesses at risk of bankruptcy and businesses in the safe group.

### 4. EXPERIMENTAL STUDY IN GARMENT MANUFACTURING ENTERPRISES LISTED ON THE VIETNAM STOCK MARKET

Vietnam is a country with production capacity in the garment, knitting and export industries. The number of enterprises operating in the garment manufacturing industry is very large and there are many high-value order contracts from major economies around the world. Although Vietnam has many enterprises participating in the garment production market, the number of garment and knitting enterprises listed on the stock market is still limited. The study collects secondary data from the financial statements of 9 garment manufacturing companies listed on the stock exchange in 2022. Results of analysis of 5 Z-score model indexes of enterprises. The study is shown in Table 1.

**Table 1: Analysis results of 5 indicators of the Z-score model**

Company	Stocks	X1	X2	X3	X4	X5
Thanh Cong Textile Garment Investment Trading Joint Stock company	TCM	0.372	0.311	0.166	2.954	1.887
Viet Thang Corporation	TVT	0.128	0.156	0.059	0.363	1.074
Garmex Saigon Corporation	GMC	0.543	-0.002	-0.155	3.610	0.532
DamSan Joint Stock Company	ADS	-1.767	0.147	0.192	0.490	2.497
Everpia JSC	EVE	0.510	0.286	0.084	1.702	0.701
Mirae JSC	KMR	0.417	0.043	0.037	0.803	0.646
Song Hong Garment Joint Stock Company	MSH	0.326	0.204	0.144	1.671	1.676
Binh Thanh Import - Export Production & Trade JSC	GIL	0.842	0.274	0.120	1.246	0.794
TNG Investment and Trading JSC	TNG	-0.060	0.047	0.098	0.537	1.280

*Source: Analysis of results from the company's financial statements*

From the analysis results in Table 1, we see that the ratio of working capital to total assets of DamSan Joint Stock Company and TNG Investment and Trading JSC has a negative sign. This means that the two businesses are experiencing financial distress and difficulty in paying their short-term debts. The index of retained earnings over total assets of Garmex Saigon Corporation is showing a negative sign, which shows that the business is operating at a loss. In addition, a negative X2 index means that Garmex Saigon Corporation is taking on a lot of debt to finance its capital needs instead of using retained earnings. In the X3 index, Garmex Saigon Corporation has another negative indicator, and it shows that the business is losing profitability on assets. Through Table 1, we preliminarily evaluate a few indicators with bad signs. There are 4 businesses in this situation. To evaluate the overall through the Z-score model, we follow Table 2 - the results of business classification based on the Z-score.

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**Table 2: Enterprise classification results based on Z-score**

Stocks	Z-score	Review Z-score	Business classification
TCM	5.205	$Z > 2.99$	"Safe" area
TVT	1.871	$1.81 < Z < 2.99$	"Gray" area
GMC	2.979	$1.81 < Z < 2.99$	"Gray" area
ADS	1.527	$Z < 1.81$	"suffering" area
EVE	3.077	$Z > 2.99$	"Safe" area
KMR	1.842	$1.81 < Z < 2.99$	"Gray" area
MSH	3.895	$Z > 2.99$	"Safe" area
GIL	3.382	$Z > 2.99$	"Safe" area
TNG	1.940	$1.81 < Z < 2.99$	"Gray" area

*Source: Author's data analysis results*

Looking at Table 2, we see that all 4 enterprises with bad indicators are in the danger zone of bankruptcy. In particular, Garmex Saigon Corporation appeared in two consecutive negative indexes, but the negative number was not too large, so the calculation results on the Z-score model are that this enterprise belongs to the "Gray" area. It means that Garmex Saigon Corporation is at risk of bankruptcy but not high. In addition, for two enterprises with negative indexes, DamSan Joint Stock Company and TNG Investment and Trading JSC, respectively, the results are  $Z < 1.81$  and  $1.81 < Z < 2.99$ , respectively. Thus, these two businesses have a very high risk of bankruptcy and will face great difficulties in the time after 2022.

### 5. DISCUSSION

The results of the Z-score model analysis showed that out of 9 enterprises included in the study with 2022 data, 4 enterprises have good financial status and are classified as safe, currently not at risk of bankruptcy produce. The group of enterprises with difficult financial situations and classified in the "gray" area includes 4 enterprises. businesses located in this gray zone are at risk of bankruptcy. However, if enterprises recognize early signs and have an adjustment plan in management and production, these enterprises will be able to recover. Finally, there is a group of businesses with a high risk of bankruptcy with poor financial status. Out of the nine enterprises studied, 1 enterprise is in the danger zone, which means that it is very difficult to avoid the risk of bankruptcy. In summary, risk assessment models and financial status are very effective in identifying businesses at risk of bankruptcy. From the research results and considering the actual situation, we believe that the Z-score model is a good and effective model for assessing the financial health of enterprises in Vietnam.

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## Proposing a Research Model of Factors Affecting Compliance with the Law on Social Insurance of Non-State Enterprises in Vietnam



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**ABSTRACT:** In this study, the authors proposed a model to study the factors affecting compliance with the law on social insurance of non-state enterprises in Vietnam. The study uses a combination of document review methods, traditional statistical and analytical methods for secondary sources of agencies and organizations, and qualitative research methods (in-depth interviews with research subjects); the research team has screened and selected the main factors suitable to the research context, proposed a research model of factors affecting the level of compliance with the law on social insurance of non-state enterprises in Vietnam. The research model is built including six independent variables (the possibility of being inspected and examined by social insurance, penalties for violations of social insurance, social influence, corporate finance, corporate reputation, social insurance policies, and procedures) and a dependent variable (compliance with the law on social insurance of non-state enterprises). The results of this study are the basis and the premise for the next formal quantitative studies.

**KEYWORDS:** model, influencing factors, legal compliance, social insurance, non-state enterprises.

### 1. INTRODUCTION

In Vietnam, the social insurance policy plays a particularly important role in ensuring the life of workers and ensuring social security. Social insurance policy is the leading type of benefit applied most at enterprises and this is also one of the benefits that employees are interested in looking for when applying for jobs. Implementing the law on social insurance is an effective mechanism to make labor relations harmonious and stable, protect the legitimate rights and interests of employees, and ensure the interests of enterprises. However, in the process of implementing the law on social insurance, many subjects participating in social insurance (including employees and businesses) have a low sense of compliance with the law on social insurance and compliance with the law on payment of social insurance is still limited (evading payment, late payment of social insurance), especially for non-state enterprises. Non-state enterprises have limited coverage of social insurance, and the level of compliance with the law on social insurance is still low. Data from the General Statistics Office of Vietnam and the Vietnam Social Security show that, although non-state enterprises account for a very high proportion of the total number of enterprises in the country (in 2020, this rate is more than 96%) but the rate of participation in social insurance for employees of non-state enterprises is still low (in 2020, the ratio of employees participating in social insurance compared to the workforce working in non-state enterprises is only about 60%); the amount of contributions to the social insurance fund is still limited (in 2021, the amount of social insurance contributions of non-state enterprises is 83,199,573 million VND, equivalent to about 31% of the total amount of compulsory social insurance); the situation of late payment of social insurance is common and the amount of late payment of social insurance contributions of non-state enterprises always accounts for the highest proportion of total social insurance debts (in 2021, the amount of late payment of social insurance contributions of state enterprises is 8,106.7 billion VND, accounting for rate of more than 79% of the total amount of late payment of social insurance). This situation causes difficulties for the management of the social insurance agency, limits the revenue to the social insurance fund, and affects the settlement of social insurance benefits for employees working at enterprises.

From the results of the overview study associated with the research context in Vietnam, the authors found that the research on the topic of compliance with the law on social insurance of enterprises in Vietnam so far has not been much, especially studies on factors affecting compliance with the law on social insurance of non-state enterprises. In the context of the current Vietnamese social insurance system, ensuring compliance with the law on social insurance (especially for non-state enterprises) is always considered a topical and important issue to ensure the right to social security legitimate benefits for the subjects participating in social insurance, ensuring the purpose of social insurance is realized in practice and ensuring the balance of the social insurance



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fund. Therefore, research on the issue of compliance with the law on social insurance of non-state enterprises in Vietnam is really necessary. This study uses a combination of literature review methods, traditional statistical and analytical methods for secondary sources, qualitative analysis methods with economists' opinions and in-depth interview methods. The authors carry out the study to build a research model of factors affecting the level of compliance with the law on social insurance of non-state enterprises in Vietnam. The research results are the premise to carry out quantitative studies to determine the level of influence, and the impact direction of the factors on the level of compliance with the law on social insurance. From there, there is more empirical evidence to explain the compliance/non-compliance with the law on social insurance of the subjects participating in social insurance; at the same time, as a basis to propose suggestions/implementations to help managers and policymakers of social insurance come up with appropriate policy adjustment measures to enhance compliance with the law on social insurance.

### **2. THEORETICAL BASIS**

#### **2.1. Comply with the law on social insurance**

First of all, legal compliance is considered in terms of a form of law enforcement. According to Doan, N. M. et al (2020), law implementation is an activity to implement the provisions of the law, make them come to life, and become the actual lawful behavior of the owner's legal body. This view shows that the implementation of the law can be an individual's behavior, it can also be an activity of state agencies, and social organizations... to make the law be enforced in life. Thereby, it can be understood that organizations and individuals are subjects of the law when encountering situations that the law has mentioned in the hypothetical part, the subjects must act or not act on their own by the provisions of the law. The process of law enforcement is conducted through different forms and law enforcement includes forms: law compliance, law enforcement, law use and law application. Considering this aspect, law compliance is one of four forms of law enforcement, in which agencies, organizations and individuals do not conduct activities prohibited by law. This division is only relative and has main theoretical significance because the previously mentioned forms of law enforcement do not exist in practice alone, but are often carried out simultaneously. This form of law enforcement includes other forms of law enforcement when the subjects exercise their rights and perform their obligations in each legal relationship. From a common language perspective, the concept of legal compliance is often used without distinction from law enforcement. Considering law compliance with the meaning of law implementation, law observance is an activity to bring law to life, turning legal regulations into acts of subjects. Within the scope of this research, the authors use the term "law compliance" with the connotation of "law enforcement", whereby, compliance with the law on social insurance is understood as an activity aimed at bringing the law on social insurance into life, making the provisions of the law on social insurance become actual legal acts of the legal subject of social insurance. In the social insurance relationship, the parties (members, subjects) participating in the implementation of the law on social insurance include: the party implementing social insurance, the party participating in social insurance, and the party receiving social insurance. Forms of showing compliance with the law on social insurance include:

Firstly, the subject implementing the law on social insurance refrains from performing the acts prohibited by the law on social insurance. Currently, in Vietnam, prohibited acts are specified in the Law on Social Insurance No. 58/2014/QH13, including the following acts: Evading social insurance contributions; late payment of social insurance premiums; misappropriating social insurance premiums/ benefits; fraud or falsification of records in the implementation of social insurance; Illegally using the social insurance fund; obstructing, causing difficulties or causing damage to the lawful and legitimate rights and interests of employees and employers; illegally accessing or exploiting the database on social insurance; false statements; providing inaccurate information and data on social insurance.

Second, comply with the law on social insurance. Obeying the law requires the subject to carry out legal responsibilities in an active manner. Here the subject needs to perform specific actions, not just stop at not doing what the law forbids. Law observance shows the self-discipline and activeness of the law-executing subject, not merely a passive behavior. Since then, compliance with the law on social insurance is understood as the fact that the legal subjects of social insurance perform their obligations and responsibilities according to the provisions of the law on social insurance. Subjects complying with the law on social insurance can be employees, employers, social insurance organizations, trade unions, employers' representative organizations, and other entities. In the scope of this study, the subject of compliance with the law on social insurance is non-state enterprises in Vietnam. Non-state-owned enterprises include domestic-owned enterprises whose capital is privately owned by a person or group of people or state-owned but account for 50% or less of the charter capital (The White Book on Vietnamese Enterprises 2022, General Statistics Office). Non-state enterprises include: Private enterprises; Partnerships; Private Limited Companies; Limited liability companies with 50% or less state capital; Joint stock companies without state capital; Joint stock companies with a state capital of 50% or less.

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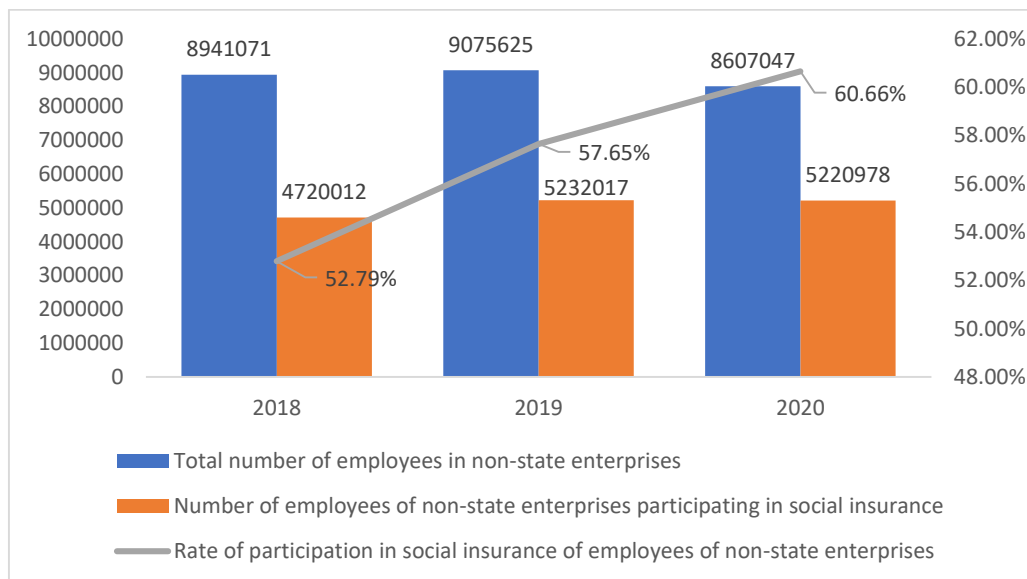
### **2.2. Factors affecting compliance with the law on social insurance**

Research results from classical theories explaining legal compliance/non-compliance behaviors and some recent experimental research results have mentioned the factors that affect behavior compliance/non-compliance with social insurance laws such as: Ability to be inspected and examined, sanctions, and handling of violations; these factors have a positive impact on the level of compliance with the law on social insurance of enterprises (Maitra et al., 2007). This is consistent with the thesis of the deterrence theory/economic deterrence model mentioned earlier, the principles of which come from Becker's (1968) study of illegal behavior analysis by using an economic approach. Deterrence theory holds that people will choose to obey or break the law after calculating the benefits and consequences of their actions. This is the same point of view expressed in popular psychology behavior theory; Braithwaite, J. (1985) argues that the popular psychology of human behavior is to choose action when knowing the benefits and consequences associated with that action. Research by Koumarios, E., Kapsalis, A., & Avgeris, N. (2019) also shows that employers take advantage of the precariousness of employees to carry out non-compliance behaviors to maximize their profits, while workers accept or collude with non-compliance as survival tactic in a highly competitive environment. Deterrence theory emphasizes sanctions as a key determinant in combating non-compliance issues. Along the same lines, Prospect Theory (proposed by Daniel Kahneman and Amos Tversky in 1979, then won the Nobel Prize in Economics in 2002) argues that sanctions, including penalties and checks, are the best way to deal with non-compliance. Law compliance behavior is also strongly influenced by the factor of Social norms/social influence, which has been confirmed in many studies (Posner, R. A., 1997; Scott, R. E., 2000; Licht, A. N., 2008; ...). The theory of rational action by Ajzen and Fishbein (1975) and Ajzen's Theory of Planned Behavior (1991) are widely used in explaining law-abiding behavior in many fields. Both of these theories assume that the social norm/subjective norm is the perception of social influence/pressure to perform or not to perform a person's behavior; in other words, the subjective norm is defined as a person's perception of what most of the people important to this individual think he/she should perform the behavior. In addition, there are many other factors related to the behavior of compliance / non-compliance with the social insurance law that have been mentioned in a number of studies such as effective policy formulation, level playing field, control costs, company reputation, employee recruitment and retention, company reputation, employee recruitment and retention, firm characteristics including risk factors, workforce skill composition, and ownership pattern (Nyland et al., 2011); historical imprint of the enterprise, the founding ownership structure of the enterprise, major institutional changes (Han, Y., Zheng, E., & Xu, M., 2014); control mechanism (Özsuca, Ş. T., & Gökbayrak, Ş., 2012); the presence of a trade union in a company is positively related to the compliance level of that company, the political connections of the business owner (to some extent) negatively affects the level of compliance, the use of temporary workers that significantly reduce compliance, the economic strength of an individual firm, and the importance of the private sector in a province are all nonlinearly related calculated with compliance (Chen, Y., & Sun, Y., 2016).

### **3. RESEARCH CONTEXT**

In Vietnam, in recent years, the non-state enterprise economic sector has grown rapidly in both quantity and quality. According to the survey data of the Statistics industry as of December 31, 2020, the whole country has 684,260 operating enterprises with production and business results with a total number of employees working at 14,702,546 people, of which the number of non-state enterprises is 660,055 enterprises (accounting for 96.5% of enterprises nationwide) attracting 8,607,047 employees (accounting for 58.6% of the total number of employees working in the enterprise sector). It can be seen that non-state enterprises in Vietnam account for the majority, creating jobs for a large labor force. With the spirit of self-reliance, dynamism and creativity, non-state enterprises easily adapt to the frequent changes in the market, actively contribute to the economy and increasingly assert their indispensable role their lack in the development of the country. However, in reality, non-state enterprises have limited coverage of social insurance, and the level of compliance with the law on social insurance is still low. Data from the General Statistics Office and Vietnam Social Insurance show that, although non-state enterprises account for a very high proportion of the total number of enterprises in the country, the rate of participation in social insurance for employees is still low. Figure 1 shows the proportion of employees of non-state enterprises participating in social insurance compared to the labor force working in this enterprise sector, although there is an increasing trend over the years, the number of subjects participating in social insurance is still limited. In 2020, the proportion of employees participating in social insurance compared to the workforce working in non-state enterprises is only about 60%.

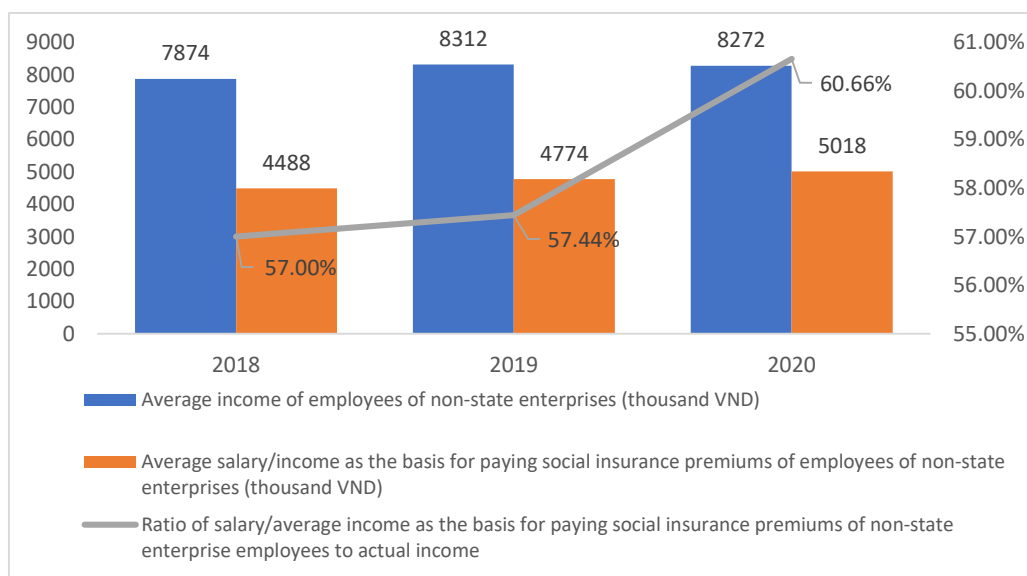
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**Figure 1. The situation of employees participating in social insurance of non-state enterprises**

**Source:** The author's team calculated from the data of the General Statistics Office and Social Insurance of Vietnam

On the other hand, the salary/income registered for social insurance contributions of employees in non-state enterprises is much lower than the actual income of employees (Figure 2). In 2020, the average salary used as a basis for social insurance contributions of non-state enterprise employees is only approximately 60% of the actual salary.



**Figure 2. Salary/average income as the basis for paying social insurance premiums of employees of non-state enterprises**

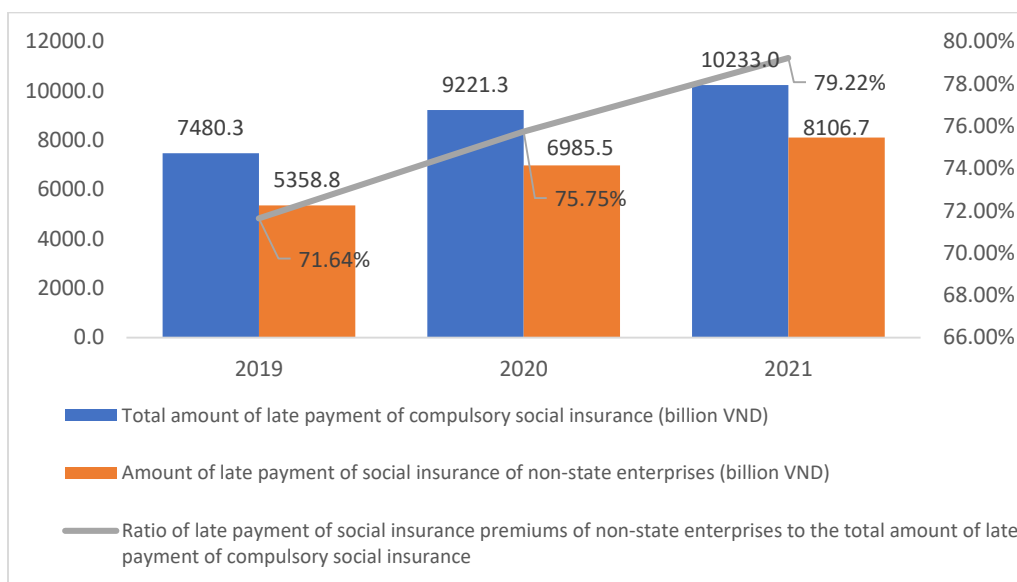
**Source:** The author's team calculated from the data of the General Statistics Office and Social Insurance of Vietnam

The proportion of employees participating in social insurance and the salary/income registered for social insurance payment of employees in non-state enterprises are low, which significantly affects the revenue of the social insurance fund; and in terms of economic benefits, this is the main revenue loss of the social insurance fund. In 2021, the contribution rate of non-state enterprises to the compulsory social insurance fund will account for just over 31% (total collection of compulsory social insurance is VND 263,474,581 million VND; the amount of social insurance contributions of non-state enterprises is 83,199,573 million VND). It can be seen that although the number of non-state enterprises accounts for a very high proportion of the total number of enterprises in the country, the contribution rate to the social insurance fund is not commensurate. Besides, according to data reported by Vietnam Social Security, the situation of debt payment and late payment of social insurance contributions in the enterprise sector is quite common, mainly concentrated in non-state enterprises (Figure 3). In 2021, the late payment of social insurance by state

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enterprises is 8,106.7 billion VND, accounting for more than 79% of the total amount of late payment of compulsory social insurance (10,233 billion VND).

Thus, it can be seen that the state of non-state enterprises in Vietnam does not fully participate in social insurance, the level of compliance with the law on social insurance of these enterprises is still low. It is relatively difficult to fully and properly implement the social insurance law in non-state enterprises today. To ensure the rights of employees, it is necessary to strengthen compliance with the law on the social insurance of enterprises, especially to improve compliance with the law on social insurance of non-state enterprises.



**Figure 3. Late payment of social insurance premiums of non-state enterprises**

Source: Author's team calculated from data of Vietnam Social Insurance

### 4. METHODS

To systematize the theoretical basis of the research topic, the authors used the method of reviewing previous documents, and searching for academic documents in ProQuest, ScienceDirect online databases and Google Scholar. At the same time, the authors use traditional statistical and analytical methods for secondary sources of documents of agencies and organizations such as: The White Book on Vietnamese Enterprises of the General Statistics Office, Report of Vietnam Social Insurance, and other references related to the research topic. From the results of the overview research associated with the research context in Vietnam, the author finds that the research on the issue of compliance with the law on social insurance is a topical topic, especially the quantitative studies aimed at determine the influence of factors affecting the level of compliance with the law on social insurance of subjects participating in social insurance. In the current context of Vietnam's social insurance system, ensuring compliance with the law on social insurance (especially for non-state enterprises) is always considered an important issue to ensure the interests of benefit from social insurance, ensure that the purpose of social insurance is implemented in practice and ensure the balance of the social insurance fund. Therefore, the authors continue to use qualitative research methods to test and screen independent variables affecting the level of social insurance compliance of non-state enterprises, the preliminary determination of the relationship between variables in the research model, adjusting and supplementing the scale of factors affecting the compliance with the law on social insurance of non-state enterprises in Vietnam on the basis of inheritance previous studies.

The qualitative research method used by the research team is the in-depth interview method. This method has many advantages such as clarifying the nature of the problem, a deep understanding of the behavioral motivations of the research subjects. This method is quite commonly used in qualitative research methods; is conducted to explore and discover how research subjects act, do, think or feel about a certain issue. The in-depth interview method is suitable for sensitive research issues, this method helps to avoid possible social pressure on research subjects. The issue of compliance with the law on social insurance, in some respects, is also rather sensitive, and sometimes, research subjects may not be comfortable sharing their true thoughts if exist social pressures (if any) or do not gain certain trust for interviewers. To carry out qualitative research by in-depth interview method, the authors have built a guide to in-depth interview questions to identify factors and manifestations of factors affecting

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legal compliance and social insurance of non-state enterprises in Vietnam. This process is aimed at ensuring the quality of the research results and achieving the objective of the in-depth interview.

Based on the list of non-state enterprises participating in social insurance provided by the social insurance agency, applying the target sampling method, the authors conducted in-depth interviews with 30 representatives of employers belonging to non-state enterprises in Hanoi, Hung Yen and Bac Ninh. Interviews last about 30 to 60 minutes with pre-prepared content; conducted in the office, coffee shop or private home. Then, in order to adjust the scale used in the research accordingly, the research team collected expert opinions from 02 subjects who were leaders of the social insurance unit and 02 experts who were researchers on social insurance.

**Table 1. Descriptive statistics of study subjects**

<i>Characteristic</i>	<i>Groups</i>	<i>Number of people</i>	<i>Total</i>	<i>Percentage (%)</i>
Sex	Male	18	30	60.00%
	Female	12		40.00%
Age	Under 30 years old	05	30	16.67%
	From 30 to 39 years old	11		36.67%
	From 40 to 49 years old	08		26.67%
	From 50 years old	06		20.00%
Education level	High school	0	30	0.00%
	College	24		80.00%
	After university	06		20.00%
Current position/position in the company	Business Leadership Board	08	30	26.67%
	Human resource management in the enterprise	11		36.67%
	Corporate accounting	11		36.67%
Number of years of business operation	Less than 5 years	12	30	40.00%
	From 5 to less than 10 years	12		40.00%
	From 10 years or more	06		20.00%
The main business area of the enterprise	Agriculture, forestry, and fisheries	02	30	6.67%
	Industry and construction	09		30.00%
	Service	19		63.33%

**Source:** Data processing results of the author's team

## 5. RESEARCH MODELS

After identifying the research gap, with the initial databases and interpretations, combining the qualitative research results and the general research results associated with the research context, the authors propose a model of research on factors affecting the degree of compliance with the law on social insurance of non-state enterprises in Vietnam includes 6 independent variables "the possibility of being inspected and examined by social insurance", "penalties for violations of social insurance", "social influence", "corporate finance", "corporate reputation", "social insurance policies and procedures"; and the dependent variable "compliance with the law on social insurance of non-state enterprises". The factor scales were built based on inheritance from previous studies and adjusted based on suggestions of qualitative research results. The proposed research model is shown in Figure 4 with the following research hypotheses:

H1: The possibility of being inspected and examined by social insurance has a positive effect on compliance with the law on social insurance of non-state enterprises.

H2: Penalties for violations of social insurance have a positive effect on compliance with the law on social insurance of non-state enterprises.

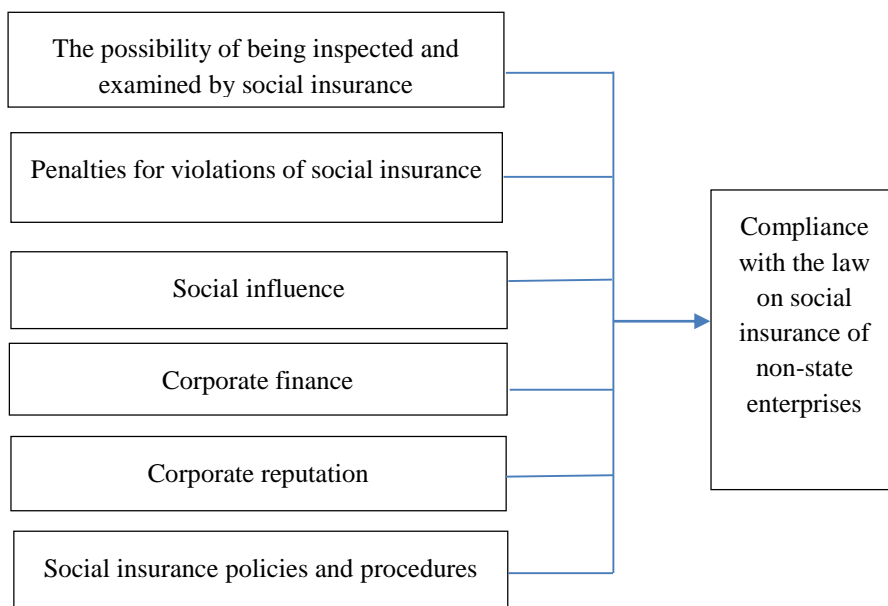
H3: Social influence has a positive effect on non-state enterprises' compliance with the law on social insurance.

H4: Corporate finance has a positive effect on non-state enterprises' compliance with the law on social insurance.

H5: Corporate reputation has a positive effect on non-state enterprises' compliance with the law on social insurance.

H6: Social insurance policies and procedures have a positive influence on non-state enterprises' compliance with the law on social insurance.

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**Figure 4. Proposed research model**

Source: Suggested by the authors

The possibility of being inspected and checked by social insurance: is the fact that the enterprise is aware of the possibility that the social insurance management agency will detect the enterprise's non-compliance with the law on social insurance. This factor includes two observed variables: "How do you think the possibility of enterprises being checked when they deliberately cheat to pay social insurance contributions" and "If it is checked, how do you think the possibility of social insurance management agency detects the fraud of paying social insurance contributions?"

Penalties for violations of social insurance: Sanctions are imposed by sanctions to enforce social insurance legal obligations. With the question "If the management agency finds out that the social insurance fraud is fraudulent, which of the following consequences do you think is likely to happen?", this factor includes four observed variables "Paying social insurance with a relatively fine amount of small", "Paying social insurance with a significant fine", "Be examined in more detail in the following years", "Criminal prosecution".

Social influence: is the social pressure to perform or not to perform the behavior; in other words the rules and norms that are understood by the members of a group. These rules and standards will guide and/or limit social behavior without the need for legal coercion. This factor includes the observed variables "Most people I know to support me when I comply with the law on social insurance", "Family relatives, friends and partners, and associates all support and encourage encouraged me to comply with the law on social insurance", "I find it common to comply with the law on social insurance now", and "Most of the people who are important to me think that cheating on social insurance contributions is a wrong act".

Corporate finance: The financial condition of the business reflects the performance of the business. This factor includes the observed variables "Enterprises have high actual profits, the level of compliance with social insurance is high", "When facing financial difficulties, enterprises often tend not to comply with social insurance", "If the burden of Social insurance burden of enterprises is lower than other enterprises in the same group, compliance with social insurance will increase".

Corporate reputation: It is the overall assessment of the business stakeholders based on the past and present actions of the business and even its foreseeable future actions. Including three observed variables "Your company is considered by customers as reputable and trustworthy", "Customers appreciate your company's reputation", and "Your company is seen by customers recognized as a good organization".

Social insurance policies and procedures: Designing social insurance policies, regulations of law on social insurance and processes and procedures for implementing social insurance. This factor includes three observed variables: "Strict and complete regulations on management of collection and payment of social insurance contributions increase the compliance of enterprises with social insurance", and "Stipulations on high social insurance contributions reduce the compliance with social insurance of enterprises". "Reforming administrative procedures, publicizing the process of paying and paying social insurance increases the compliance of enterprises with social insurance"

Compliance with the law on social insurance of non-state enterprises: the degree of compliance with the provisions of the law on social insurance of the legal subject of social insurance, within the scope of this study, the subject of the law on social

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insurance is non-state enterprises. This factor includes three observed variables "Your company declares and pays social insurance in full and on time", "Your company will respond positively and well implement the legal policy on social insurance" and " In general, your company fully complies with the provisions of the law on social insurance".

### 6. CONCLUSION

In Vietnam today, the non-state enterprise economic sector is growing strongly in both quantity and quality; has contributed significantly and holds an increasingly important position in the socio-economic development of the country. However, non-state enterprises account for a very high proportion of the total number of enterprises in the country and create jobs for about 60% of employees in the enterprise sector. However, the rate of participation in social insurance for employees is still low, the coverage of social insurance in non-state enterprises is very limited, and the contribution rate to the social insurance fund is not commensurate with the potential. Along with that, the situation of debt payment and late payment of social insurance in non-state enterprises is quite common, accounting for more than 70% of the total social insurance debt. This study focuses on building a research model of factors affecting compliance with the law on social insurance of non-state enterprises in Vietnam. Using the method of reviewing documents, traditional analytical and statistical methods for secondary sources of documents of agencies and organizations, qualitative analysis methods with the opinions of experts economic, and at the same time use in-depth interview method for research subjects; the research team has screened and selected the main factors suitable to the research context, proposed a research model of factors affecting the level of compliance with the law on social insurance of non-state enterprises in Vietnam, there are six independent variables: "the possibility of being inspected and examined by social insurance", "penalties for violations of social insurance", "social influence", "corporate finance", "corporate reputation", "social insurance policies and procedures"; and the dependent variable "compliance with the law on social insurance of non-state enterprises". The results of this study serve as the basis for future quantitative studies.

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## The Myth of Maghrib Prohibition in "Sandekala" Film: Reception Analysis Toward Indonesian Audiences



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**ABSTRACT:** This study aims to find out the meaning of student audiences in Jakarta and Tangerang on the mythical message of prohibiting going out at sunset (Maghrib) in the film "Sandekala". The research approach used the qualitative approach with the reception analysis method by Stuart Hall. Stuart Hall's Reception Analysis Theory (Encoding-Decoding) has a model with three categories: Dominant Position, Negotiated Position, and Oppositional Position. The data collection technique in this research used in-depth interviews with ten informants. The research results show the shared meaning of the mythical messages about the Maghrib exit ban in the film Sandekala is different. It happens because the decoding that informants produce varies according to factors of gender, age, religion, ethnicity and culture. There are other factors, such as the level of individual beliefs in myths in society, especially the Maghrib exit ban. The study concludes that ten informants and eight questions in this research obtained thirty-six shared meanings of Dominant Position, seventeen of Negotiated Position and twenty-seven of Oppositional position to the mythical messages of the Maghrib exit ban in the film Sandekala. In this study, as a whole, the most shared meaning is found in the dominant position. In other words, Jakarta and Tangerang students, as active audiences, can interpret the content and messages of the myth about the Maghrib exit ban in the Film Sandekala following what the text producer gave in the film.

**KEYWORDS:** Reception Analysis, Myth of Going out Avoidance during Maghrib time, Film Sandekala, Creatures.

### I. INTRODUCTION

Indonesia has many stories and beliefs passed down from generation to generation, and some Indonesians believe the stories and faiths. Their faiths about prohibitions and taboos have developed since the time of their ancestors. These faiths relate to the unseen, spirits, and taboos. Each region and ethnic group in Indonesia has a unique diversity of beliefs and myths. So it reflects the richness of culture and spiritual diversity in Indonesia.

A myth is a story in which a culture explains or understands some aspects of reality or nature. Barthes states that myth is a culture's way of thinking about something and how to conceptualize or understand it. For Barthes, the most crucial way myth works is to naturalize history. It points to the fact that myths are the product of a social class that has gained a specific historical dominance: the meanings they disseminate through myths inevitably carry history with them, but their implementation as myths leads them to deny and present them as natural rather than historical or social (Fiske, 2012, pp. 143–145).

Indonesian ancestors passed down and developed various myths until now, and some Indonesian people believe in them. One of them is the myth about going out avoidance during Maghrib time. Some Indonesians believe going out of the house and getting involved in activities during Maghrib time is forbidden (pamali). If they violate it, a spirit named Sandekala will come, disturb and kidnap anyone who plays outside the house when Maghrib arrives. Sundanese people usually call the spirit creature the Ghost of Dusk.

The word Sandekala comes from the Sundanese language Sande or Sanes. The word sande or sanes means not, and kala is another word of time that means time. In other words, the word sandekala means "not the time". According to the myth, dusk is the change of day to night. Some Indonesians believe that when dusk comes, many jinns and demons will roam. (Anggara, Wibowo, and Rusmana 2021).

The belief of the myth about going out avoidance during Maghrib time in the culture and traditions of Indonesian society becomes a short-film theme entitled "Sandekala". Directed by Amry Ramadhan, Sandekala is a horror genre film, and the film duration is 09:04 (nine minutes four seconds). The film producer is Snap Films. This film tells the story of mamala (negative

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consequences in Sundanese) due to violating pamali or prohibition because this violates the ban of going out during Maghrib time. Rizka Dwi Septiana and Kesyia Safalina Karindra act as a mother and a daughter, respectively.

In the depiction of the film "Sandekala," when getting home, a mother and her daughter were walking briskly down small, quiet and dark alleys. When walking, the mother and daughter encountered an unreasonable disturbance. An invisible creature kept lurking and followed every step of them. Until reaching their home's doorstep, they felt the senseless interference persistently. Then, when they were just at the house's doorstep, the invisible creature appeared. Feeling the spirit creature come at them from behind, they immediately went into the house to seek shelter. But regrettably, it was just a matter of how they felt. The mother and daughter did not go inside their home. They continued to remain in the alley where they had recently passed. Sandekala was the creature in such an alley.

The depiction of locations, atmosphere, music, scenes in the film and a Sandekala creature makes the audience feel the tension experienced by the mother and her daughter during Maghrib time. Moreover, the director portrays the creature Sandekala as a female figure who wears white clothes and long hair in the film. Also, the audience heard Sinden's voice (female singers singing Javanese songs) accompanied by gamelan music (Javanese music). This depiction is very closely related to elements of Javanese culture. It makes the audience feel the events in the film are close to everyday life. So it makes the audience's hair stand up when watching it.

The film "Sandekala" has received several national and international awards. These include (1). Winner People's Choices (Audience's Favorite Short Film) in the XXI Short Film Festival 2016, (2). The 4th Winner (Regional 1) The West Java Film Festival 2015, (3). The Finalist of the 2015 French Cinema Festival, (4). The Official Selection Los Angeles Indonesian Film Festival 2015, (5). The Official Selection PPI Paris 2015, (6). The Official Selection Ganesha Film Festival (Banding Nu Aink!) 2016, and (7). The Official Selection (Non-Competition) Vidsee Juree 2016.

Researchers are interested in studying the myth about going out avoidance during Maghrib time in the film "Sandekala" because this film brings up the myth as a component of Indonesian beliefs. It is still expanding right now. Some Indonesians have this belief.

Based on the research background, the formulation of this research problem is how the audience's acceptance, views and meanings towards the myth about going out avoidance during Maghrib time in the film "Sandekala". It aims to describe active audiences' acceptance and shared meanings of the myth about going out avoidance during Maghrib time in "Sandekala" using Reception analysis. It is because reception analysis conceptually speaks to a comparison between opinions and audiences' interpretations. This analysis focuses on media texts by analyzing the reception and meanings of messages among audiences. This analysis also examines the message role that audiences are exposed to in daily life through media.

## II. LITERATURE REVIEW

### A. Film As Mass Media.

Film as mass media is an art form to be enjoyed or watched, and it is effective media to sensitize the audience. The power and ability of films to reach many social segments make experts agree that films have the potential to influence their audiences (Brahmantio and Vera, 2017).

The film is part of mass media communication and audio-visual mass media communication. It aims to convey a specific social or moral message to its audience. With the reality that grows and develops in society, we can create film themes almost the same as what the audiences feel. So, when watching and finished watching, the audience can feel the sensation of closeness to the scene in the movie. Not only the scenes in the films but also the meaning, purpose and message of the films we watch. (Asri 2020).

Films' artistic skill and technological complexity successfully entertain, inform, and educate audiences. Thus, like literary works, films invite audiences to obtain cultural education without being coercive, patronizing or indulgent (Al-Ma'ruf 2003).

The film industry makes films to watch and hear as it should be. One media that may provide entertainment and offer a different way to reflect thoughts and be used to educate is the movie. The film's messages may teach audiences valuable lessons. (Sitompul and Simaremar, 2017).

The 2016 film Sandekala, which has a running time of nine minutes and forty seconds, was uploaded on Youtube social media under the account name Vidsee so that anybody can watch it without charge. More than 6,000 users have watched the film Sandekala on YouTube so far. The film idea developed by the film's director, Sandekala, comes from the reality that certain Indonesian people hold about not leaving their houses during Maghrib time.

### B. Active Audience.

Audiences are crucial to reception analysis because they actively take in communications and, if they can grasp them, can interpret verbal and nonverbal messages or symbols. The acceptability of each audience might vary from that of others because they come

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from varied social and cultural backgrounds. As a result, audiences with various traits will read texts in many ways (Milatishofa, Kusrin, and Weni Adityasning Arindawati 2021).

Active audiences are individuals in public who may produce or interpret the meaning of the show they are watching. According to O'Sullivan (1994), the main focus of this theory is the decoding, analysing, and understanding process of the text content or media messages (Purnamasari and Tutiasri 2021).

Active audiences are individuals in public who select which media to consume based on informational demands that have enriched their knowledge and productive activities (Wahid, 2016, p. 107).

Active audiences are spectators, readers, or listeners in the process of communication and reception of messages. They are essential in understanding how individuals respond, interpret, and give meaning to messages conveyed through the intended media. It means that the active audience makes the text in a film rich with meaning. It is because active audiences produce shared meaning on the basis of background, experience and daily life.

### **C. Shared Meaning.**

Shared meaning is the process by which media messages are received and then interpreted by the audiences. (Febriani, S., & Wahid, 2018).

An individual's shared meaning has a different context. Humans are makers of shared meanings that are unable to separate from the references they have, which is why these occur. It means an individual has diverse frames of reference, often known as references, from one person to another. In addition, there is a field of experience or a range of experiences which cannot be generalized from one individual to the next (Pawaka and Choiriyati, 2020).

The process through which audiences assign interpretation or meaning to something is known as shared meanings. These occur when the audiences understand and interpret the messages or content. The influencing factors to audiences' share meanings include knowledge, experience, culture, social life, and background. As a result of being driven by many factors, the shared meanings they convey also differ. Therefore, communicators or message makers must understand the audiences' shared meaning because it determines whether or not the audiences will grasp the messages they are trying to convey.

### **D. Reception Analysis.**

A different approach for learning about audiences is reception analysis. It is how a mass media audience interprets a message.

A research method that examines audiences is reception analysis. This approach positions audiences as a subject who actively generates meaning. In other words, reception analysis emphasizes audiences and the content of media messages (Dhamayanti 2015).

The best approach to interpreting and responding to television programmes is through reception with broad knowledge. Reception theory focuses on how readers or audiences receive the messages rather than the message senders. The message's shared meaning is determined by the audience's cultural background and life experience (Ghassani and Nugroho 2019).

Theoretically, media texts gain meaning only at the point of receipt (reception), i.e. when they are read, watched, or listened to. In other words, we consider audiences as meaning makers rather than simply consumers of media content. In this situation, audiences perceive the media texts based on their cultural background and subjective life experiences. As a result, one media text might result in several interpretations of a similar text. Every text, in essence, contains an ideology, which makes reception studies important (Pertiwi, Ri'aeni, and Yusron, 2020).

A media text that audiences absorb has a purpose in shaping their values and beliefs. At the same time, each audience's interpretation of the shared meanings might allow for multiple alternate meanings in the media itself. In other words, reception analysis considers the text to have polysemy. It means audiences might perceive the media text differently depending on their diverse histories and situations. (Schrder, 2016, published in Inriyanti et al., 2022).

### **E. Encoding/Decoding.**

The media (encoder) will create a message based on their ideals and perspectives. Later, the message encoded by media organisations will undergo decoding from decoders (audiences) depending on their ideas and perspectives (Dwiputra, 2021).

Audiences can interpret and analyse media messages in ways relevant to their social circumstances. It occurs because the code used to encode and the decoded code is not always the same. Encoding is a message created by the producer or creator of media texts. Meanwhile, decoding refers to the audience's interpretation of the media texts that have been viewed (Purnamasari and Tutiasri, 2021).

According to Stuart Hall, audiences decode media messages from three perspectives: dominant hegemony, negotiation, and Morisan opposition (2013:550-551):

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- 1) Dominant hegemonic position. According to Hall, dominant hegemony occurs when "the media produce the message; the masses consume it, and the audience's reading coincides with the preferred reading." It is a situation in which the media transmits its messages utilizing society's dominant cultural codes. In other words, audiences and the media reflect the dominant culture of the time. The media must ensure the messages it produces adhere to the prevailing culture in society.
- 2) Negotiated position. The position in which the audience generally accepts the dominant ideology but rejects its application in specific cases (as Hall argues: the audience assimilated the leading ideology in general but opposes its application in some cases). In this instance, several exclusions to its applicability are consistent with the existing cultural norms.
- 3) Oppositional position. The "opposition" is the final option audiences might use to decode media messages. It happens when critical audience substitutes or modifies the messages or codes that the media can communicate with different messages or codes. The intended messages or media preferences get rejection by audiences, who substitute their ideas with their way of thinking about the topics the media conveys.

### III. RESEARCH METHODS

This study takes a qualitative approach because researchers want to understand and analyze meaning or opinion about a phenomenon that occurs in society in systematical, factual and accurate way, namely how audiences interpret the myth of going out avoidance during Maghrib time in the film Sandekala.

This study employs Stuart Hall's reception analysis research methods which recognize the process used by the audiences to interpret a media show.

Reception analysis is one of the audience studies in mass communication that looks at how audiences receive and understand messages and how they function in daily life. Reception analysis is a discussion subject and a basis for the audiences' activities in response to the themes discussed (Pawaka and Choiriyati, 2020).

With the reception analysis approach, this study seeks to discover how informants perceive, respond to, and accept the film Sandekala which promotes the myth of the Maghrib exit ban. Researchers gathered information through interviews.

#### A. Research Object/Subject.

The object of this study is the film Sandekala which raises the myth of going out avoidance during Maghrib time. Then, the subjects of this study were active informants selected based on audiences who had watched the film Sandekala. (Haryono, 2020, p. 118) "Interpretation and meaning are returned to the understanding and perspective of the research subject, not from the viewpoint of the researchers". The audience in this study is students of some universities in Jakarta and Tangerang with various ages, genders, religions, and ethnicities. Following these criteria, researchers found ten active informants who had watched Sandekala's film.

#### B. Data Collection Techniques.

The primary data collection approach used by the researchers was in-depth interviews with ten informants who were students in Jakarta and Tangerang. While concerning secondary data collecting procedures, researchers look for references from books, literature, and the Internet (Websites) to back up their findings.

### IV. RESEARCH RESULTS

According to the findings of this study, the dominant positions have 36 shared meanings. It is the most when compared to the negotiated and optional ones. The negotiating positions have 17, and the opposing positions have 27 consecutively.

Table 1 illustrates the results of this study with the problem formulation "How the Audience Interprets the Myth of going out avoidance during Maghrib time in the film Sandekala" using Stuart Hall's reception analysis. In this case, the audience as an audience interprets the content of mass media texts using their experience, knowledge, and social context. In interpreting media texts, several social factors influence the audience, such as race, culture, gender, and each individual's belief in myths.

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Table 1.

	Inf 1	Inf 2	Inf 3	Inf 4	Inf 5	Inf 6	Inf 7	Inf 8	Inf 9	Inf 10
<b>Dominant</b>	6	1	7	1	2	8	2	1	7	1
<b>Negotiation</b>	2	4	1	-	2	-	3	3	-	2
<b>Opposition</b>	-	3	-	7	4	-	3	4	1	5
<b>Dominant = 36</b>										
<b>Negotiation = 17</b>										
<b>Opposition = 27</b>										
<b>Total = 80</b>										

## Dominant Position

The shared meanings from the dominant position come from the informant 6 and 9 as the students at several universities located in Tangerang regarding the meaning of the word "myth". Both informants interpreted myth as a rule or prohibition that the ancestors had passed down, and later generations had to believe it.

The shared meanings from the dominant position also generate from informants' belief in myths, which originate from students in Jakarta and Tangerang, namely informants 3, 6, and 9. Because the myths are true, the three informants believed we should not discount them.

The interpretation of the myth about going out avoidance during Maghrib time resulted in the shared meanings of the dominant position. They were Jakarta and Tangerang students: informants 1, 2, 3, 6 and 9. The five informants' opinion is similar to interpreting the myth of going out avoidance during Maghrib time. The going-out prohibition during Maghrib time appears because spirits begin to arrive.

The shared meaning of the dominant position derives from the shared meanings of belief in the myth of going out avoidance during Maghrib time among students living in Jakarta and Tangerang, namely the informants 1, 3, 6, and 9. The three informants felt the myth of going out avoidance during Maghrib time is true. If we violate it, the spirits will cause trouble and even abduct us.

The informant's interpretation of the film Sandekala, which appeared in the current era and raised the myth of going out avoidance during Maghrib time, also contributes to the shared meaning from the dominant position. Informants 1, 3, 5, 6, 7, 8, and 9 have shared meanings of the dominant position among students who lived in Jakarta and Tangerang. The seven informants understood it as a reminder not to go out or plan activities during Maghrib time. It is still applicable today. It also informs the audience that there is still a belief in the myth of not going out during Maghrib time.

In the modern day, the informant's interpretation of the myth of going out avoidance during Maghrib time resulted in the shared meanings of the dominant position from informants 1, 3, and 6, students from Jakarta and Tangerang. The three informants understood the current era's myth of not going out during Maghrib time as a prohibition (pamali). They think that if we violate it a spirit known as Sandekala will cause difficulty or take us.

The dominant position's shared meanings derive from the informant's reception of the messages in the film Sandekala, notably informants 1, 3, 4, 5, 6, 7, 9, and 10. They are university students from Jakarta and Tangerang. The eight informants took it as a reminder that a group of individuals believed in the myth of not going out during Maghrib time and as a reminder not to go out at that time.

The informants' interpretations in reaction to viewing the film Sandekala relate to what gives rise to the shared meanings of the dominant position. They are university students residing in Jakarta and Tangerang, namely informants 1, 3, 6, and 9. The four informants felt inspired by the film Sandekala and were more aware of the myths.

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### Negotiation Position

The shared meaning of negotiation comes from informants 1, 2, 3, 5, 7, 8 and 10, university students who reside in Jakarta and Tangerang and interpret the word "myth". The seven informants interpret myth as a story passed down from generation to generation. It is not all true in real life. In reality, not everything is accurate. So we may or may not accept it.

The shared meanings of the negotiated positions from informants 1, 2, 5, 7, 8, and 10 were likewise a product of the audiences' interpretation of their belief in myths. There were university students from Tangerang and Jakarta. All of the myths were not accepted by the six informants. They accept the myths if they have plausible origins and outcomes.

The informants' interpretation of Jakarta students' belief in the myth of going out avoidance during Maghrib time, namely informant 2, also contributes to the shared meanings of the negotiated position. Because having not personally encountered the myths, Informant 2 did not believe them.

The current interpretation of the myth of going out avoidance during Maghrib time, provided by a Jakarta student named Informant 7, also contributes to the shared meanings of the negotiated position. For Informant 7, it is no problem if we do not go out during Maghrib time as long as you do not break your trust or neglect your Islamic obligations. We must complete numerous activities in the modern area during or close to Maghrib time.

According to informants 2 and 8, university students from Tangerang and Jakarta, the mythical messages in the film Sandekala that forbids going out during Maghrib time relate to what led to the interpretation of the negotiated position. They interpret that the message in the myth of prohibiting going out during Maghrib time in the film Sandekala does not necessarily happen. There are positive and negative sides to this myth. On the positive side, the night is dangerous for children. On the negative side, young children can be afraid to perform the Maghrib prayer at the mosque.

### Oppositional Position

Regarding the interpretation of the word "myth," the shared meaning of the opposition position comes from informant 4, a university student in Jakarta. Informant 4 interprets myth as a rule or prohibition. If we violate it, the consequences do not make sense. So, he did not believe the myth.

Moreover, the shared meanings of the oppositional position relate to the reception of the myth of going out avoidance during Maghrib time, university students living in Jakarta, namely informants 4, 5, 7, 8 and 10. The five informants interpreted that going out during Maghrib is dangerous. There are many criminal acts at night, and it does not relate to the interference of spirits. So the five informants did not believe the myth of going out avoidance during Maghrib time.

The shared meanings of the oppositional position also come from the informant's interpretation of the film Sandekala which raised the myth of going out avoidance during Maghrib time and aired it in the current era. The shared meanings of the oppositional position come from Jakarta students, namely informants 2, 4 and 10. The three informants interpreted the film Sandekala which raised the myth of going out avoidance during Maghrib time and aired in the current era, as irrelevant to activities currently.

The interpretation of informants regarding the myth of the Maghrib exit ban in the current era resulted in the shared meanings of the oppositional position from informants 2, 4, 5, 8, 9 and 10, university students in Jakarta and Tangerang. The six informants interpreted the myth of the Maghrib exit ban in today's era, spirits are disappearing. In addition, because the world is all digital and not many people discuss the myth of the Maghreb exit ban. So the myth is not too crucial, and many people have ruled out the Maghrib exit myth.

The shared meanings of the oppositional position come from the informant's interpretation when responding after watching the film Sandekala. It came from informants 2, 4, 5, 7, 8 and 10, university students in Jakarta and Tangerang. The five informants did not feel influenced by the film Sandekala which raised the myth theme. They have also encountered the Maghrib exit ban, and nothing happened because we must carry out activities during Maghrib time. The five informants thought their feelings wouldn't be changed by what they hadn't experienced personally.

## V. DISCUSSION

Students from the Javanese, Betawi, and Sundanese tribes who practice Islam, Buddhism, and Hinduism are primarily responsible for the shared meanings of the dominant position. According to the texts the film's producer provided, the audiences may effectively grasp the fictitious meaning of the Maghrib exit ban in the film Sandekala. In addition, in producing the shared meanings, audiences relate to backgrounds of culture, religion and family believing the myths, especially the myth of the maghrib exit ban.

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Furthermore, the audiences of Padang and Malay ethnicity and Muslims and Christians are the key sources of the shared meanings of the negotiated position. The audiences do not fully believe in myths, especially the myth of going out avoidance during Maghrib time. The audiences interpret those in the film Sandekala based on the myth's viewpoints, beliefs and truth.

Lastly, the shared meaning of the oppositional position mainly comes from the women audiences studying in Jakarta. The informants rejected almost all the mythical messages about the Maghrib exit ban in the film Sandekala. In interpreting the myth of going out avoidance during Maghrib time in the Sandekala film, the informants have a culture and attitude that are indifferent to the development of myths trusted typically by the public. The informants also relate their activities and personal experience in interpreting the myths about going out avoidance during Maghrib time in the film Sandekala.

### VI. CONCLUSIONS

Finally, researchers can conclude that the audiences who consume horror genre short films are the film Sandekala in this study. They have varied shared meanings and responses to the myth of going out avoidance during Maghrib time in the film Sandekala. The social position, beliefs, religion, culture and the experiences and faiths of each individual towards matters related to myths influence this issue.

Overall, from the questions the researcher asked the audiences, we find the most shared meanings in the dominant position. It means that as active audiences, Jakarta and Tangerang students can interpret the content and message of the myth of the Maghrib exit ban in the Sandekala film in accordance with what the producer's texts in the film have given.

However, several informants refused or held a different viewpoint. They made several exceptions or adjusted the content and message of the Maghrib exit ban myth in the Sandekala film based on religion, ethnic-cultural beliefs and other factors such as the level of belief to the myth, especially the Maghrib exit ban myth and individual experience of the activities they perform during Maghrib time. Because of that, audiences make the shared meanings of the negotiated and the opposition position.

The audiences can wisely respond to the film Sandekala because its impact depends on how the audiences interpret and react to it. Do not take pamali (prohibition) and the rules that develop in society for granted. It is because negative consequences can happen to anyone, anywhere and anytime. Mutual respect for fellow creatures because humans are not the only ones that live on our planet. Invisible creatures are not always absent.

### ACKNOWLEDGMENT

First, praise Allah the Most Beneficent and Most Merciful, the researcher must express. Without a permit from Allah Almighty, we cannot accomplish this assignment. The researcher is also very grateful to my parents and lecturers for supporting and helping me complete this assignment. Finally, we also thank all of the informants who agreed to serve as research resources so that we could successfully finish this study.

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## Possible Self of University Students



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### THE CURRENT RESEARCH AIMS TO IDENTIFY

- 1- Possible self of university students.
- 2- Statistically significant differences according to the gender variable (male-female) in the potential self of university students.
- 3- Statistically significant differences according to the variable of specialization (scientific - human) to the possible self of university students.

The current research is determined by the students of the University of Kirkuk for the initial / morning study for both genders for 2021/2022 academic year, the sample for statistical analysis consisted of (300) male and female students, the stability sample is (40) male and female students, final application sample is (300) male and female students, for the purpose of achieving the objectives of the research, The researcher built a scale of the possible self based on the theoretical framework shown in the research, the data was processed using the statistical bag for social sciences SPSS, the results of the research showed that university students have a possible self, in addition to that there are no differences in the possible self among university students, as well as there are no differences in self possible among university students according to the variable of specialization in humanities, the research conducted a set of recommendations and suggestions .

### CHAPTER ONE: RESEARCH DEFINITION

#### Research importance and necessity

The youth segment is one of most important of society, as they represent a means of change, construction and progress, which is reflected in all their personal, mental, psychological and social aspects (Al-Shammari, 2:2003). Young people go through an important stage, which is the university one, as it is considered a unique stage in qualifying them scientifically and culturally to take responsibility and gain knowledge of the requirements of the cotemporary time in terms of science , technology and increase production (Beuker, 1963: (112) . Gaining knowledge of the requirements of the age in terms of science and technology and increasing production (Beuker, 1963: (112).

University students are of great importance in society because of their social, cultural, and economic role in society, as they are considered active forces in the growth and progress of society , an essential pillar in bearing the responsibilities and burdens of society and building it, as students acquire a lot from cultural circles, including school, university, and finally the large community in all its institutions, and they are able to communicate what they have learned to other cultures by contacting the social traditions of the community , and knowing the beliefs, social values, and behavioral models that are acquired and transmitted socially through language, morals, art, and education (Uwais, 1970: 23-24) .

The possible self represents perceptions of the potential of the self in the future, including what individuals expect to become, what they wish to become, and what they fear they will become. These perceptions contain information about relevant concerns that guide decisions about what goals to work on, how to manage time and effort, what to avoid or resist, and what to give up. Baltes & Carstensen, 1991, p258; Freund & Baltes, ) .

Students face various difficulties and obstacles in their academic lives, as some of them go through negative situations that they cannot deal with, And these were classified as individuals with academic resilience, as they were seen as being able to reach positive results despite negative circumstances (Alva, 1991)

The possible self is considered as a bridge between the individual's current reality and the results he wishes to reach in the future. The individual's knowledge of what is expected or achievable constitutes a self-motivation that directs the course of behavior , the hoped potential self works to enhance the positive emotional state of the individual, and generates the desire to maintain this state to him, which stimulates him to activity even if he is in a state of failure or frustration. Individuals who have positive

## Possible Self of University Students

thinking about themselves have a future possible self that works to compensate for the situation. present to them in a more positive situation in the future (Crosse, 199).

The possible self is affected by the social context as it is influenced by the expectations of others and by the cultural, social and political contexts, in the sense that the society's culture determines whether the possible self of individual is positive or negative. The possible self is constructed from past and present perceptions of the self, also it can direct the current self-organization of individuals towards achieving their future goals (Cross 1999).

The possible self is of great importance because it provides a link between the self-concept in the past, present and future, between all of this and the individual's aspirations, motives and fears. The current self is related to the possible future self, as indicated by the study (Anderman and Enderman, 1998) which aimed to identify the relationship between the current self and the possible future self during early adolescence, which was conducted on a sample of (315) male and female students in the United States of America. The results showed that the concepts of the current and future positive academic self were associated with positive changes in the class average, when students' current academic self was higher than their future academic self, the grade average score increased, when the current social self was higher than the future social self, the average grade score decreased. (Anderman & Anderman, 1998, p6).

The possible self differs from fantasies or dreams, which are more likely to be used to induce a positive mood, distract from, or directly oppose negative thoughts (Oyserman & Fryberg, 2006, p190).

The possible self is an important component of self-regulatory processes because it forms a context for evaluating the actual self, makes the person feel the importance of their current situation, and plays an important role in motivational processes; As it determines the direction of change and motivates the person to take action in order to achieve the desired visions of the self and to prevent the realization of what he fears. Both (Oyserman & Markus (1990) indicate indicates that the potential self differs in the effectiveness of self-regulation, the self-regulatory effort improves when individuals have a positive potential self (goals) and a negative potential self (concerns) in the same field, meaning that the potential self is balanced (Oyserman & Markus 1990) (p112-125), and when individuals incorporate detailed strategies into their potential self, the potential self becomes "reasonable" (Oyserman, Bybee, Terry & Hart-Johnson) (2004, p130-149), and when the potential self is balanced, individuals choose strategies that increase the likelihood of becoming self-like. Positive potential and less likely to become like the negative possible self, then focus on self-regulation and expansion of effort (125-Oyserman & Markus, 1990, p112).

The possible self provides adaptive benefits such as criteria for evaluating the current self, powerful incentives for pursuit and acquisition, stamina, and personal growth, and it provides an opportunity to experiment with various potential futures (Oyserman, ybeeTerry, 2006).

(Ruvolo & Markus, 1992) (p189, p95 & Marks (1991) suggested that individuals change and recalibrate themselves in response to changes in life conditions in order to maintain happiness, Cross & Markus). 1991, p241; Hooker, 1992, p87; Markus & Herzog, 1991, p115).

(Frazier, et al., 2000) found that the potential self differs according to age, as young people tend to emphasize the hoped potential self, while adults tend to emphasize the feared potential self. The fact that the potential self differs between age groups is an indication that this component of the self continues to evolve with age, with some components of the potential self remaining important while others fade away, yet the potential self has been shown to resist change (Frazier, et al., 2000, p237).

Accordingly, the researcher found the necessity of conducting this study, on an important sample, which is the university students segment, as it is the nation's repertoire and the cause of its existence, and it is the conscious category that must be preserved from all negative influences that may lead to disorder behavioral. Therefore, the results of the research may help to choose the best ways to guide students for construct themselves, as well to reach sound mental health, as the problem of the current study has developed by paying attention to the category of university students. As one of the categories that need more care, attention, study and following -up.

Based on the foregoing, the importance of the current research and the need for it are highlighted in the following:

- 1- The study derives its importance from the nature of the university students, their effective impact within the entity of society, and their ability to build the future, overcome pressures and assume responsibilities, as it needs special care; Because the strength of any society is measured by the strength of its youth and the distinction of preparing them.
- 2- possibility that the results of the current study contribute to the design of development and guidance programs for young people that include personal, social, professional and educational aspects that aim to develop the intellectual, social and cultural potential of university youth, to confront the negative effects produced by the sudden changes and transformations of the era of globalization, security and cultural conditions.

## Possible Self of University Students

- 3- Getting benefit from the results of the current study in drawing the attention of officials in university institutions to increase interest in university students, in helping them solve crises and problems facing them, knowing their capabilities and self-potential, working on providing opportunities and discovering appropriate alternatives to benefit in helping them to achieve their identities in a clear and specific way, while preserving their self-coherence.

### Goals of research

- 4- Possible self of university students
- 5- Statistically significant differences according to the gender variable (male-female) of the Possible self of university students.
- 6- Statistically significant differences according to the variable of specialization (scientific - human) in the possible self among university students.

### Limits of Research

The current research is determined by the students of the University of Kirkuk for the first / morning study for both genders for the academic year 2021/2022

### Define terms

#### Possible self

**Markus & Nurius ( 1986 )** Perceptions of the individual's self in the future circumstances of his goals, motives, and fears, as they represent individuals' perceptions of what they expect to be , what they hope to be , what they fear to be , it separates from the .current self, but interconnected with it  
Markus & Nurius ( 1986, p954 )

**Theoretical definition:** The researcher adopted (Marcus & Nurius, 1986, p954) a theoretical definition of the possible self.

**Operational Definition:** The total score obtained by the student on the Possible Self Scale.

## Chapter Two: A theoretical aspect

### Possible self

The self-concept is an individual's view of himself, what he was in the past, what he is now, and what he could become in the future, including social roles and group membership. A good performance of the self-concept helps the individual to understand the present and maintain positive feelings. of the self, makes predictions about the future and directs motivation, the contents of the future-oriented component of the self-concept have been called ("possible self" Markus & Nurius, 1986) .

The possible self is the self that the individual believes what he might become in the near and distant future, and then it is important in defining goals and motivation, and the possible self is

That each individual has positive images of himself that he desires and expects to be , negative images of the self that he desires to avoid them (Oyserman & James, 2009, p372).

### Evolution of the possible self: individual and contextual factors

The possible self is affected by both individual and contextual factors, where other individuals could be a role models or a counter models of both the positive and negative possible self, these others can be specific individuals with whom one has a relationship, or simply a general sense of what others have been able to do. Therefore, the possible self is affected by the followings:

#### 1- Past experiences

Past experiences of success or failure in a field clearly influence a person's beliefs about the suitability or possibility of one's possible self-realization in that aspect as well as one's ability to formulate strategies for working on one's possible self. Past failures may make it difficult to articulate what success in a particular field will look like and which strategies are likely to be effective. Past successes may facilitate articulation of both what success looks like and the steps needed to achieve a hoped potential self, for example young people with a history of juvenile delinquency and school failure are less likely to express education and work which focused on a possible self, and students from low-income families are less likely To generate multiple strategies for how to reach the possible self that focus on college education such as doing well and getting good grades (Oyserman & Fryberg, 2006, pp17) .

#### 2- Developmental Context

The content of the possible self reflects the self-related tasks of development. During the school years, these tasks focus on developing a sense of self, being competent in studying, and being connected to others. With developing , the focus of these tasks evolves, for example college students and young adults focus on the professional, educational, and personal potential self (such as marriage), while family and parenting can become the most important potential self in the middle young adult years (Oyserman & Fryberg, 2006, pp1739) .

#### 3- Social Context

The possible self is also affected by the expectations of others and historical, social and political contexts. Some social contexts provide easy access to role models and reminders to focus on studying while other contexts rarely provide these merit , low-

## Possible Self of University Students

income, and rural youth may be less able to imagine or sustain a possible study-focused self if their contexts involves few models for overcoming barriers to success or is riddled with stereotypes that are incompatible with a focus on academic empowerment, and research has shown that if going to college does not seem like an option early in middle school, students' academic effort will decline ( (2006) Oyserman & Fryber -pp.)

### Possible functions of the self:

Markus and Nurius (1986) see that there are two important functions performed by the possible self in personality:

First, it forms the context for evaluating one's actual self and is therefore an important component of self-evaluation processes. A self-assessment of the current state of oneself must take into account some reference point - a certain potential state that is a criterion in assessing the current state

Second: the possible self plays an important role in motivational processes. It determines the direction of change and motivates the person to take action in order to achieve the desired visions of the self and prevent the realization of the feared self. Theoretically, any personality can perform these motivational functions. To emphasize them. The term 'self-regulating possible self' is used in the literature as distinct from the self-reinforcing possible self (Hoyle and Sherrill 2006). The latter type of possible self functions. Primarily promotes self-esteem, optimism, and hope for the future but has no direct impact on behavior a potential self that primarily performs these emotional functions and does not clearly translate into a drive for change is usually formulated at a higher level of abstraction; tends to be imprecise and inaccurate very specific, . As it contains descriptions of action strategies aimed at achieving the goal. In order to perform organizational functions effectively, the possible self must be formulated as precisely as possible and its content must relate to strategies for achieving the desired state or avoiding the fearful state of self. Another important factor is the belief that a certain possibility is achievable as well as the broader belief in the possibility of controlling one's life. ( Oyserman and James, 2009, pp373–394)

### Interpretational theory of the possible self:

The researcher adopted the theory of Marcus and Nurius (1986) and its definition in building the theoretical framework of the possible self, because it included the meanings of the possible self, which were dealt with in previous studies and were suitable for the research sample, in addition to that, it dealt directly with the concept of the possible self.

### The theory of Marcus and Nurius (Markus and Nurius, 1986):

Possible self theory (Markus and Nurius, 1986) is the foundational work for the study of the 'possible self', based on empirical studies of individuals' perceptions of what their lives might become in the future. factors within and outside their control "what they think they will be, what they would like to be, and what they fear they will be" (Markus and Nurius 1986, p954). This possible self is part of a broader narrative structure we use to understand our lives in our social context, "representing one's ongoing hopes and fears and indicating what can be achieved given appropriate social conditions" (Karim, 2020: 35).

According to the classical approach of Markus and Nurius (1986), the possible self are "future-projected" aspects of self-knowledge, which refer to what a person considers possible in relation to himself. Like all self-knowledge, the possible self is based largely on past experiences, but its core lies in explicit references to the future. They may be said to be imaginary visions of the future self (Erikson 2007; Hoyle and Sherrill 2006). As such, they are cognitive representations of hopes, fears, and fantasies regarding the self (Markus and Nurius, 1986).

Possible self are cognitive components of the self-concept that are oriented towards the future; It is a "cognitive manifestation of enduring goals, aspirations, motives, fears and threats" In other words, it includes a person's knowledge of his or her hopes, fears, plans, goals, potentials, and future. There are different aspects of a possible self, including the selves that people can become, or that people wish or fear to become. They can be composed of the hoped self, such as the "successful and outstanding professional self, the intelligent, intelligent, and creative self, or the cherished and likable self," and the feared self, including the "lady bag self" (Markus and Nurius, 1986, p99).

This theory forms part of the broader work in psychology on the "concept of the self" (the ways in which we understand ourselves in the context of life), and thus the possible self constitutes the self-concept in the future tense, representing our current perceptions of what our lives might turn out by constructing Multiple representations of ourselves as they may be days, months, or years from now, and in particular the possible self is a key component of the "working self-concept" of how we see ourselves at a given moment; familiar, vivid images that can be accessed cognitively It guides daily decision-making and the processing of personal experiences. A practical self-concept derives from the set of self-perceptions that are currently active in thought and memory and can be counted as an active and ever-changing body of available self-knowledge.

The group changes with the change of individuals in their internal states and social conditions (Markus and Nurius 1986). It is necessary not only to understand the contents and characteristics of the possible self but to understand how the possible self translates into relevant goal-directed behaviours. Researchers have suggested several motivational mechanisms or reasons for how to motivate people by accessing these mental representations. In the original concept when the theory of the possible self

## Possible Self of University Students

was first proposed, it was suggested that the construct can function as a regulator directly influencing behaviors. The mechanisms for translating the possible self into action depend on whether these self-perceptions are employed in the working self-concept, which is "the set of self-concepts currently active in thought and memory" (Markus & Nurius, 1986, p.957).

It must be emphasized that although the term "probabilities" seems to have clear positive connotations (having associations with positive resources that can be beneficially "used"), in the context of the theory referred to here, such a one-sided assessment would oversimplify issue. Possible self are future states of the self, and future thoughts are not always positive.

Thus, the concept of a possible self covers references not only to selves that are positively evaluated and hopefully anticipated but also to those possibilities that one would like to avoid, perceiving them as potentially threatening. It is also worth noting that the plural is used in the concept of a possible self, clearly indicating that we are not dealing with a single potential self but with a multi-item set of perceived possibilities. A person may generate many alternate versions of the self, either relating to different areas of life or within a single area. These are not representations of some abstract personality trait or general category but rather comprehensive ideas about the self in specific roles and situations (Markus and Nurius, 1986).

Possible self theory suggests that individuals view their future selves with varying psychological distances, which can influence a person's motivations and decisions. For example, when the near future appears on the horizon and is psychologically important, people will be more motivated than when the future selves appear psychologically distant (Wilson & Ross, 2000, 2001). This may be related to the fact that representations of oneself at a point in time distant in the future are more abstract and structured than representations of oneself at a point in time in the near future.

Marcus & Nurius, (1986) argue that individuals have a range of possible selves that can be broadly categorized; Some will appear to the individual as positive images that must be pursued while others will be negative or should be avoided. Each self will also appear in one form or another, and the possible self may be more or less desirable than others, with feelings of happiness, success, safety and well-being in the future included.

Marcus and Nurius, (1986) assert that the possible self consists of past and present representations of the self, Previous opinions and experiences contribute to the construction and pursuit of the possible self. For example, if a student once gets a full mark on a report card, he can currently act in the hope of achieving that goal again, and then a future-oriented potential self can help explain current individual behavior. Ruvolo & Markus, 1992, p98. Examining a person's self-possibility for an advanced degree is more difficult to study at present than someone who does not, as well as motivating behavior and demonstrating perseverance (Markus and Nurius, 1986, P954).

One of particular interest are the mechanisms by which these assessments of desire and potential are made. Marcus and Nurius (1986) argue that they are established through a range of personal experiences and from the broader context in which the individual lives, and that the individual is free to create any variety of possible selves. , suggests that the set of possible selves derives from the categories that become salient through the individual's social, cultural, and historical contextual to the individual, From the models, images, and symbols provided by the media and through the individual's direct social experiences, then the possible self has the ability to reveal the primary and constructive nature of the self, but it also reflects the extent to which the self is socially defined and bound by it (Karkhi, 2020: 40-42).

The possible self can act as predictors of possible future outcomes or predict outcomes, because it includes ideas about what the individual might be, think, feel, experience, or be seen to be, and as such, they present end states to strive for or avoid. (Cantor, et al. p.99)

. These constructs may illustrate the opportunities that people see as available as well as the expectations they have for themselves, reaching one's potential. Most importantly, for future self-guiders to have motivational power, they must be seen as reasonable as well being accessible (Oettingen & Thorpe.2006))

The sociocultural context provides an initial starting point for any known types of self within a family or community, as they are seen as possible in the broader sense, for example, 'I am a lawyer' or 'I am a mother'. It also normatively shapes an individual's values about what self should be considered appropriate or attractive through a set of "social data" that is strongly influenced by class, gender, and race.

The social and cultural context also plays an influential role in determining the types of personal experiences that individuals have, where they go, who they meet, and what they see within the physical environment in which they live (creating a situation in which individuals from different social groups have completely different perspectives than they might). To have them, which is desirable and possible) (Karkhi, 2020: 43).

### Research methodology and procedures:

This chapter includes a description of the research methodology and the procedures undertaken by the researcher, which are summarized in the research methodology, the research community, its description, and the selection of a representative sample. This chapter also includes an explanation of the measurement tool.

## Possible Self of University Students

### First: Research Methodology: Research Methodology

To achieve the goals of the current research, a specific scientific methodology must be followed, as the current research relied on the (descriptive) research method, which is

a method upon which the researcher relies in obtaining accurate information that depicts the social reality (Abdul Aziz, 2010:160).

### Second: Population of Research

The research community consisted of students of the morning preliminary study of the colleges of Kirkuk University for the academic year (2021-2022), distributed according to the colleges into (18) colleges, including (5) humanities colleges and (13) scientific colleges, and their number reached (23483) male and female students, including (10248) males and (13236) females, Table (1) explains this.

**Table No. 1: The research community is distributed according to the scientific and humanities colleges**

No.	Name of Colleges	Specialism	Male	Female	Total
1	College of Sciences	Scientific	604	1313	1917
2	College of Medicine	Scientific	386	663	1049
3	College of Veterinary	Scientific	136	163	299
4	College of Education – Hawija	Humanitarian	749	970	1719
5	Computer sciences	Scientific	402	520	922
6	College of Law	Scientific	1456	933	2389
7	Administration and economy	Humanitarian	926	709	1635
8	College of basic education	Humanitarian	316	604	920
9	College of Nursing	Scientific	70	471	541
10	College of Pharmacy	Scientific	141	299	440
11	College of Engineering	Scientific	796	372	1168
12	College of Arts	Humanitarian	630	845	1475
13	College of Education of pure sciences	Scientific	1005	1389	2394
14	College of physics	Scientific	439	196	634
15	College of Dentistry	Scientific	220	445	665
16	College of Agriculture	Scientific	315	387	702
17	College of Agriculture ( Hawija )	Scientific	50	36	86
18	College of Humanitarian education	Scientific	1607	2921	23483
<b>Total</b>			<b>10248</b>	<b>13236</b>	<b>23483</b>

### Third: Research Samples: Statistical Analysis Sample:

The selection of the sample is not an easy matter, because it depends on many important things such as measurement, results, and tools, and despite that, it is not difficult for the properly trained researcher (Al-Jabri, 2011: 89).

The researcher chose a sample of (300) male and female students from the University of Kirkuk in a random manner from a group of colleges for the purpose of conducting the statistical analysis of the current research tools, which are (regulating personal emotions, the possible self, emotional confrontation), the researcher chose the sample in a simple random way from the colleges of the university Kirkuk, by (50) male and female students from the aforementioned colleges, as shown in Table (2).

**Table No. 2: Distribution of the statistical analysis sample according to the college name and location**

Name of Colleges	Location	NO. of Students
College of Nursing	Kirkuk University	50
College of Pharmacy	Kirkuk University	50
College of Dentistry	Kirkuk University	50

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College of Arts	Kirkuk University	50
College of basic education	Kirkuk University	50
College of Education – Hawija	Kirkuk University	50
<b>Total</b>		<b>300</b>

### B-Stability sample

The stability sample consisted of (40) male and female students, (20) male and female students from the College of Basic Education, (20) male and female students from the College of Nursing, (20) males and (20) females. Table (3) explains this.

**Table No. 3: Distribution of the statistical analysis sample according to the college name and location**

College	Gender		No. of Students
	Male	Female	
College of basic education	10	10	20
College of Nursing	10	10	20

### c- Final application sample

The research sample means a partial group of the research community so that the elements of society represent the best representation so that the results of that sample can be generalized to the entire community (Al-Jizani, 2020: 79), as the final application sample consisted of (300) male and female students from the University of Kirkuk distributed among a number of colleges, as the male sample amounted to (127), the female sample amounted to (173), while the humanities sample amounted to (137), the scientific major sample amounted to (163), table (4) shows this.

**Table No. 4: application sample**

Specialism	College	Gender		Total
		Male	Female	
Scientific	College of Dentistry	20	35	55
	College of Agriculture	23	40	63
	College of Agriculture ( Hawija )	17	28	45
<b>Total</b>		<b>60</b>	<b>103</b>	<b>163</b>
Humanitarian	College of Administration and economy	24	25	49
	College of basic education	23	22	45
	College of Arts	20	23	43
<b>Total</b>		<b>67</b>	<b>70</b>	<b>137</b>
<b>Grand Total</b>		<b>127</b>	<b>173</b>	<b>300</b>

### Fourth: The research tool: possible self Scale :

#### For the purpose of constructing a scale for the possible self, the following steps were followed:

Defining the concept of the possible self: After reviewing a group of studies and literature on the concept of the possible self, the researcher built a measure based on the theory of (Marus & Nurius, 1986), who defined the possible self (the perceptions of the individual's self in the future circumstances of his goals, his drives and his fears. Individuals' perceptions of what they expect to become, what they hope to be, and what they fear they will be , separate from, but arranged with, the present self.

#### Identify the scope of possible self:

**First:** The expected possible self: It is what the individual expects his self to be in a future period of time, and it consists of both positive and negative expectations.

**Second:** The aspired possible self: It is what the individual hopes his self will be like in a future period of time, and it consists of positive wishes only.

**Third:** The feared potential self: It is what the individual fears that his self will be in a future period of time, and it consists of negative perceptions only (Marus & Nurius, 1986:23).

#### C- Drafting and validity of paragraphs:

For the purpose of formulating the paragraphs of the Possible Self Scale, in its initial form, (24) paragraphs were formulated, covering the aforementioned scopes. The researcher unified the number of items in the field according to the theoretical

## Possible Self of University Students

framework of the scale. This method is the most widely used in constructing psychological scales, due to its clarity, ease of procedures, and unaffected by analysis and correction by the subjectivity of the researcher (Sundberge, 1977:171).

### D- Answer alternatives and scale correction:

For the purpose of correcting the scale, five graded alternatives were placed in front of each item of the possible self-scale (applies to me always, applies to me often, applies to me sometimes, rarely applies to me, never applies to me) in light of the correction key (1,2,3, 4,5), and if the respondent showed his acceptance of the paragraph by pointing to the alternative (it always applies to me) he gives the score (5), and if he indicated the alternative (it often applies to me) he gives the score (4), and if he refers to the alternative (it sometimes applies to me) he gives the score (3) And if he refers to the alternative (it rarely applies) he gives a score of (2), and if he refers to the alternative (it does not apply to at all) he gives a score of (1) .

The paragraphs were presented in their initial form, which numbered (24) paragraphs, to a group of arbitrators specialized in educational psychology, psychological counseling, measurement and evaluation, to express their opinions on the appropriateness of the paragraphs and to judge the suitability of the paragraphs for the field from which they were derived, their suitability for the alternatives to the answer, and to conduct what They see fit from amendments to the paragraphs, as well as determining the clarity of each of the paragraphs, as all the paragraphs obtained an agreement of 80% among the arbitrators, and after collecting the opinions of the arbitrators and analyzing them using the chi-square to find out the significance of the difference between the opinions of the arbitrators in terms of the validity of the paragraphs for their components or not At the level of significance (0.05), the results showed that all items of the scale are valid, as the calculated chi-square value was greater than the tabular value of (3.84), and Table (5) shows this.

**Table. 5: Opinions of experts and arbitrators for possible self scale**

Sphere		Paragraph h sequence	Paragra phs' No.	Approvers		Non- approvers		Chi-square Test		Significa nce level 0,05
				No.	P.Rate	Calc ulat ed	Sched uled	Calculat ed	Sched uled	
Expecte possible self		,5 ,4 ,2 ,1 8 ,7 6	7	20	%100	0	indicati ve	20	3,84	indicativ e
		3	1	19	%95	1	% 5	16,2	3,84	indicativ e

Hoped possible self	7 ,5 ,3 ,2 ,1	5	19	%95	1	% 5	16,2	3,84	indicative
	4	1	18	%90	2	%10	12,8	3,84	indicative
	8 ,6	2	20	%100		%0	20	3,84	indicative
Non-hoped possible self	8 ,6 ,1	3	20	%100		%0	20	3,84	indicative
	7 ,5 ,3 ,2	4	19	%95	1	% 5	16,2	3,84	indicative
	4	1	17	%85	3	%15	9,8	3,84	indicative

**Statistical analysis of the Paragraphs :** The statistical analysis of the items is necessary because it affects the accuracy of the scale in measuring what is intended to be measured (Abdul-Rahman, 1998: 41).

The following are the verification procedures: Calculating the discriminatory power of the paragraphs Choosing a random sample of (300) male and female students from the University of Kirkuk. The scale was applied in its initial form to the sample, then the answers were corrected and the questionnaires were arranged in descending order from the highest score to the lowest score. The upper (27%) and the lower (27%) of the grades were chosen to represent the two extreme groups. The researcher relied on this ratio because it provides two groups with the best possible size and distinction. The two groups consisted of (162) students, and they included (81) Male and female students from each group.

The t-test was used for two independent samples, in order to test the difference between the upper and lower groups and each paragraph of the scale. Significance level (0.05) and a degree of freedom (160), and thus the scale became in its final form consisting of (24) items and table (6) explains that.



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**Schedule 6: Significance of the differences between the averages of the upper and lower groups on the possible self-scale items.**

No.	Upper group		lower group		T value calculated	Significance level 0,05
	arithmetic mean	standard deviation	arithmetic mean	standard deviation		
1	4,27	1,01	3,35	1,27	5,04	indicative
2	3,60	1,32	2,27	1,33	6,37	indicative
3	4,46	0,89	2,84	1,13	10,14	indicative
4	3,66	1,56	2,54	1,34	4,90	Indicative
5	4,74	0,66	3,13	1,37	9,44	indicative
6	4,56	0,91	2,83	1,30	9,77	indicative
7	4,74	0,68	3,33	1,44	7,94	indicative
8	4,48	0,88	2,32	1,29	12,42	indicative
9	4,60	0,86	3,33	1,31	7,28	indicative
10	4,77	0,61	3,14	1,50	9,00	indicative
11	4,40	0,94	2,58	1,30	10,21	indicative
12	4,50	0,88	3,29	1,41	6,52	indicative
13	4,71	0,77	3,69	1,38	5,80	indicative
14	4,56	0,83	3,16	1,34	7,99	indicative
15	4,46	1,00	3,14	1,23	7,47	indicative
16	4,25	1,20	2,86	1,46	6,42	indicative
17	4,32	0,97	2,81	1,38	7,99	indicative
18	4,12	1,25	2,66	1,47	6,76	indicative
19	3,54	1,68	2,75	1,45	3,20	indicative
20	4,35	1,00	2,39	1,26	10,95	indicative
21	4,56	0,85	2,76	1,31	10,35	indicative
22	4,19	1,01	2,40	1,28	9,84	indicative
23	4,75	1,44	2,49	1,30	5,82	indicative
24	4,25	1,04	2,70	1,40	8,00	indicative

\* All items are significant, the tabular t-value is 1.96, the level of significance is 0.05, the degree of freedom is 160

The relationship of the paragraph to the total score of the scale and to the field to which it belongs Correlation means that the paragraph measures the same concept or ability as the total score, and thus the paragraphs whose correlation coefficients with the total score are statistically significant are preserved (Habib and Kazem, 2018: 25), the researcher used the Pearson correlation coefficient (person) to extract the value of the correlation between the paragraph the scale , and the paragraph and the domain to which it belongs, the results showed that the values of the correlation coefficients are statistically significant at the level of significance (0.05), degrees of freedom (298), and when compared to the tabular value of (0.098), and Table (7) shows this .

**Schedule 7: The values of the correlation coefficients between the score of each paragraph with the total score of the domain and total score of the scale.**

No.	correlation coefficient		No.	correlation coefficient	
	Scope	Scale		Scope	Scale
1	0,37	0,36	13	0,59	0,47
2	0,42	0,38	14	0,66	0,49
3	0,55	0,52	15	0,60	0,49
4	0,41	0,35	16	0,53	0,42
5	0,41	0,38	17	0,55	0,4
6	0,51	0,52	18	0,54	0,41
7	0,53	0,35	19	0,46	0,27
8	0,55	0,50	20	0,67	0,57
9	0,67	0,50	21	0,49	0,51
10	0,65	0,30	22	0,61	0,48
11	0,65	0,58	23	0,55	0,37
12	0,67	0,48	24	0,58	0,51

## Possible Self of University Students

### Domain relationship with other domains (matrix of internal links).

For the purpose of verifying that the scale domains contribute to some degree in measuring the general factor that exists in all scale domains, the possible self (the expected self, the hoped self, the feared self, the possible self), so it was necessary to verify the correlation of the measurement domains with each other, as the researcher relied on the statistical analysis sample forms consisting of (300) forms, and using the Pearson correlation coefficient (person), it showed from the matrix that the correlation coefficients are all positive and statistically significant, as shown in Table (8).

**Schedule 8: Matrix of correlations between domains and the total score of the possible self scale**

Scopes	expected self	hoped self	Non- hoped self	possible self
expected self	1	0,53	0,58	0,86
hoped self		1	0,31	0,76
Non- hoped self			1	0,79
possible self				1

### Psychometric characteristics of the scale: honesty, scale of possible self:

Honesty is one of the basic characteristics in the educational and psychological test scores, as Cronbach believes that the completeness of the test score for the cognitive feature and the confidence of this interpretation is estimated by the test's validity. The scale is closely related to the ability that it measures, this scale is able to distinguish between the ability that it measures, and other capabilities that are likely to be mixed with or overlapped with (Abdul-Rahman, 1998: 183)

This scale (the possible self) had an indicator of validity:

#### Face validity:

This kind of validity was achieved in the current scale, when items were presented to a group of arbitrators and specialists in educational psychology, psychological counseling, psychology, and measurement and evaluation.

#### Construct validity:

This type of validity is achieved in several ways by finding correlation coefficients between the paragraphs and among other sub-measures (Al Chalabi, 2005: 102).

This kind of validity was achieved in the current scale, by calculating the paragraph distinction indicators, extracting the correlation between the total score of the paragraph score of a scale, and extracting the paragraph's relationship to the field to which it belongs, as well as the relationship of the field to other.

The stability of the possible self scale: The stability of the scale was calculated according to two methods:

#### A- Retest method:

For the purpose of extracting stability, the scale was applied to a sample of stability of (40) male and female students who were randomly selected. Two weeks after the first application, stability was applied again to the same sample, and the correlation coefficient was calculated between the two applications, as the correlation coefficient was (0.85). Which is the stability coefficient by the method of re-testing, which is a good coefficient, as Essawy indicates that the correlation coefficient must range between (0.70 \_ 0.90) if the tool is to be described with acceptable stability (Essawy, 1985: 58).

B - Wackeronbach method of internal consistency:

It is one of the methods of homogeneity in calculating the reliability coefficients, this method works to calculate the correlation between the scores of the sample of the stability on all items of the scale, the stability coefficient extracted in this way shows the consistency of the individual's performance from one item to another to the internal homogeneity between the items of the scale (Cronbach, 1951: 298)

The stability coefficient in this way was (0.81), which is a good stability coefficient, and Table (9) shows that.

**Schedule 9: Possible self-scale stability coefficients using the Vachronbach and retest methods**

Scale	Coefficient reliability	
	Re-testing	Cronbach's alpha
Possible self	0.85	0.81

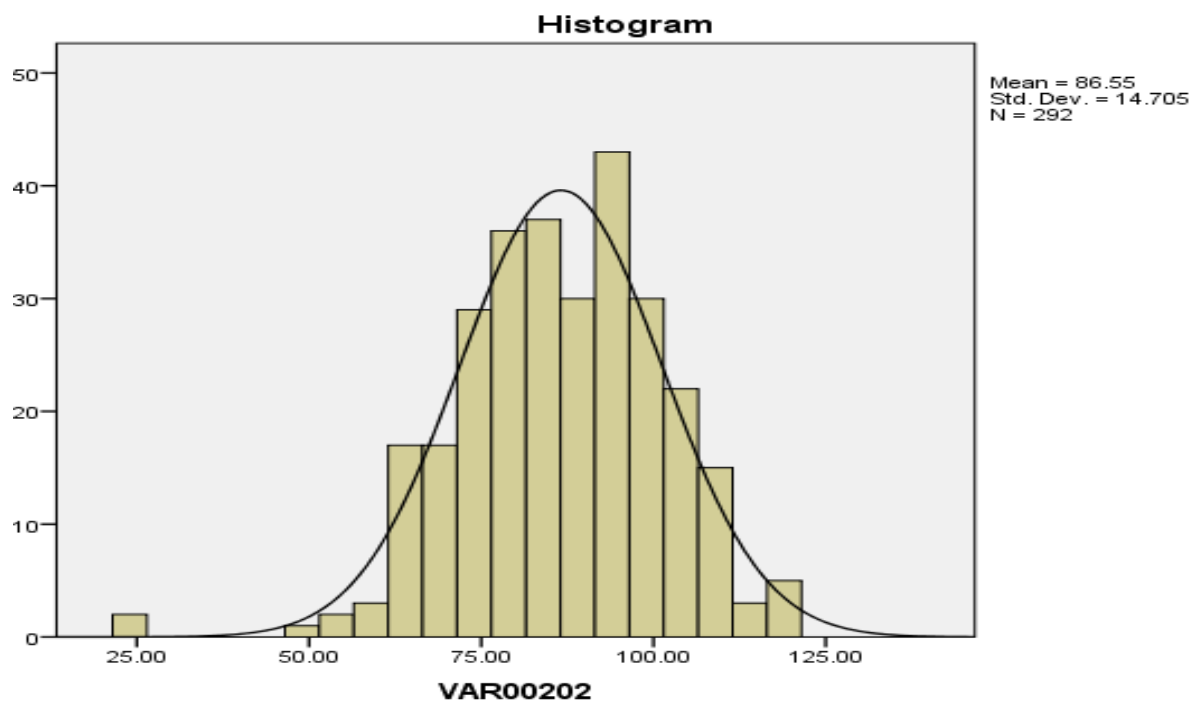
Statistical descriptive characteristics of the possible self-Scale:

A number of descriptive statistical characteristics of the possible self-scale were extracted, as shown in Table (10) and Figure (1).

## Possible Self of University Students

Schedule 10: Statistical indicators of a possible self-measurement

No.	Statistical indicators	Value
1	N of sample person	300
2	Arithmetic mean	86,77
3	Hypothesized Mean	72
4	Median	86,73
5	Mode	82
6	Standard Deviation	15,11
7	Variance	228,31
8	Skewness	0,470 -
9	kurtosis	0,143
10	Range	80
11	Minimum	32
12	Maximum	112
13	Sum	25274



**Form (1) A graph showing the distribution of scores of respondents on the possible self-scale**

From the extrapolation of table (16) and figure (2) above, it is clear that the statistical indicators extracted for the possible self-measure were moderately distributed, which gives an indication of the sample's representation of the researched community, and thus the researcher can use parametric statistical methods

### **Fifth - Statistical Methods:**

The appropriate statistical methods were used in the current research with the help of the statistical program (spss) as follows :

- 1- Percentage =  $100 \times \text{Part} / (\text{All})$
- 2- Chi-square to verify the validity of the items of the two scales through the opinions of specialists within the virtual validity procedure.
- 3 - The second test, t test: for two independent samples to extract the discriminatory power of the items of the two scales
- 4 - Pearson's correlation coefficient: It was used to extract the relationship of the paragraph with the total score of the two scales and the stability coefficient of the two scales and to show the correlation between the two variables.

## Possible Self of University Students

5 - Alvacronbach equation: It was used to extract the stability of the two scales using the internal consistency method.

6 - The second test for one sample, t-test: to identify the organization of personal emotions, the possible self, and positive confrontation among college students of the university.

Fourth chapter:

This chapter includes presenting the research results according to the sequence of objectives, as well as presenting recommendations and proposals.

**The first goal:** to identify the degree of self-possibility of university students.

In order to achieve this goal, the potential self-scale was applied to the research sample (300), male and female students. The researcher used the t-test for one sample, as the arithmetic mean of the expected self domain was (28.76), and the standard deviation was (5.84), as it reached The theoretical mean (42), the calculated T-value was (13.94), which is greater than the tabular value (1.96), as it indicates that the research sample individuals have the expected self, and the arithmetic mean for the field of the hoped self was (31.59), and a standard deviation (6.27). n) The theoretical mean was (24), and the calculated T-value was (20.68), which is greater than the tabular value (1.96), as it indicates that the research sample individuals have the hoped self, and the arithmetic mean for the non-hoped self-domain was (26.41), and the deviation standard (6.52) . Theoretical mean (24), and the calculated T-value was (6.32), which is greater than the tabular value (1.96), as it indicates that the research sample individuals have the feared self, and the arithmetic mean of the possible self measure was (86.77), and the standard deviation (15.11). As the theoretical mean was (72), as the calculated T-value was (16.70), which is greater than the tabular value (1.96), as it indicates that the research sample individuals have the possible self, at the level of significance (0.05), and a degree of freedom ( 299), as shown in Table (11) .

**Schedule 11: The results of the t-test for one sample to measure the degree of self-possible among university students**

Variables	Arithmetic mean	standard deviation	theoretical average	T value		Degree of Freedom	level of significance (0.05)
				Calculated	Scheduled		
expected self	28,76	5,84	24	13,94	1,96	299	indicative
hoped self	31,59	6,27	24	20,68			indicative
Non- hoped self	26,41	6,52	24	6,32			indicative
possible self	86,77	15,11	72	16,70			indicative

\* There are differences in the expected self in favor of the arithmetic mean, that is, the expected self is high among university students. The research sample has a possible self, and this result can be explained by the nature of the experiences gained by university students, and that they look at their future selves through varying psychological distances, as it affects personal motives and decisions, as he sees (Marcus & Nurius) .

The possible self arises through a set of personal experiences and from the broader context in which the individual lives, and that the individual has the freedom to create any group of possible selves, and that the group of possible selves is derived from the categories that have become prominent through the social, cultural and historical contexts of the individual and from the models, images and symbols that It is provided by the media and through the direct social experiences of the individual, as the results of the current study were consistent with the study of (Sultan, 2018), the study of (Makki, 2020), the results of (Karkhi, 2020), the results of (Anderman, 1998), and the study of (Gilgliuti, 1995). ), and the results of the study (Kadelli, 2010), as the researcher believes that the group of experiences provided by the university environment and the acquisition of a group of selves that support the orientation of students for realistic future within the scope of the individual's psychological, mental and physical capabilities, as the potential self works to predict the future results, because it includes ideas about what the individual can be, think, feel, or experience.

**The second goal: the difference in the degrees of the possible self according to the gender variable (male - female) among university students.**

To achieve this goal, the researcher used the t-test for two independent samples, as the arithmetic mean for the male sample was (28.45), female sample was (29.00), standard deviation for the male sample was (6.76), female sample was (5.04), for the field of expected self, as the calculated T-value reached (0.78), as it indicates that there are no differences between males and females in the expected self, arithmetic mean for the male sample was (31.10), for the female sample (31.96), the standard deviation for the

## Possible Self of University Students

male sample was (31.10). (6.43), the female sample (6.14), for the hoped self, as the calculated T-value reached (1.16), as it indicates that there are no differences between males and females in the hoped self.

The arithmetic mean for the male sample was (26.69), for the female sample (26.20), and the standard deviation for the male sample was (7.06), and for the female sample (6.10), for the feared self domain, as the calculated t-value reached (0, 64), indicating that there are no differences between males and females in the fearful self, as the arithmetic mean for the male sample was (86.25), and for the female sample (87.17), and the standard deviation for the male sample was (16.38), and the standard deviation for the sample Females (14.13), for the measure of possible self, as the calculated t-value reached (0.51), at the level of significance (0.05), and a degree of freedom (298), which is not statistically significant, as it indicates that there are no differences between males and females in regard of possible self, and Table (12) shows this.

**Schedule 12: The results of the t-test for two independent, unequal samples to indicate differences in possible self-scores among university students according to the gender variable (male - female)**

Variables	Gender	Number	Arithmetic average	standard deviation	T value		Degree of Freedom	level of significance (0.05)
					Calculated	Calculated		
expected self hoped self	males	127	28,45	6,76	0,78	1,96	298	*Non- indicative
	females	173	29,00	5,04				
Non- hoped self	males	127	31,10	6,43	1,16			*Non- indicative
	females	173	31,96	6,14				
expected self hoped self	males	127	26,69	7,06	0,64			*Non- indicative
	females	173	26,20	6,10				
Non- hoped self	males	127	86,25	16,38	0,51			*Non- indicative
	females	173	87,17	14,13				

\* Non- indicative

It is non-significant and there are no differences between the sexes in all domains and the measure of the possible self. This result can be explained by the fact that university students of both genders have a possible self, because the nature of the academic stage for university students and the level of mental processes and experiences that students acquire in universities raise the level of expectation. future of individuals, as (Marcus & Nurius) did not confirm the differences between both genders, as (Marcus and Nurius) believes that individuals have a group of possible selves that can be classified on a large scale, as some individuals have positive images, while others are negative and should be avoided As the possible self is formed through the previous experiences of the individual, he also believes that the possible self consists of past and present representations of the self.

And previous opinions and experiences contribute to building the possible self and pursuing it. The results of the current study differed with the results of the study (Sultan, 2018), which confirmed the existence of individual differences between males and females in the possible self, and the results of the study (Karkhi, 2020), as the researcher believes that experiences what university students acquire does not distinguish between males and females, so they have the possible self at the same level, and the university environment is charged with future visions and future expectations that they see themselves with.

The previous opinions and experiences contribute to building the possible self and pursuing it. The results of the current study differed with the results of the study (Sultan, 2018), which confirmed the existence of individual differences between males and females in the possible self, and the results of the study (Karkhi, 2020), as the researcher believes that experiences What university students acquire does not distinguish between males and females, so they have the possible self at the same level, and the university environment is charged with future visions and future expectations that they see themselves with.

**The third goal: the difference in the degrees of the possible self according to the variable of specialization (scientific - human) among university students.**

To achieve this goal, the researcher used the t-test for two independent samples. The researcher applied the measure of the possible self to the members of the research sample, as the arithmetic mean of the sample of the scientific specialization was

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(28.93), and the arithmetic mean of the sample of the human specialization was (28.62), for the field of the expected self, as it reached the standard deviation of the scientific specialization sample (6.82) .

The standard deviation of the sample of the human specialization (4.85), as the calculated t-value reached (0.44), as it indicates that there are no differences between the scientific and the human in the expected self, and the arithmetic mean of the sample of the scientific specialization reached (30.17), as it reached The arithmetic mean of the sample of the human specialization (32.81), for the field of the hoped self, as the standard deviation of the sample of the scientific specialization was (7.39), and the standard deviation of the sample of the human specialization (4.82), as the calculated t-value reached (3.65), It indicates that there are differences between the scientific and the humanistic in the hoped self and in favor of the human specialization, as the arithmetic mean for the sample of the scientific specialization was (26.91), and the arithmetic mean for the sample of the human specialization was (25.98) for the field of the non-hoped self, as the standard deviation of the sample of the scientific specialization was (6.66), the standard deviation of the sample of the human specialization was (6.40), the calculated t-value reached (1.21), as it indicates that there are no differences between the scientific and the humanities in The feared self, as the arithmetic mean for the sample of the scientific specialization was (86.02), and the arithmetic mean for the sample of the human specialization was (87.57), for the measure of the possible self, as the standard deviation of the sample of the scientific specialization was (17.69), and the standard deviation of the sample of the human specialization (12.50), as the calculated T-value was (0.87), at the level of significance (0.05), and the degree of freedom (298), which is not statistically significant, as it indicates that there are no differences between the scientific specialization and the human specialization in Possible self, and Table (13) shows this.

**Table 13: The results of the t-test for two independent samples to indicate the differences in the degrees of self-possible among university students according to the variable of specialization (scientific - human)**

Variables	Specialism	No.	Arithmetic average	standard deviation	T value		Degree of freedom	level of significance (0.05)
					Calculated	Calculated		
expected self hoped self	Scientific	163	28,93	6,82	0,44	1,96	298	*Non-indicative
	Humanitarian	137	28,62	4,85				
Non- hoped self	Scientific	163	30,17	7,39	3,65			Indicative
	Humanitarian	137	32,81	4,82				
expected self hoped self	Scientific	163	26,91	6,66	1,21			*Non-indicative
	Humanitarian	137	25,98	6,40				
Non- hoped self	Scientific	163	86,02	17,69	0,87			*Non-indicative
	Humanitarian	137	87,57	12,50				

\* There are no differences in the possible self between the scientific and human specializations in all fields and the scale as a whole, except for the field of the hoped self. There is a statistically significant difference in favor of the human specialization. This result can be explained by the students' vision of the future and that society needs all scientific and human fields, as Marcus sees Markus & Nurius) that individuals' understanding of their potential selves and the characteristics of the potential self makes them translate themselves into goal-oriented behaviors.

Over time, changes are made in the feedback of the practical self-concept to more stable forms, and in this way the potential self can become more integrated with the ways in which we see and understand ourselves. The results of the current study differed with the results of the study (Karkhi, 2020), as the researcher sees both scientific and human specializations have future visions that support their potential self, improve well-being and optimism, and improve the ability to self-control and regulate behavior.

## RECOMMENDATIONS

- 1- Holding guidance and educational seminars at the university to define the concepts of the current research (The possible self), in order to educate university students.
- 2- Make a summary of the concepts of the current research, so that parents can identify these concepts and develop them in their children.
- 3- Holding seminars and workshops for the possible self-development of university students.

## Possible Self of University Students

### SUGGESTIONS

- 1- Conducting a correlational study between the possible self and other variables (rumination, emotional innovation, and value system).
- 2- Conducting a possible self-study on other samples such as middle school students or employees.

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### Annex (1)

Department of Educational and Psychological Sciences  
Postgraduate Studies/PhD in Educational Psychology

Dear Student....Dear Student....

The researcher aims to conduct a scientific study, so we ask for your help in answering the paragraphs of the scale attached herewith accurately and frankly, after reading each paragraph carefully and putting a mark (✓) in front of each paragraph , under the alternative that represents you in one of the following five alternatives: (It always applies to me, it applies often applies to me, applies to me sometimes, applies to me rarely, never applies to me)

Note that there is no right or wrong statement; It just represents your point of view. It is necessary to answer all the paragraphs and we advise not to leave any of the paragraphs.

We confirm that your answer is used for the purposes of scientific research, only , please confirm the basic information because it will benefit the researcher in the current research procedures and there is no need to mention the name, noting that your answer will only be seen by the researcher , with all due respects .

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Basic information:

Gender: Male  Female

Specialism: Scientific  Humanitarian

No.	Items	Always applies to me	Often applies to me	Sometimes applies to me	Rarely applies to me	Not applies to me
1	I can make high marks in my studies.					
2	I wish i could obtain a high ranked position in my work					
3	I Feel afraid of not obtaining a job in the future					
4	I don't think I will get a prestigious job in the future					
5	I hope to complete my studies and get a postgraduate degree.					
6	I am afraid that I or one of my family will be expelled from my residence.					
7	I expect facing circumstances that will help me complete my studies.					
8	I hope to be one of the first- classed students after graduation					
9	I'm afraid of addiction to play electronic games in the future.					
10	I feel that my relationship with my friends will not last after graduation					
11	I hope to achieve the goals that I seek in the future					
12	I am afraid to be lost in the future					
13	I see myself as a reliable person in the future					
14	I keen on keeping my good conduct and reputation on					
15	I am afraid of collapsing if I or one of my family were having in a traffic accident.					
16	I hope that I do not have a physical disability that makes me feel inferior.					
17	I try to have a distinguished character .					
18	I am afraid that my goals and aspirations will not be achieved .					
19	I hope that others will keep respecting me in the future .					
20	I keen on keeping control my emotions in future					
21	I feel sad and lose hope of success.					
22	I am worried about my educational and professional future.					
23	I try to continue exercising as I get older					
24	I am afraid of any accident that threatens my safety and stability of my life.					



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## The Influence of Plyometrics and Weight Training Exercises on Limbs Muscle Power in View of Limbs Muscle Endurance in Volleyball Players Aged 16-18 Years



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**ABSTRACT:** This research aims to find out: (1) the influence of plyometrics and weight training exercises on limb muscle power, (2) the different influences between volleyball players who have high and low endurance of limb muscle power on limb muscle power, and (3) the interaction between both exercises and the endurance of limb muscle power with limb muscle power. This research is a field experiment with a 2x2 factorial approach. The sample of this research was male 45 volleyball players who were selected by purposive sampling. The test instrument for measuring the endurance of limb muscle by using the wall sit test and limb muscle power by using vertical jump. The data analysis technique uses two ways Anova with a significant level of 0.05. The result of this research has been found as follows: (1) there is a difference in the influence of plyometrics and weight training on limb muscle power in volleyball players aged 16-18 years, (2) there is a difference in the influence between volleyball players who have endurance of limb muscle high and low on limb muscle power, and (3) there is a interaction between plyometrics and weight training exercises and the endurance of limb muscle high and low with limb muscle power in volleyball players aged 16-18 years. It can be proven by all significance values  $< 0.05$ .

**KEYWORDS:** plyometrics, weight training, limb muscle, volleyball player, age 16-18 years

### I. INTRODUCTION

Sport is a physical activity that can be done by all ages to get physical fitness (Manihuruk et al., 2023). Sport is a physical activity that is a favorite by everyone for their daily needs (Manihuruk et al., 2022). In Indonesia, many sports are developing and currently showing good achievements namely volleyball. Volleyball is a sport that can be played by anyone from various groups, ages, races, religions, and genders and everyone has the right to play it together, anywhere and anytime (Azizah et al., 2022).

Volleyball is a game that uses the ball to be bounced into the air back and forth over the net with the aim that the ball falls into the opponent's area with the ball touching the ground in search of victory and in the volleyball game into the air can use the whole body or part of the body from head to toe with a perfect bounce without the ball touching the ground, and the volleyball game is a game played with 6 people in 1 team, each team tries to play as well as possible and can attack, drop the ball to the opponent and defend until it lands itself (Rachmalia et al., 2022). The basic techniques of volleyball include serving, passing, smash, and block (Gazali, 2016; Hanggara et al., 2018).

In a volleyball game, the most important aspect to win is physical condition (Drikos et al., 2022). Physical condition is a factor that greatly affects a person's achievement, without good physical condition techniques and tactics cannot run perfectly in training or during matches and good physical condition is a requirement that must be possessed by an athlete (Agung et al., 2023). The physical conditions that must be possessed by a volleyball athlete are agility, strength, speed, muscle endurance, power, aerobic exercise (cardiovascular endurance), anaerobic exercise (interval, circuit, and excessive speed training), flexibility, concentration (mental exercise), and balance (Calleja-Gonzalez et al., 2019). The above opinion is in line with Ince's opinion who says that volleyball athletes need maximum speed and explosive movements (Ince, 2019).

A volleyball athlete must have maximum physical condition, especially in volleyball matches, jumps are very often done to serve, block, and smash, so that when jumping athletes need physical conditions, especially good leg muscle power (Mardela & Syukri, 2016). Lower muscle power or precisely leg muscle power is an important element in many sports (Suchomel et al., 2016). Leg

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muscle power can be increased by explosive movements and jumping without a prefix such as in basketball and volleyball (Wang et al., 2022). Athletes need to develop leg muscle power by performing speed and acceleration movements then with specific movements in sports (Mesfar et al., 2022). Therefore, coaches certainly need to look at and consider the needs of the sport when training (Schofield et al., 2022).

In addition, when athletes jump up repeatedly and continuously, of course this does not only talk about leg muscle power, but endurance power. (Hammami et al., 2022). However, to increase the power and endurance of leg muscle power must be supported by good endurance in the leg muscles. The above opinion is in line with the opinion of Munizar et al who say leg muscle endurance in volleyball is a physical component that affects the smash technique (Munizar et al., 2016). (Munizar et al., 2016). In addition to developing speed and power, of course, endurance strength needs to be developed (Vassil & Bazanov, 2012).

Power is a combination of speed and strength (Vai et al., 2018). In addition, power is needed by athletes in the field when practicing and competing (Nugroho et al., 2021). Efforts made to develop and increase the leg muscle power of volleyball players certainly use appropriate and programmed training methods (Indrawan et al., 2021). The training method to increase leg muscle power that is often done is the plyometrics training method (Islami et al., 2022). Plyometrics means increasing size. Another definition states that plyometrics is a movement that is done strongly and quickly by emphasizing shortening and lengthening muscle stretches (Chu & Meyer, 2013). Training with plyometrics methods is used to train and develop physical abilities such as strength, speed, and power (Asadi & Ramírez-Campillo, 2016). In addition, the combination of speed and power is a physical biomotor that is very important in various sports (Blocquiaux et al., 2020; Permana et al., 2022).

In addition, another method that is often used is training using one's own body weight or using external loads, often referred to as weight training. Exercises using your own body weight and external weights are very familiar exercises. This exercise involves the weight of one's own body and external loads to hold, lift, pull, push the body or a tool, so the element of strength is in it. Training using one's own body is an alternative to strength training that can be practiced almost anywhere and anytime, while training using external weights can improve physical fitness such as muscle strength, muscle hypertrophy, coordination, and muscle power (Iversen et al., 2021; Vieira et al., 2021). Exercise using weights is recognized as a functional movement training modality because in each movement the muscles of the body work as a whole (Klika & Jordan, 2013). Therefore, training using the plyometrics method and using body weight training is one of the efforts to develop and increase leg muscle power in volleyball players to be able to improve physical conditions and to be able to achieve achievements.

Research conducted by Ballasas et al applied plyometrics training for fifteen weeks on adolescent female volleyball athletes, successfully found to increase leg muscle strength and jump height (Balasas et al., 2022). Research from Bashir et al testing plyometrics and plyometrics exercises combined with weight training showed no significant difference in leg muscle power of male adolescent volleyball players (Bashir et al., 2018). Another study conducted by Novita et al who said that the plyometrics training method on volleyball players, comparing side to side box shuffle and leap to box plyometrics, found that plyometrics training with the leap to box model was better (Novita et al., 2022).

The researcher made observations at the volleyball training ground, precisely at the volleyball extracurricular of SMK Ma'arif NU 1 Sumpiuh, volleyball extracurricular of SMK Giripuro Sumpiuh, and volleyball extracurricular of SMKN 2 Banyumas, on July 18-22, 2022. The author directly observes the training process given by the coach during smash training that the players when jumping are still classified as not high and not optimal. In addition, the training given by the coach does not pay attention to rest so that volleyball players cannot smash optimally. Researchers also conducted interviews related to training methods that are often used when training leg muscle power. The coach stated that the exercise that is often used to improve is the jumping training method. When the author asked about the dosage of training specifically on repetitions and sets used in training using the jumping method, the coach stated that in one set volleyball players can do 10 to 15 repetitions and can be done 4 to 5 sets. Furthermore, the author asked whether there were short rest arrangements such as intervals and long rest or recovery when practicing, the coach replied that there were interval and recovery arrangements in training but did not know how many seconds or minutes to rest when doing the exercise.

This can be the basis that the use of appropriate training methods and setting exercise doses is important. This is reinforced by several studies that the key to successful training is the appropriateness of exercise dosing, because physical exercise can be analogous to medicine so it must be in accordance with the dose (Gronwald et al., 2020; Pontifex et al., 2019; Wasfy & Baggish, 2016; Zubin Maslov et al., 2018). This is because athletes who are given training are humans who have body structures that anatomically and physiological systems must of course be very concerned. In addition to making observations, the author also collected data using a questionnaire. The questionnaire was given via whatsapp given to the coach on July 20, 2022 to July 26, 2022. The results are as follows 100% of the coaches answered "yes" that power is an important biomotor component in the

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sport of volleyball; 100% of the coaches answered "yes" that good leg muscle power is very supportive of the success of jumping to attack and defense; 100% of the coaches answered "yes" that the plyometrics training method is one of the exercises that can be used to increase leg muscle power; 100% of the coaches answered "yes" the weight training method is one that is used to increase leg muscle power; 100% of the coaches answered "yes" that physical exercise must know the dosage of exercise; 100% of the coaches answered "yes" that high intensity is characterized for power training; 100% of the coaches answered "yes" that high intensity and low volume are characteristic of power training; 75% of the coaches answered "yes" and 25% of the coaches answered "no" that power training is given in one week is three times training; 100% of the coaches answered "yes" that the principle of varied training is important so that athletes do not experience saturation; 100% of the coaches answered "yes" that the principle of progressive overload training is important to increase power in volleyball. Based on the results of the questionnaire, it can be observed that 75% and 25% of the coaches answered that power training is done 3 times a week. This is the basis for the coach's hesitation to ascertain how many power exercises in one week.

This study aims to determine: (1) the effect of plyometrics and weight training on leg muscle power, (2) the difference in influence between volleyball players who have high and low leg muscle endurance on leg muscle power, and (3) the interaction between the two exercises and leg muscle endurance with leg muscle power.

### II. RESEARCH METHODS

This study uses an experimental method with a 2x2 factorial design, which manipulates 2 main variables given an intervention. Then simultaneously perform calculations of attribute variables to determine the main independent variables that are separated or together, the impact of attribute variables, and the interaction of independent variables with attributes on the dependent variable. Factorial design is a research method and in statistics used to test the effect or influence of several independent variables on the dependent variable in an experiment, and in factorial design, independent variables or factors can have more than two levels (Ahmad et al., 2018).

**Table 1. 2x2 Factorial Design**

Manipulative Variable Exercise Method (A)	Limb Muscle Endurance Attribute Variable (B)	
	High Limb Muscle Endurance (B <sub>1</sub> )	Low Limb Muscle Endurance (B <sub>2</sub> )
<i>Plyometrics (A<sub>1</sub>)</i>	(A <sub>1</sub> B <sub>1</sub> )	(A <sub>1</sub> B <sub>2</sub> )
<i>Weight Training (A<sub>2</sub>)</i>	(A <sub>2</sub> B <sub>1</sub> )	(A <sub>2</sub> B <sub>2</sub> )

The research was conducted at the volleyball field of SMK Ma'arif NU 1 Sumpiuh. The research began on August 10 and ended on September 20, 2022. The training was carried out 16 times a meeting; a week was carried out three times a training; the training was carried out adjusting and varying the training dose settings. The first meeting was conducted once the initial test, then the last meeting was conducted once the final test. The initial and final tests were conducted outside of the 16 meetings. The population in this study were volleyball extracurriculars of SMK Ma'arif NU 1 Sumpiuh, SMK Giripuro Sumpiuh, and SMKN 2 Banyumas. Male gender with a total of 45 athletes; body weight (BB) ± 63-75 kg, height (TB) ± 168-179 cm. Sampling technique with purposive side with the following. criteria: (1) volleyball players are willing to carry out the training program given by the author for 16 times, (2) athletes run the exercise in good health do not have a history of injury to the limbs from ligaments, muscles and joints, (3) volleyball players do the exercise seriously, (4) volleyball players are male, (5) volleyball players have carried out anatomical adaptation training for 8 meetings before running the plyometrics training program and weight training exercises guided by the researcher.

Based on the determination of the sample, 45 volleyball players have been found. The next stage is carried out an initial test which aims to see high and low muscle endurance and divide the plyometrics group and the weight training group. The test to measure leg muscle endurance is the wall sit test. The group division stage uses a ranking system and the percentage taken in the high group is 27% and low is 27% (Wartika et al., 2014). That is, 27% of the high muscle endurance group and 27% of the low muscle endurance of the entire sample of 45. Based on this determination, 24 samples have been found. To divide the plyometrics and weight training groups, the match ordinal pairing formula is used by applying the A-B-B-A system so that the groups are balanced. Therefore, 4 groups (high and low) were found with each group totaling 6 people given plyometrics and weight training exercises.

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The first data collection technique used was interviews. The second collection technique is a questionnaire given via whatsapp to ten coaches as a needs analysis. The third data collection technique is the test and measurement method, namely measuring leg muscle power and leg muscle endurance. Measurement of leg muscle endurance using the wall sit test and the validity value of the wall sit test is 0.97, while the reliability is 0.98, so it can be said to be valid and reliable (Markovic et al., 2004). To measure leg muscle power using a vertical jump and the validity value in the vertical jump test is 0.78 while the reliability is 0.93, so it can be said that the vertical jump has good validity and reliability (Pratama & Erawan, 2019). Data analysis techniques test normality, homogeneity and hypothesis testing using the help of SPSS 23 software.

### III. DISCUSSION

From the results of research obtained in the field and analyzed using the SPSS 23 application, it shows that the data is normally distributed, homogeneous and there is an influence. The results of data analysis using SPSS 23 can be seen in the table below:

**Table 2. Normality Test**

Group		p	Significance	Description
Pretest	A1B1	0,737	0,05	Normality
	A2B1	0,875		Normality
	A1B2	0,700		Normality
	A2B2	0,135		Normality
Posttest	A1B1	0,804		Normality
	A2B1	0,389		Normality
	A1B2	0,473		Normality
	A2B2	0,091		Normality

Based on the statistical analysis of the normality test that has been carried out using the Kolomogorv Simirnov test, all pretest and post-test data on leg muscle power are obtained from the results of the data normality test significance value  $p > 0.05$ , which means the data is normally distributed.

**Table 3. Homogeneity Test**

Levene Statistic	df1	df2	Sig.
0,973	1	20	0,426

Based on the statistical test analysis of the homogeneity test that has been carried out using the Levene Test, it shows that the calculation result of the significance value of  $0.426 \geq 0.05$ . This means that the data group has a homogeneous variant. Thus the population has a similar variant or homogeneity.

Research hypothesis testing is carried out based on the results of data analysis and interpretation of Anova Two-Way analysis. The sequence of hypothesis testing results adjusted to the hypothesis is presented as follows.

#### 1. There is a Difference in Effect between Plyometrics and Weight Training on Limb Muscle Power

The first hypothesis is "there is a difference in the effect of plyometrics and weight training on leg muscle power". Based on data analysis, the results are shown in Table 4 below.

**Table 4. Test Results of the Effect of Plyometrics and Weight Training on Limb Muscle Power**

Source	Type III Sum Of Square	Df	Mean Square	F	Sig
Exercise Model	322,667	1	322,667	208,172	0,000

From the Anava test results in table 8 above, it can be seen that the significance value of  $p$  is 0.000 and the  $F$  value is 208.172, because the significance value of  $p$  is  $0.000 < 0.05$ , this means that there is a difference in the effect of plyometric and weight training on leg muscle power.

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**2. There is a Difference in the Effect between Volleyball Players Who Have High and Low Limb Muscle Endurance on Limb Muscle Power**

The second hypothesis is "there is a difference in the influence between volleyball players who have high and low leg muscle endurance on leg muscle power". Based on data analysis, the results are as follows:

**Table 5. Test Results of the Effect between Volleyball Players Who Have High and Low Limb Muscle Endurance on Limb Muscle Power**

<i>Source</i>	<i>Type III Sum Of Square</i>	<i>Df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig</i>
Leg muscle endurance	37,500	1	37,500	24,195	0,000

Based on the results of the Anava test table 9 above, it can be seen that the significance value of p is 0.000 and the F value is 24.95 because the significance value of p is 0.000 < 0.05, this means that there is a difference in influence between volleyball players who have high and low leg muscle endurance on leg muscle power.

**3. There is an Interaction between Plyometrics and Weight Training and High and Low Limb Muscle Endurance with Limb Muscle Power**

The third hypothesis is "there is an interaction between plyometrics and weight training and high and low leg muscle endurance with leg muscle power". Based on data analysis, the results are shown in Table 6 below:

**Table 6. Results of Interaction Test between Plyometrics and Weight Training and High and Low Limb Muscle Endurance with Limb Muscle Power**

<i>Source</i>	<i>Type III Sum Of Square</i>	<i>Df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig</i>
Exercise Model * Leg muscle endurance	32,667	1	32,667	21,075	0,000

Based on the Anava test results in table 10 above, it can be seen that the significance value of p is 0.000 and the F value is 21.075 because the significance value of p is 0.000 > 0.05, this means that there is an interaction between plyometric training and weight training and high and low leg muscle endurance with leg muscle power.

The discussion of the results of this study provides further interpretation of the results of the analysis that has been stated. Based on hypothesis testing, there are two groups of analysis conclusions, namely: (1) there is no significant difference in influence between the main factors of the study; and (2) there is no significant interaction between the main factors in the form of two-factor interaction. The discussion of the analysis results can be presented further as follows:

**1. There is a Difference in Effect between Plyometrics and Weight Training on Limb Muscle Power**

Based on the results that have been found that plyometrics training and weight training there are significant differences in influence. This study has revealed a significant effect of plyometric training and weight training on leg muscle power. Plyometric exercises have been shown to be effective in increasing leg muscle power. A study by Arif & Alexander showed that plyometric training produced significant improvements in explosive power, speed, and jumping ability in leg muscle power (Arif & Alexander, 2019). Another study conducted by Sutimin et al found that plyometrics training significantly increased leg muscle strength and explosiveness in volleyball athletes (Sutimin et al., 2021). Plyometrics works by utilizing rapid and explosive muscle contractions (Sabillah et al., 2022). This exercise involves movements that optimize the ability of muscles to produce maximum strength in a short time (Juntara, 2019). Plyometrics also uses elastic energy in muscles and tendons to increase muscle power (Mertayasa et al., 2016).

The research obtained also shows that weight training can contribute to increasing leg muscle power. Weight training aims to increase muscle strength and density through the use of external resistance such as dumbbells, barbells or through weights on

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the athlete's self (Kurniawan & Syakib, 2022). When viewed from the training program that has been compiled, the plyometrics training model that is packaged is still classified as general, there are no specifications for training that are converted to techniques in volleyball. While plyometrics training is a power exercise that can be used at a special periodization stage, while here the author does the training program has not entered the special period stage, then in this one year the event that was followed did not exist so that the training program compiled was still general in nature and was to develop physical abilities not to improve. Then, weight training is the basis for forming good strength, if the strength is already owned by the athlete, of course, in further programs will get maximum results to increase power. The average volleyball player used is a beginner volleyball player and is still minimal in participating in matches.

Research shows that both plyometric training and weight training have a significant effect on leg muscle power. Plyometric training tends to be more effective in improving explosive power, speed, and jumping ability, while weight training aims to improve maximal strength and muscle explosiveness. The combination of these two types of exercises can also provide optimal benefits for increasing leg muscle power.

### **2. There is a Difference in the Effect between Volleyball Players Who Have High and Low Limb Muscle Endurance on Limb Muscle Power**

Based on the results that have been found that high and low leg muscle endurance on increasing power has a significant difference. Basically, leg muscle endurance is the ability of leg muscles to last for a long time, such as in activities that require physical endurance and not only rely on muscle strength and power alone (Walker et al., 2017). Meanwhile, leg muscle power is the ability of the leg muscles to produce high forces in a short time, such as when jumping or jumping to do smash (Chandra & Mariati, 2020). Although the two concepts are different, it is possible that there is a relationship between the two. For example, increasing leg muscle endurance can help athletes maintain leg muscle power for longer, thereby improving the quality of performance while playing volleyball (Suchomel et al., 2016).

Several studies have shown that there is a difference in the effect between volleyball players who have high and low leg muscle endurance on leg muscle power. A study conducted by Adhi et al; Supriyanto showed that there was no significant difference in the effect of plyometric training on leg muscle power between volleyball players who had high and low leg muscle endurance (Adhi et al., 2017; Supriyanto, 2018). Increasing leg muscle endurance is still important to improve the overall performance of volleyball players. Because, good leg muscle endurance can help volleyball players to play longer, improve the ability to perform volleyball technical movements, and help prevent injuries (Saputra & Aziz, 2020). Therefore, plyometric and weight training exercises can be combined with leg muscle endurance training, to achieve a balance between leg muscle power and leg muscle endurance (Arazi & Asadi, 2011).

Good leg muscle endurance can help improve a volleyball player's overall performance (Kim & Park, 2016; Wang et al., 2022). Therefore, the combination of plyometric and weight training exercises with leg muscle endurance training can be the right choice to achieve a balance between leg muscle power and leg muscle endurance (Fathi et al., 2019; Vetrovsky et al., 2019). In addition, it is important to pay attention to other factors that can affect the effect of plyometric and weight training on leg muscle power in volleyball players. These factors include the type of exercise used, the intensity and volume of training, the duration of training, the frequency of training, as well as the physical characteristics and health conditions of volleyball players (Komarudin, 2021; Litardiansyah & Hariyanto, 2020; Ramirez-Campillo et al., 2018).

### **3. There is an Interaction between *Plyometrics* and *Weight Training* and High and Low Limb Muscle Endurance with Limb Muscle Power**

Based on the results that have been found there is an interaction of plyometrics training and weight training on high and low leg muscle endurance, it can be said that there is no significant interaction. Plyometric exercises and weight training can provide optimal benefits when combined by considering the level of individual leg muscle endurance (Makhlouf et al., 2018). Players with high leg muscle endurance can benefit from weight training aimed at increasing leg muscle power (Indrawan et al., 2021). Conversely, players with low leg muscle endurance can integrate plyometric exercises to improve their explosive movement capabilities (Hammami et al., 2022).

These results are indicated by pairs that have interactions or pairs that are significantly different (significant) are: (1) A1B1-A2B1, (2) A1B1-A2B2, (3) A2B1-A1B2, (4) A2B1-A2B2, (5) A1B2-A2B2. While the other pairs declared to have no difference in influence are: A1B1-A1B2. From the results of the interaction form, it appears that the main factors of research in the form of two factors show significant interaction. In the results of this study, the interaction means that each cell or group has a difference in the effect of each paired group.

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### IV. CONCLUSIONS

Based on the results of the research and the results of data analysis that has been done, the following conclusions are obtained.

(1) There is a difference in the effect of plyometric training and weight training on leg muscle power, (2) There is a difference in the effect between volleyball players who have high and low leg muscle endurance on leg muscle power, (3) There is an interaction between plyometric training and weight training and high and low leg muscle endurance with leg muscle power.

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## Developing the Types of Exercise to Improve the Agility of Wheelchair Badminton Athletes



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**ABSTRACT:** This study aims to produce a developing product of exercise types to improve the agility of disabled badminton athletes. This research and development is conducted by adapting development research steps as follows: (1) preliminary studies, (2) initial draft design, (3) initial draft validation and revision, (4) small-scale trials and revisions, (5) large-scale trials and revisions, (6) final products, and (7) effectiveness tests. Small-scale trials were conducted at NPC of Bantul, and large-scale trials were conducted in the NPC of Yogyakarta Special Region. The effectiveness test was conducted in NPC of Yogyakarta Special Region. The data collection instruments used were: (1) interview guideline, (2) questionnaires, (3) and effectiveness test instruments in the form of performance tests. The effectiveness test used a zig-zag run modification instrument. Data were analyzed quantitative descriptive on the assessment scale, t-test on effectiveness test and qualitative descriptive on product assessment input and interview results. The results showed that: (1) Types of exercise to improve the agility of wheelchair badminton athletes with development stages starting from: (a) preliminary studies, (b) developing initial products; expert validation (materials and media) and revisions, (c) product trials; small-scale trials/ revisions and large-scale trials/ revisions, and, (d) product effectiveness tests. The final product in this study is a book entitled "Types of Agility Exercises for Wheelchair Badminton Athletes". The product produces ten types of agility exercises for wheelchair badminton athletes. (2) The types of exercise to improve agility for wheelchair badminton athletes based on a material expert assessment of 81% is in the very good/ very feasible category and a media expert assessment of 80%, is in the good/ feasible category. (3) Types of exercise to improve agility for wheelchair badminton athletes is effective with a p value < 0.05 and an increase of 8.73%.

**KEYWORDS:** types of exercise, para-badminton athletes, wheelchair.

### INTRODUCTION

One of the most high-profile disability events in the world is the Paralympics, which features different classifications for athletes with disabilities. The purpose of the Paralympics is to promote human understanding and friendship [1]. Badminton is also played in this Paralympic Games. Badminton athletes who compete in this event are usually called para-badminton, each athlete will be classified based on his disability (classifier). According to the international Paralympic committee, there are six classes in badminton, namely: WH 1, WH2, SL 3, SL 4, SUI 5 and SS 6. More specifically, badminton in the Paralympic Games has the following categories (1) WH 1 (Wheelchair/ severe impairment), (2) WH 2 (Wheelchair/ minor impairment), (3) SL3 (Standing/ lower limb impairment/ minor), (4) SL4 (Standing/lower limb impairment/severe), (5) SUI5 (Standing/ upper limb impairment), (6) SS6 (Standing/ short stature).

In badminton, a number of factors, including physical, technical, tactical, and mental, help the players realize their potentials. Physical ability is a very significant and dominant factor that badminton players need to have [2]. To play badminton at a high level, there must be favorable circumstances in various fields. The competitive sport of badminton demands physical readiness, technique, tactics, mentality, and maturity of a champion [3].

Athletes are encouraged to perform better with a variety of biomotor. [4] It lists strength, agility, endurance, speed, coordination, and flexibility as common features of biomotor motion. Agility, on the other hand, is a key biomotor in badminton, where it plays a fairly dominant role in improving athletes' abilities. Agility is a part of fitness, a person's agility will have an impact on his overall fitness. This is in accordance with the statement[5] that coordination, balance, speed, agility, strength, and response time are important elements of physical fitness. [6] stating that to walk with high agility is required to be physically fit. A badminton player will be better at anticipating an upcoming shuttlecock the earlier he develops a move of high dexterity.

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Based on the description above and the results of observations made at the National Paralympic Committee of Yogyakarta Special Region, the researchers compiled a form of Exercise to improve the agility of badminton athletes with wheelchair disabilities.

### METHOD

In this study, research with the development of Research and Development is used to produce a certain product. Then, the effectiveness of the product is tested [7]. The procedures developed by [7] are used in the design of this study, namely: Introduction Stage (1), Planning Stage (2), Planning and Revision Validation (3), Trials carried out with small-scale trials/small-scale revisions and large-scale trials/large-scale revisions (4), Final Products (5), and Conducting Effectiveness Tests (6). The research subject in this study is the target who will use the products, which are wheelchair badminton athletes.

### DISCUSSION

Experts in the subject matter conducted an evaluation by using a questionnaire. The modified Likert scale is used as a measurement system. The results of the material expert's assessment on the types of exercise to improve agility for wheelchair badminton athletes are presented in Table 1 as follows.

**Table 1. Data on material expert validation results in the Agility Exercise Types for Wheelchair Badminton Athletes Book**

No	Aspect	Rill Score	Max Score	Percentage	Category
1	Materials Quality	50	60	83%	Very Good/ Very Feasible
2	Content	84	105	81%	Very Good/ Very Feasible
Total		134	165	81%	Very Good/ Very Feasible

Table 1 above shows the results of the assessment of material experts in the types of exercise to improve the agility of wheelchair badminton athletes, which is 83% for aspects of material quality included in the very good/ very feasible category, and 81% for aspects of content included in the very good/ very feasible category. Expert opinions and input on the results of validation are evaluated based on the results of validation after the material expert evaluates the developed product. The material expert's assessment of training form products to improve the agility of wheelchair badminton athletes has been made very feasible to be tested on a small scale as well as a large scale.

The assessment was carried out by media experts using a questionnaire. The measurement scale used is a modification of the Likert scale. The results of the material expert's assessment on the form of training to improve agility for wheelchair badminton athletes with are presented in Table 2 as follows:

**Table 2. Media Expert Validity Results Data in Agility Exercise Types for Wheelchair Badminton Athletes Book**

No	Aspect	Rill Score	Max Score	Percentage	Category
1	Cover Design	11	15	73%	Good/Feasible
2	Content Design	45	55	81%	Very Good/ Very Feasible
3	Size	4	5	80%	Good/ Feasible
Total		60	75	80%	Good/ Feasible

Table 2 above shows the results of the assessment of media experts in the types of Exercises to improve the agility of wheelchair badminton athletes, namely 73% for aspects of cover design into the category of very good/very feasible 81% for aspects of content design into the category of very good/very feasible, and 80% for aspects of size into the category of good/feasible. Expert opinions and input on the results of validation are evaluated based on the results of validation after the material expert evaluates the developed product. The material expert's assessment of training form products to improve the agility of wheelchair badminton athletes has been made very feasible to be tested on a small scale as well as a large scale.

In the t-test analysis using paired sample t test ( $df = n-1$ ), namely to ascertain whether there is an increase in agility between pre-test and post-test. If  $t \text{ count} > t \text{ table}$  and the sig value is less than 0.05 ( $\text{Sig} < 0.05$ ), then the conclusion of the study is considered significant. The following table shows the results of the effectiveness test between the pre-test data as follows.

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In the t-test analysis using paired sample t test ( $df = n - 1$ ), namely to ascertain whether there is an increase in agility between pre-test and post-test. If  $t_{\text{count}} > t_{\text{table}}$  and the sig value is less than 0.05 ( $\text{Sig} < 0.05$ ), then the conclusion of the study is considered significant. Table 3 shows the results of the effectiveness test between pre-test and post-test data as follows:

**Table 3. T test of pre-test and post-test agility**

Data	Mean	T count	Sig.	$t_{\text{table}}$	Difference	Percentage
Pre-test	16.73	9.939	0.000	2.306	1.46	8.73
Post-test	15.27					

The results of the t test in table 3 above show that there is a significant difference between pre-test and post-test, with a t value of  $9.939 > t_{\text{table}}$  ( $df = 8$ ) 2.306 and a significance value of  $0.000 < 0.05$ . After athletes received a form of agility training for wheelchair disabled athletes, their average post-test agility score decreased to 15.26 seconds from the average pre-test agility score of 16.73 seconds. Based on these results, it can be said that wheelchair athletes with disabilities benefit from agility training because their agility increases by 8.73%.

### CONCLUSION

Based on the results of the analysis, it can be said that the product, which is the book related the agility exercise types for wheelchair badminton athletes can be practiced and are feasible to be used. The form of the exercise consists of 10 forms. The assessment of media experts gets a percentage of 80% in the good/feasible category, while the assessment of material experts gets a percentage of 81% in the very good/very feasible category. With a p value of  $< 0.05$  and an increase of 8.73%, this form of agility exercise for wheelchair badminton athletes is effective for improving their agility.

In an effort to produce effective exercise results, the use of media in this case reference books in the form of agility exercises for wheelchair badminton athletes plays an important role. The potential senses of athletes can be accommodated by the media in the form of books so as to improve exercise results. It is in accordance with the statement made by [8] that the nature of multimedia which is a combination of various elements of media which includes text, graphics, and animation is one of the superior qualities that are able to improve learning outcomes.

The book in the types of agility exercise for wheelchair badminton athletes can also be an exercising guide so that athletes do not experience boredom and saturation during training. It is reinforced by the results of the study, namely the physical condition training model of football referees that varied training models can make athletes not feel bored. In addition, a study by [9] find an association between the performance of wheelchair badminton athletes with physical fitness. According to the research, a zig-zag running modifier can improve the agility of wheelchair badminton athletes.

The results of the study with the output of exercise types items for wheelchair badminton athletes prioritize the physical condition of athletes' agility. If a coach wants to offer an agility exercising program, he or she needs to have a deeper understanding of the variations and types of exercise so that the athlete can easily develop his or her agility. In addition, agility exercises specific to the sport of badminton are well based on the energy system used in the sport and the characteristics of the sport movement. [10] It is feasible for a person to learn or improve movement in a technique in a sport that he is interested in through exercise, in accordance with the statement that exercise is a person's way to boost his potential. Exercise is a series of activities that are carried out progressively and regularly with the aim of improving the performance and abilities of an athlete. So that athletes do not get bored during exercising because there are many types of agility exercises. Badminton is one of the sports that are very popular by the community, therefore it needs to continue to be developed by everyone, especially in terms of coaching and community coaching as a foundation for talent development in the future.

Traits that indicate a change of direction forward, sideways (right-left), backward, or turning and turning are constant features of agility exercising methods. There are differences in agility exercising methods for each sport of course. As a result, coaches must be fully aware of the agility requirements in the sport they are going to train in.

The types of exercising developed also in addition to adding diversity to the types of disability training also aims to add the insight of a coach and athlete, so that athletes and coaches have a broader insight in developing the form of agility exercising in wheelchair badminton athletes so that it easier for them to achieve the expected training program goals.

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## Filipino in Periodismo: Analyzing the Common Practices of Tabloid Writers in News Writing Using Filipino Language



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**ABSTRACT:** This study is about the Filipino language in the field of journalism. The issue of spelling and guidelines in writing poses a great challenge to the National Language, which is why this study focuses on spelling in Filipino in writing news articles in tabloids. Using the Structuralism and Formalism concepts, 60 news articles from six (6) tabloids were analyzed based on the guidelines set in the *Manwal sa Masinop na Pagsulat (MMP)* (Manual on Proper Writing) by the Commission on the Filipino Language (Komisyon sa Wikang Filipino (KWF)) to determine the spelling and writing techniques used in tabloid news articles. In order to achieve the main objective of this paper, the researcher considered these steps: first, the news articles were analyzed through coding analysis based on the existing guidelines in the MMP; second, organized the coded data according to the MMP rules; lastly, six journalists were interviewed to determine the foundations of their practices in using Filipino language when writing news articles. In the researcher's analysis, it was found that almost all of the corpora used in tabloids conform to the guidelines recommended by the KWF's MMP. Although there are some words that do not fully conform to the guidelines, particularly those related to consonant clusters, substitution of E with I, O with U, and the use of hyphens. In the interviews conducted, it was revealed that the bases of the six journalists in using Filipino in writing news articles in tabloids is based on the readers' knowledge and familiarity in selecting and spelling words. Even tabloid editors still have the final decision on whether or not to accept the selected spellings of words. After getting the result, it is recommended to have a set of guidelines that all writers should follow to promote uniformity and standardization in writing in Filipino. This way, readers, especially students, will have a better understanding of proper spelling and writing in Filipino.

**KEYWORDS:** Tabloid, Journalism, News, Corpus, Coding, Filipino, Manwal sa Masin na Pagsulat (Manual on Proper Writing), Spelling Guide

### INTRODUCTION

In present times, mass media has strong influence in various aspects of human learning. Mass media plays a significant role in the family, community, religion or belief, and education (Tuazon). It serves as a channel or mechanism to communicate information that members of society should possess. One of the effective communication channels is reading materials or publications like newspapers or periodicals. Before television and radio emerged as a means of delivering information, newspapers were the primary medium of disseminating information to the public. It served as the eyes and ears of the society. Until now, even though various channels, and platforms have become rampant, newspapers and periodicals remain efficient because many people patronize them. Some people can be observed reading newspapers while they wait in public spaces or on public transportation, sip coffee at restaurants and workplaces, or in other settings (Danesi, 2002). The influence of newspapers on society cannot be denied because it is part of daily life. The traditional or common nature of newspapers in communication as a source of local, national, or even international news for readers is noticeable (Pandey, 2010). Newspapers are also an essential factor in implementing and communicating government policies and regulations (Onwubiko, 2005). They also serve as a reference and basis for daily news to promote awareness among ordinary citizens, employees, and students.

Newspapers are typically classified into two types—broadsheets and tabloids. While both provide information to the public, they have distinct characteristics and formats that set them apart. For example, broadsheets are typically larger in size compared to tabloids. Language is also a primary distinguishing factor between the two, with English being the language used in broadsheets and Filipino/vernacular in tabloids. Tabloids are often referred to as "newspapers for the masses" due to their use of Filipino language. Even though broadsheets have a bigger circulation than tabloids, many Filipinos find tabloids to be more appealing (Florendo et al., 2003).

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The role of language in journalism is important. According to Reah (1998), all information and details contained in periodicals are conveyed through language as a medium of communication. In writing news, language serves as an element in storytelling, sharing opinions, and conveying the feelings of others. Language is one of the bridges that enables us to communicate and receive messages from others. The proper selection and use of words greatly affect not only the meaning of the message but also the word form recognition of the person directly receiving the words or statement. The use of words in a statement is complicated as it has a significant effect not only on the message but also on the learning and knowledge of the person receiving the message. This is crucial in the media since word usage by journalists varies greatly and frequently leads to misunderstandings and word misuse.

Language is the primary tool of journalists and writers in tabloids to make their news, articles, and editorials effective. The role of journalists or writers is critical because if the use of language in writing news is not clear and proper, it will surely have an impact on the readers in how they use and interpret language. Virgilio Almario, Chairman of Commission on Filipino Language (Komisyon sa Wikang Filipino) compared good writing to excellent driving - that the writer should possess the same level of competence and handling expertise as a skilled driver to avoid causing issues or errors for readers or others.

*Kung ang magandang pagsulat ay may kaugnayan sa pag-imbento ng higit na mahusay na modelo ng kotse, ang masinop na pagsulat ay may kaugnayan lámang sa wastong pagmamaneho ng kotse. Tulad ng kotse ang wika. Tulad ng wika, hindi basta nagagamit ang kotse. Kailangang maalam ang tsuper sa pagpapaandar ng makina. Kailangang alam niya ang mga bahagi ng kotseng ginagamit sa pagmamaneho. Kailangang alam niya ang mga batas sa pagmamaneho upang hindi mabangga, makasagasa, o maaksidente. At upang hindi mahúli ng pulis (o editor?) dahil sa malaki man o munting paglabag sa batas trapiko (Virgilio Almario, 2014)*

*(If good writing is related to inventing a better car model, proper writing is only related to proper driving of the car. Like a car, language is not just a tool that can be used carelessly. The driver must be skilled in operating the machine, know the parts of the car used in driving, and be familiar with traffic laws to avoid collisions, hitting pedestrians, or having an accident. And to avoid being caught by the police (or editor?) for big or small traffic violations. (Virgilio Almario, 2014))*

Virgilio Almario's statement clearly explains that writing requires knowledge and mastery of the laws and rules of writing. Just like writers and journalists who write news in newspapers, particularly in tabloids, there is a high demand for proper writing because the meanings and concepts used in words are imprinted and ingrained in the minds of readers. Therefore, the focus of this study is on conventional writing habits, namely how Filipino words are written and spelled rather than word selection for captivating headlines. This can be considered one of the gaps in the study because many studies on tabloids usually focus on writing style as a form of sensationalism.

### Tabloid usage of Filipino

The use of Filipino language in tabloids has a significant impact on readers' language acquisition. In 2014, Bueza mentioned that the Filipino words used by tabloid journalists often have incorrect spelling or usage. The mentioned incorrect usage or spelling of words in Filipino, as pointed out by Bueza, which is commonly committed by media practitioners in newspapers, television, and online platforms, are based on the gathered words from the Komisyon sa Wikang Filipino (Commission on the Filipino Language). For example, the word "kung saan" (wherein) is frequently read and used by tabloid writers when reporting on police beats. For instance, "natagpuan ang labí ng isang lalaki sa kanto ng llang-ilang kung saan siya huling nakita" (the remains of a man were found in the corner of llang-ilang where he was last seen). In this sentence, the word "kung saan" is used to specify where he was last seen. While the meaning may be clear to the readers, a closer analysis reveals that its usage within the sentence is incorrect, as the term "kung saan" should only be used when the location is uncertain. For example, "hindi natin alam kung saang lupalop pinulot ng ating broadcasters ang kakatuwa nilang gamit ng kung saan" (we do not know from where our broadcasters picked up their amusing use of 'kung saan'). Aside from this particular word, tabloids also contain frequent misspellings such as "iba't-iba" instead of "iba't iba" (various), "kumpanya" instead of "kompanya" (company), and many others. According to Rappler's (2017) findings, commonly used words in tabloids include "aspeto" instead of "aspekto" (aspect), "imahe" instead of "imahen" (image), and the correct use of hyphens ("-") as seen in the word "de kalidad" (of quality) instead of "de-kalidad," as well as words derived from English, such as "i-(English word)." These are just a few examples of the many incorrectly used and misspelled words that can be found in tabloid publications.

Kilates (2013) emphasized in his article titled *Confused use of Filipino in Media perpetuates errors* that even a small grammatical or usage mistake, especially in the media, can lead to a complicated situation. This is not only because the information presented by news reporters may be incorrect, but also because the use of language and the way of expression itself can be erroneous.



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Kilates (2013) listed several Filipino terms that are commonly misused by many. One example is the frequent use in the media of the word "kagampan" or "kaganapan." According to him, it is important to understand that "kaganapan" means the fulfillment or realization of something, which can be translated as "fulfillment" in English. However, it is noticeable that journalists often use this word when the more appropriate term would be "pangyayari" or "event." Kilates regarded this habitual usage by news reporters as comical because they believe that the sound of this word is more appealing to listeners and viewers.

In Bueza (2014) report, he enumerated the Filipino terms that are frequently misused by authors, journalists, and other media professionals in newspapers, radio, and television. Bueza based his report on the lists of erroneous word usage in the media compiled by the Komisyon sa Wikang Filipino (KWF), the government agency authorized to promote the correct usage of the Filipino language and other languages of the Philippines. The KWF not only serves as the authority on the Filipino language but also disseminates proper spelling and grammar through its publications and programs. Some of the words listed by the KWF include the following:

1. "dyaryo" vs. "diyaryo" – This word carries a diphthong 'ia' in its original form from Spanish, *diario*. According to the national orthography, in the case of diphthongs, the 'ia' is shortened to 'y.' Since there is no 'dy' cluster in Filipino, the correct spelling is "diyaryo."
2. "kaganapan" vs. "pangyayari" – It is a common mistake for journalists to use "kaganapan" when referring to events or occurrences. However, "kaganapan" means the fulfillment or completion of something, akin to the English term "fulfillment." The appropriate term to use when referring to events is "pangyayari."
3. "sa pagitan ng" – This phrase is a result of "Englishism" or following the sentence structure of English when translated into Filipino.
4. "aspeto" vs. "aspekto," "imahe" vs. "imahen" – The translations "aspeto" and "imahe" are incorrect. From their original forms in Spanish, which are *aspecto* and *imagen*, the correct spelling and translation should be "aspekto" and "imahen."
5. Hyphen (-) – The use of a hyphen is correct when combining affixes and English terms, such as "i-ban" (to ban) or "naka-SUV" (riding an SUV).

Meanwhile, in 1994, the Sentro ng Wikang Filipino (Center for Filipino Language) of the University of the Philippines initiated the Bantay-Wika (Language Watch) project to monitor the usage and development of the national language throughout the Philippines, particularly in the field of media. The project aims to observe the emergence of new words in the Filipino vocabulary, particularly in tabloids. As part of this project, a weekly transcription of articles written in Filipino from six widely circulated tabloid opinions is conducted. As a result, Bantay-Wika has recorded numerous and varied misspellings or orthographic variations of Filipino terms found in these articles, including issues such as the removal of /u/ in /uw/ in words like "kuwento/kwento" and /o/ versus /u/ in "kumpanya/kompanya," and others (Ilao, et al. 2011).

In Paul Morrow's (2013) article, "Speaking Proper Filipino," it is explained that many Filipino media practitioners use words to construct their articles without even consulting a dictionary when attempting to use the correct Filipino word. Morrow further mentioned the disagreement of linguists with political journalists and even academics when they use words that cannot be determined whether they originated from Spanish or English. This often occurs when they attempt to use what they believe to be correct terms in Filipino. Morrow listed these words, which Almario referred to as "siyokoy" words, such as *aspeto*, *konsernado*, *kontemporaryo*, *dayalogo*, *pesante*, and *prayoridad*.

The aforementioned studies serve as empirical evidence highlighting the conspicuous linguistic errors made by journalists in their utilization of the Filipino language. These errors manifest themselves at the orthographic level, pertaining to spelling, as well as in the careful selection of appropriate vocabulary. As elucidated in the earlier cited scholarly investigations, such linguistic usage patterns and readers' understanding and interpretation of the information transmitted by the media are significantly correlated.

### Language of Mass Media

In the domain of language, discourse, and media, it is widely acknowledged that apart from the content of the news, the choice of words employed by the writer in their reporting or communication significantly impacts the comprehension of news readers or listeners. This sentiment is conveyed by Pisarek (1983) in his statement:

The lexical surface of the language of a journalistic text reflects and at the same time impresses upon a reader a specific image of the world and attitude towards reality.

Based on the underlying meaning of Pisarek's statement, it becomes evident that in the selection of words, writers make decisions on how to present and enable readers to comprehend the information they are conveying.

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According to Fairclough (1995), the various uses of words originate from or are based on different ideological positions. Van Dijk (1988), on the other hand, asserts that most of the words used in newspapers are considered "opinion-controlled lexical choices." In connection with this, he further adds that the perspective and ideology of the journalist also have a significant influence, as expressed in his statement:

Lexical and semantic implications may involve evaluations based on the point of view and the ideology of the reporter.

Meanwhile, Roger Fowler's observations support the concepts of Fairclough and Van Dijk regarding the relationship between language and ideology. According to Fowler (1991), information presented in newspapers often relies on a particular ideology and perspective. He further contends that any expressions, whether oral or written, are conveyed based on a specific ideological position. As a result, the language used does not serve as a means to provide clarification of the message; instead, it can lead to deviation or misinterpretation.

In Fowler's perspective, it is implied that the significance of the "mode of presentation" is equivalent to the importance of "what is being presented" due to the linguistic elements attached to the words used. In relation to this, he emphasized that the process of selecting words in expression becomes natural (unintentional) as a result of the existing perspectives or ideologies of journalists or writers in reporting, while readers and listeners passively receive and utilize the words and information. Because of this, He regarded the idea of taking into account the grammatical and linguistic components of the words used in a presentation as a significant idea.

Through the review of literature and studies, the relationship between various aspects of language use in the media, particularly in periodicals or other forms of information dissemination platforms, has been analyzed by dissecting the perspectives and viewpoints of different scholars on significant topics in media language. Evaluating these perspectives of media language authors allowed researchers to gain a deeper understanding of the different concepts and ideas encompassed within the subject matter. The reviewed related studies and literature emphasized the manner in which language is used in the media, which affects the essence of the presented news, the readers' comprehension, and the intellectual and standardization aspects of the language itself. As stated by Bird (2002), in the essence of news writing/reporting, the style of language use influences the storytelling element, particularly in conveying various emotions such as joy, sadness, surprise, and fear. Broersma (2007) further added that the style in journalism is a choice ranging from the role in journalism to the role in the language used.

### **The Media from a Linguistic Perspective**

Thornborrow (2005) highlights a significant and intriguing aspect of the media's potential from a linguistic perspective, which pertains to how events are reported. According to Thornborrow, the media provides various means for individuals to access a vast amount of information and demonstrates the capacity of a powerful societal force.

Similarly, Prokopova's (2008) analysis of tabloid discourse or language reveals that tabloids constitute a distinct genre, deviating from conventional forms of writing. Tabloids lack the typical characteristics associated with formal writing. The language of tabloids can be considered a combination of written and spoken forms. Prokopova's analysis adopts a linguistic approach rather than a sociolinguistic one, focusing on the examination of lexical and grammatical structures. The primary objective of her study is to provide a qualitative understanding of the linguistic style of tabloids and its impact on readers.

In Reyes' (2010) study on Tagalog headline grammar, he examines the rules and characteristics of English and Tagalog headlines. He discovers that both English and Tagalog headlines share certain characteristics such as various forms of ellipsis and omissions, but they differ in sentence formation and aspects of verbs. Reyes also gathers 100 Tagalog headlines from four different Tagalog newspaper websites, namely Abante, Tonite, Radio Mindanao Star Ngayon, and Inquirer Libre. In his analysis of the collected corpora, he considers two important processes: (1) engaging in conversations with proficient Tagalog speakers and (2) comparing Tagalog headline grammar with the study conducted by Schachter and Otones (1972) on Tagalog grammar.

These aforementioned studies within the existing linguistic perspective on media elucidate how the media provides linguists with extensive access to study the characteristics, evolution, and variation of a particular language used in the media. The current study, focusing on the emerging use of the Filipino language in tabloid newspapers, contributes to the body of research on the linguistic examination of media.

### **OBJECTIVES**

The researcher's experience in reading newspapers was one of the reasons why this research was conducted. The primary objective of this study is to analyze the common practices of journalists in using the Filipino language in writing news articles for tabloids. Specifically, are the followings:

1. to identify the common practices of tabloid writers in writing news;

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2. to find out the basis of the knowledge of tabloid writers in spelling or writing news in the Filipino language; and
3. to determine whether the common practices of tabloid writers in accordance with the guidelines in the Manual on Proper Writing of the Commission on the Filipino Language, a legitimate language agency in the country responsible for setting language laws and guidelines.

### METHODOLOGY

In this paper, the researcher utilized a mixed method approach. According to Creswell (2007), mixed method refers to an approach in which qualitative and quantitative methods are combined in a single study. This allows for the collection, analysis, and interpretation of both types of data, thereby yielding a more comprehensive understanding of the research topic. Creswell emphasizes that mixed methods research entails more than simply collecting and analyzing data from different sources. It necessitates a thoughtful integration of qualitative and quantitative components, such as merging data during interpretation or using one method to inform the design of the other. The aim is to create a coherent and unified study that goes beyond mere data combination, enabling a more comprehensive analysis of the research problem.

In this study, a qualitative approach and a quantitative approach were employed to measure and categorize the corpora gathered from 60 news articles. For quantitative approach, the researcher quantifies the gathered corpora through coding process. For qualitative approach, structuralism and formalism perspectives of Roman Jakobson (1960) were utilized as the critical frameworks, focusing on the analysis of the form or structure of a text (corpus) rather than its content. The study drew heavily on the concept of *langue*, referring to the language system explained by Saussure within structuralism, and the form and style of language used in the text, as explained by formalism. These two main concepts served as the basis for analyzing news articles written in Filipino and published in tabloids.

As what mentioned above, the researcher utilized the method of coding to identify categories, develop concepts, and determine the main topic that encompasses all the gathered concepts. The categories, concepts, and main topic were the outcomes of three coding processes: open coding, axial coding, and selective coding (Strauss & Corbin, 1998).

The primary respondents of this study were tabloid writers who produce written articles for six tabloid newspapers that use the Filipino language. The writers were selected from those who attended series and forums organized by the Komisyon sa Wikang Filipino (Commission on the Filipino Language) on proper usage of the Filipino language in writing.

The researcher also utilized the *Manwal sa Masinop na Pagsulat* (Manual on the Proper Writing) of Filipino by the Komisyon sa Wikang Filipino as a reference for analyzing the corpus as a manual for writing in Filipino. Only ten guidelines were selected as the basis for analyzing the corpus from the 60 news articles obtained from six tabloids with significant circulation in the country—*Remate*, *PangMasa*, *Bandera*, *Pilipino Star Ngayon*, *Pilipino Mirror*, and *Balita*. These six tabloids were also represented by regular attendees of seminars conducted by the Komisyon sa Wikang Filipino on the Filipino language. The news articles written by selected journalists from 2017 to 2018 were analyzed accordingly.

The news articles were analyzed based on the guidelines outlined in the Manual on Proper Writing (MMP), which consists of seventeen (17) sections/rules on spelling and writing in the Filipino language. The researcher only utilized ten (10) sections/rules from the MMP in analyzing the news articles written by tabloid writers.

The following 10 writing rules of the MMP were selected for the following reasons:

1. **Pagbaybay na Pasulat** (Written Spelling). This section includes guidelines on spelling applicable to the writing practices of journalists in tabloids. It is important to include this section in analyzing the traditional practices of writers because it recommends standard guidelines for using eight new letters in Filipino and spelling borrowed words, which are commonly used by writers when writing news articles in tabloids.
2. **Kasong Kambal-Patinig** (Vowel-Diphthong Alternation). This section contains guidelines on spelling words with diphthongs. It is important to include this section in analyzing the traditional practices of tabloid writers because there are often variations in the spelling of certain words, such as "dyaryo" or "diyaryo," "kwento" or "kuwento," and many others (Bueza, 2014).
3. **Kambal-Katinig at Digrapong SK, ST, SH, KT** (Consonant Clusters and Digraphs SK, ST, SH, KT). This section includes guidelines on the case of consonant clusters and digraphs. Although it can still be considered as a respelling, it specifically applies to words that commonly end in SK, ST, SH, KT. It is important to include this section because the use of digraphs is still part of written spelling in Filipino.
4. **Palitang E/I at O/U** (E/I and O/U interchange). This section contains guidelines on spelling certain words that involve the complicated use of E/I and O/U within a word. It is important to include this category in analyzing the traditional practices of tabloid writers because there are often variations in the spelling of certain words, such as "kumpanya" or "kompanya," "pulitiko" or "politiko," and many others (Ilao et al., 2011).

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5. **"ng" and "nang" usage.** This section refers to the rules on the use of "ng" and "nang." It is important to include this section because the usage and meaning of "ng" and "nang" in a sentence differ.
6. **Wastong gamit ng gitling (Proper Use of Hyphen).** This section includes guidelines on the proper use of hyphens. It is important to include this section in analyzing the traditional practices of tabloid writers because the form of hyphen used within a particular arrangement in a sentence or word may vary.
7. **Mga bantas (Punctuation Marks).** This section includes guidelines on the correct use of punctuation marks. It is important to include this section because punctuation marks are not solely focused on writing style. They have appropriate usage depending on the requirements of a sentence or word.
8. **Mga Bilang (Numbers).** This section includes guidelines on writing or spelling numbers. It is important to include this section in analyzing the traditional practices of tabloid writers because there are specific guidelines for writing numbers—when to use them "in figure" or "in words."
9. **Daglat, Inisyals, at Akronim (Abbreviations, Initials, and Acronyms).** This section includes guidelines on writing abbreviations, initials, and acronyms. It is important to include this section in analyzing traditional practices as writers often use abbreviations, initials, and acronyms when writing news as a way to shorten the overall length of the news article.
10. **Mga Pangalan at Katawagan (Names and Terms).** This section includes guidelines on the proper writing of names and terms for people, places, or organizations. It is important to include this section in analyzing the traditional practices of tabloid writers to understand the guidelines for using capital letters to emphasize a name.

### RESULTS OF THE STUDY

#### 1. Spelling Practices in Filipino of Selected Tabloids

##### 1.1 Common usage of the Filipino language by Tabloid *Bandera* writers

The spelling practices in Filipino used by the tabloid *Bandera* were examined based on an analysis of 10 categories (Guidelines), resulting in the identification of 25 codes. Out of the 25 codes, 19 codes or 76% of the total, adhered to or had correct spelling according to the guidelines. However, six codes or 24% of the total, were incorrect or did not follow the rules outlined in the MMP of the Komisyon sa Wikang Filipino (KWF).

The author's writing and spelling practices in Filipino, based on the traditional approach to news writing, revealed that almost all of their practices in writing and spelling Filipino in each category were in accordance with the recommended guidelines of the KWF's MMP. However, three of their writing or spelling practices in Filipino did not conform to the MMP guidelines. These practices included writing "kustodiya" instead of "kustodya," using a space after a preceding sentence, using two dots for ellipsis instead of three dots, and writing proper nouns like "Charter change" and "chief Nicanor Faeldon" without capitalizing "change" and "chief."

##### 1.2 Common usage of the Filipino language by Tabloid *Balita* writers

The spelling practices in Filipino used by the tabloid *Balita* revealed that, based on the conducted examination across 10 defined categories (referred to as "Guidelines"), a total of 48 codes were identified. Among these codes, 43 codes or equivalent to 90% of the total, demonstrated adherence to the prescribed orthographic standards, as outlined in the MMP published by the Komisyon sa Wikang Filipino (KWF). However, five codes or accounting for 10% of the total, deviated from these established guidelines, displaying incorrect or did not follow the rules/guidelines of the spelling manual.

Analyzing the author's writing and spelling practices in Filipino, rooted in the conventional approach to news writing, it became evident that the majority of their practices in writing and spelling Filipino across various categories aligned with the recommended guidelines outlined in the KWF's MMP. Nevertheless, two specific writing or spelling practices deviated from the prescribed MMP guidelines. These practices included the usage of "istasyon" instead of "estasyon" and the inclusion of a hyphen in "20-anyos" where it should not be present.

##### 1.3 Common usage of the Filipino language by Tabloid *PangMasa* writers

The spelling practices in Filipino used by the tabloid *PangMasa* revealed that, based on the conducted analysis across 10 defined categories (referred to as "Guidelines"), a total of 112 codes were identified. Among these codes, 100 codes or equivalent to 89% of the total, demonstrated adherence to the prescribed orthographic standards, as outlined in the MMP published by the Komisyon sa Wikang Filipino (KWF). However, 12 codes, accounting for 11% of the total, displaying incorrect or did not follow the rules/guidelines of the spelling manual.

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Analyzing the author's writing and spelling practices in Filipino, rooted in the conventional approach to news writing, it became evident that the majority of their practices in writing and spelling Filipino across various categories aligned with the recommended guidelines outlined in the KWF's MMP. However, there were five specific writing or spelling practices that deviated from the prescribed MMP guidelines. These practices include:

- Using "hinostage" instead of "binihag" (although the journalist may argue that the translation "binihag" is not exact)
- Using "otoridad" instead of "awtoridad"
- Using "ilgal" instead of "ilegal"
- Using "paksyon" and "direksyon" instead of "paksiyon" and "direksiyon"
- Using "sunud-sunod" and "abug-abog" instead of preserving the letter "o" when repeating
- Using "de motor" instead of hyphenating it
- Using "7 pinaghihinalang" instead of spelling out the number (like "seven") since it is less than ten.

### **1.4 Common usage of the Filipino language by Tabloid *Remate* writers**

The analysis of the orthographic practices employed in Filipino by the tabloid publication *Remate* reveals that, based on the examination of 10 categories (referred to as "Guidelines"), a total of 117 codes were identified. Among these codes, 94 codes or equivalent to 80% of the total, demonstrated adherence to the prescribed orthographic standards, as outlined in the MMP published by the Komisyon sa Wikang Filipino (KWF). However, 23 codes, accounting for 20% of the total, displaying incorrect or did not follow the rules/guidelines of the spelling manual

Examining the author's writing and spelling practices in Filipino, rooted in the conventional approach to news writing, it becomes evident that the majority of their writing and spelling in Filipino across various categories align with the recommended guidelines outlined in the KWF's MMP. However, there are several specific writing or spelling practices that deviate from the prescribed MMP guidelines. These practices include:

- Spelling "kabuang" instead of "kabuoang" because the 'O' is not changed to 'U' in consecutive 'UO' within a word.
- Replacing "O" with "U" even when there is no change in the consonant within the word, as seen in "kumpara" and "bumbero" instead of "kompara" and "bombero."
- Omitting the hyphen in "de edad," which should be "menor de-edad."
- Using "gatlang en or en dash" instead of "gatlang em or em dash" in certain parts of the news, such as "Manila, Philippines – Nasabat."
- Writing "Roa Duterte" in lowercase instead of capitalizing the "p" in "pangulo."
- Writing the initials of "new people's army" in lowercase instead of capital letters.

### **1.5 Common usage of the Filipino language by Tabloid *Pilipino Star Ngayon* writers**

The spelling practices in Filipino used by the tabloid *Pilipino Star Ngayon* reveals that, based on the analysis of 10 categories (referred to as "Guidelines"), a total of 81 codes were identified. Among these codes, 71 codes or equivalent to 88% of the total, demonstrated adherence to the prescribed orthographic standards, as outlined in the MMP published by the Komisyon sa Wikang Filipino (KWF). However, 10 codes or accounting for 12% of the total, displaying incorrect or did not follow the rules/guidelines of the spelling manual.

Examining the author's writing and spelling practices in Filipino, rooted in the conventional approach to news writing, it becomes evident that the majority of their writing and spelling in Filipino across various categories align with the recommended guidelines outlined in the KWF's MMP. However, there are several specific writing or spelling practices that deviate from the prescribed MMP guidelines. These practices include:

- Using "imahe" instead of "imahen."
- Spelling "kontrobersyal" and "korapsyon" instead of "kontrobersiyal" and "korapsiyon."
- Spelling "ganun" instead of "ganoon."
- Using a hyphen in "iba't-ibang" when it should be written without a hyphen.
- Omitting the hyphen in "de edad," which should be "menor de-edad."

### **1.6 Common usage of the Filipino language by Tabloid *Pilipino Mirror* writers**

The spelling practices in Filipino used by the tabloid *Pilipino Mirror* reveals that, based on the analysis of 10 categories (referred to as "Guidelines"), a total of 94 codes were identified. Among these codes, 83 codes or equivalent to 88% of the total, demonstrated adherence to the prescribed orthographic standards, as outlined in the MMP published by the Komisyon sa Wikang

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Filipino (KWF). However, 11 codes, accounting for 12% of the total, deviated from displaying incorrect or did not follow the rules/guidelines of the spelling manual.

Examining the established orthographic practices in Filipino within the tabloid, it becomes evident that the majority of the author's writing and spelling practices in Filipino across various categories align with the recommended guidelines outlined in the KWF's MMP. However, three of their practices deviate from the prescribed MMP guidelines, including:

- Spelling words like "ininspeksiyon" (ininspeksiyon), "inanunsiyo" (inanunsiyo), "aksyon" (aksiyon), and "hurisdiksiyon" (hurisdiksiyon) where consonant clusters were formed due to the removal of the initial vowel. Additionally, the spelling of "nagmamatiyag" is incorrect as there should be no "i" between the /t/ and /y/ sounds.
- Spelling "kumpara" instead of "kompara" and "emosyunal" instead of "emosyonal." The O should not change to U in these words since there are no changing consonants within the word.
- Using a hyphen in "pag-patay" when it should be written without a hyphen.

### Percentage of tabloid writers who adhered to the use of Filipino based on the MMP

Categories (Orthographics rules)	conforming to the MMP		not conforming to the MMP	
	Total	Percentage	Total	Percentage
Category (rule) 1: Pagbaybay na Pasulat (Written Spelling)	6	100%	0	0%
Category (rule) 2: Kasong Kambal-Patinig (Vowel-Diphthong Alternation)	6	100%	0	0%
Category (rule) 3: Kambal-katinig at Digrapong SK, ST, SH, KT (Consonant Clusters and Digraphs SK, ST, SH, KT)	3	50%	0	0%
Category (rule) 4: Palitang E/I at O/U (E/I and O/U Interchange)	5	83%	1	17%
Category (rule) 5: "ng" at "nang" ("ng" and "nang" usage)	6	100%	0	0%
Category (rule) 6: Wastong Gamit ng Gitling (Proper Use of Hyphen)	5	83%	1	17%
Category (rule) 7: Mga Bantas (Punctuation Marks)	3	50%	1	17%
Category (rule) 8: Mga Bilang (Numbers)	6	100%	0	0%
Category (rule) 9: Daglat, Inisyals, at Akronim (Abbreviations, Initials, and Acronyms)	5	83%	1	17%
Category (rule) 10: Mga Pangalan at Katawagan (Names and Terms)	5	83%	1	17%

It has emerged that, from the 10 categories (guidelines) analyzed to elucidate the established practices of six (6) tabloid writers—four (4) of whom achieved a perfect score of 100%—among the six (6) tabloids, there are practices that adhere to the categories or guidelines outlined in the MMP. These categories include: 1) Written Spelling, 2) Vowel-Diphthong Alternation 5) "ng" and "nang," and 8) Numbers. Following closely are four (4) categories (guidelines): 4) E/I and O/U Interchange, 6) Proper Use of Hyphen, 9) Abbreviations, Initials, and Acronyms, and 10) Names and Terms, wherein five (5) out of the six (6) tabloid writers adhered to traditional practices aligned with the guidelines outlined in the MMP. On the other hand, three (3) tabloid writers, or 50% adhered to the category (guideline) 3) Consonant Clusters and Digraphs, and 7) Punctuation Marks, while the remaining three (3) journalists did not utilize these categories in the news articles upon analysis.

### Summary of the Filipino Writing/Spelling Practices in News Writing in Tabloids Based on the Guidelines of the MMP

It has been discovered that tabloid writers employed the following practices when using Filipino in writing news article:

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- a. Borrowed words are written in Filipino spelling, except for "imahe," which should be written as "imahen," and "hinostage," which can be written as "binihag."
- b. The original form is maintained when the word is difficult to immediately respell.
- c. The E is not changed to I at the end of a word and is maintained.
- d. In the word "istasyon" derived from the Spanish "estacion," the E at the beginning is changed to I.
- e. The O at the end of a word is replaced with U if it is followed by a suffix, except for words with double O.
- f. The O is replaced with U when there is a consonant change within the word, except for the words "emosyunal" and "kumpara," which were changed despite no consonant change.
- g. The O is replaced with U in repeated words, such as "sunud-sunod" and "abug-abog."
- h. The word "suspek" (from English "suspect") is written in Filipino without a /t/ at the end.
- i. Words with twin vowels are written in a manner that does not remove the first vowel in the twin vowel if it is in the first syllable.
- j. The first vowel is removed, resulting in a consonant cluster within the word, such as "kontrobersyal," "korapsyon," "kontrobersiyal," "ininspeksyon," "inanunsiyo," "aksyon," and "hurisdiksiyon."
- k. "Nang" is used to indicate manner and time.
- l. A hyphen is used when affixing the borrowed word while retaining its original form.
- m. A hyphen is used to separate the consonant and vowel.
- n. A hyphen is used when a cardinal number is prefixed with "anyos."
- o. A hyphen is used to denote time when the word "alas" is attached.
- p. A non-breaking en dash with space is used between successive sentences.
- q. Numbers are written in numeral form for numbers greater than ten.
- r. Proper nouns are written with capital

### **2. Bases of Journalists' Knowledge in Spelling or Writing in the Filipino Language in Tabloid News**

When it comes to using Filipino in news reporting, a significant portion of tabloid writers' knowledge does not come from any guidebook such as MMP of the KWF; instead, it comes from what they have learned from communication and media programs in college. The writing style of tabloid writers is influenced by their extensive experience and familiarity in writing in Filipino. They also take into consideration the knowledge and familiarity of their readers when selecting and spelling words. Moreover, the decision to accept or reject selected word spellings still lies with the editor. In the end, although they do not directly refer to the MMP, tabloid writers still believe in the necessity of having guidelines that all writers should base and adhere to, in order to achieve consistent and standardized Filipino writing. Through this approach, readers, especially students, will have a better grasp of proper spelling and writing in the Filipino language.

### **3. Adherence to the guidelines of the MMP in the observed spelling practices of tabloid writers**

In general, it has been found that almost all practices in writing and spelling in Filipino of the tabloid writers aligned with the recommended guidelines of the MMP by the KWF. However, there are certain guidelines in the MMP that are not fully followed by the observed practices, particularly in terms of Vowel-Diphthong Alternation and Consonant Clusters and Digraphs. The interchange of E with I and O with U is not consistently applied according to the guidelines. Even in the use of hyphens, while many writers adhere to the recommended practices, there are consistent errors in their usage, such as "anyos" being spelled with a hyphen when it should not have one, while "de edad" and "de motor" should have hyphens.

## **CONCLUSIONS**

Based on the findings of the conducted study on the structure, form, and usage of Filipino in writing news for tabloids, this study presents the following conclusions:

1. Although journalists do not directly consult the MMP of the KWF, the majority of the discovered practices in their use of Filipino in news writing aligned with the recommended guidelines of the MMP by the KWF.
2. The two guidelines in the MMP that are not fully followed by journalists or exhibit inconsistent usage are the guidelines regarding vowel-diphthongs in Filipino and the use of hyphens.
3. Similar to the perspectives of Fairclough (1995) and Fowler (1991) on various ideological positions, the influence of a writer's viewpoint and ideology is significant in their mode of expression. This was also evident in interviews conducted with journalists, where their basis for using Filipino is influenced by what they learned from their studies in media and communication programs during college.

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4. It also emerged that tabloid writers consider the familiarity of readers with spelling or words when using Filipino.
5. Based on the result of the study, the style followed by the publication or the chief editor of the publication also affects the final output.

### RECOMMENDATIONS

Based on the presented conclusions of the study, the researcher suggests the following:

1. The Commission on the Filipino Language (Komisyon sa Wikang Filipino) should intensify its campaign for adherence to the standard guidelines for writing in Filipino as outlined in the MMP. This can be done through the organization of regular forums and seminars for journalists and editors to continuously enhance their knowledge of writing in Filipino.
2. It is also recommended to incorporate teachings and improvements in Filipino language usage and adherence to writing guidelines in communication and media programs in schools and institutions. This would promote consistency and standardized use of Filipino in media. By doing so, the media can contribute to increasing the knowledge of readers, especially students, in proper spelling and writing in the Filipino language.
3. Further, it is suggested to promote the standard guidelines for Filipino in schools, starting with teachers and students, as this is where the foundational knowledge of journalists originates.
4. For future researchers, it is also recommended to conduct studies related to this topic that focus on understanding the level of awareness among journalists regarding the guidelines in the MMP for writing in Filipino.
5. Additionally, exploring the perceptions of newspaper readers regarding standardized writing in Filipino could provide valuable topic for future study.

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## Overview Study on Learner Satisfaction with the Quality of Higher Education in Vietnam in the Period 2013-2023



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**ABSTRACT:** Applying the systematic review method, we found 28 studies on satisfaction with training quality. Screening and excluding inappropriate studies, we have 10 studies that are used for analysis in this article. The results of the analysis show satisfaction studies conducted at an educational institution or a particular discipline. The convenience sampling method along with data collection techniques by email and direct survey is the method used by many selection studies. The type of research the authors used is mainly a cross-sectional study combining quantitative and qualitative. Through the analysis of reliability tests, exploratory factor analysis and multivariable regression, the authors have assessed the impact of these factors on learners' satisfaction with the quality of training create. Through these studies, we find that the factor "Training program" is the factor that has the strongest impact on learners' satisfaction and satisfaction is not affected by characteristics such as gender, age, and other characteristics other points of the learner. Finally, we also noted that in Vietnam, there is no unified model built based on the set of criteria for evaluating the training quality of the Ministry of Education and Training. Therefore, education and training management institutions and experts in this field need to research to come up with an optimal model for assessing satisfaction with the quality of training for learners.

**KEYWORDS:** satisfaction, learners, training quality, higher education institutions, Vietnam

### 1. INTRODUCTION

The decisive factor for the existence and development of an educational institution is the satisfaction of learners with the quality of training. The quality of training must be assessed by current or used learners, not by educational institutions. From the perspective of educational economics, higher education is now considered an important service in providing training services to attract learners to their institution. Improving the quality of training services is a process that needs to be continuously implemented in the development strategy of each higher education institution. Evaluation of service quality through the opinions of learners is very necessary and has been researched by many scientists, educational institution managers, and educational management agencies. Through the results of these studies, educational institutions, management agencies and other interested parties such as families and society have grounds for an objective assessment of whether the products provided to learners meet their requirements and social needs when learners enter the labor market. In Vietnam, there has not been a model built specifically for assessing learners' satisfaction with the quality of training at educational institutions. Previous studies used a toolkit developed on the service quality assessment toolkit of foreign researchers. Therefore, the research toolkit of the studies is not consistent, which leads to the satisfaction assessed at educational institutions being heterogeneous, having no common ground and not applicable to educational institutions of other sex. Therefore, our research goal is to understand and analyze the author's published results and draw out the strengths and limitations of these studies and propose factors that should be used in assessing student satisfaction and which factors are not important.

### 2. THEORETICAL BASIS

#### 2.1. Service quality

Currently, there are many authors who have studied service quality, leading to the concept of service being defined according to the understanding of each author. According to Anh (2019), service is an activity with the purpose of serving human needs and services are heterogeneous, have no physical form, and cannot be separated and stored (p.62). The contact between the supplier and the user, together with the internal activities of the supplier in response to the user's needs, results in the service (ISO 8402,

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2000). According to Grönroos (1984), service quality is made up of three factors: functional quality, technical quality, and corporate image (pp.36-44). Thus, service quality is the result of the user's evaluation of the supplier's product.

### **2.2. Education Quality**

Authors Cheng & Tam (1997) argue that the quality of training is the characteristic of a series of inputs, going through a process to the output of the education and training system. Quality training provides services that satisfy learners' needs (pp.22-31). According to Thanh (2011), training quality is the positive result of all the elements constituting the training system and the process of operating it in each environment. According to Ngoc & Thien, the quality of training is assessed through the degree to which the training objectives set out for the training program have been achieved (Thuy, 2013, p37). According to the author Duc, the quality of training is the result of the training process, which is reflected in the characteristics of the learners' qualities, personality values, labor values and professional capacity after graduation corresponding to the training objectives set out (according to Thuy, 2013, p37). Author Thuy (2013) argues that the quality of training is characterized by the product being "Human workers" and at the same time, the quality of training is also the result of the training process (pp.37-43). According to Trung (2020), training quality is "a training product that meets the training goals and output standards that schools have set forth, meets the needs of learners and the needs of society". Thus, we have made the comments of many authors about the quality of training. In general, the authors believe that the quality of training is a product or service that is formed after a process with many catalysts. In our opinion, the quality of training is the commitment of the higher education institution to properly implementing the training objectives and meeting the training program output standards and the requirements of society.

### **2.3. Satisfied**

Customer satisfaction is a customer's attitude towards a service provider. Oliver (1981) states that satisfaction is the customer's response to having their wants fulfilled. Satisfaction can be an emotional response at the time the customer receives the service with the difference caused by their prediction (Hansermark and Albinsson, 2004). Or according to Zeithaml & Bitner (2000), customer satisfaction is their evaluation of a product or service that meets their needs and desires. The British author (2019) said that "customer satisfaction is the fact that customers base their knowledge on a product or service to form subjective judgments or judgments" and it is formed based on the customer's experience (pp.62-79). Thus, satisfaction focuses on service users' perceptions of the satisfaction of their needs and desires about that service.

### **2.4. The relationship between training quality and satisfaction**

According to Parasuraman et al. (1988), satisfaction and service quality are two different concepts but they are closely related (pp.12-40). Cronin & Taylor (1992) argue that service quality is the most influential factor in customer satisfaction and previous studies also showed that service quality is the cause of satisfaction (Cronin & Taylor (1992) pp.55-68). Satisfaction is an outcome and service quality are causal and satisfaction is predictive and expected, while service quality is an ideal measure (Zeithaml & Bitner, 2000). Thus, we can say that service quality and satisfaction have a close relationship, when the service quality is evaluated by customers, they also feel satisfied.

## **3. METHODS**

### **3.1. Methods**

We choose the research method Systematic review in the period 2013 to 2023. The reason for choosing the milestone in 2013 was to find out the studies on satisfaction with training quality at higher education institutions. The reason is that 2013 is an important milestone when Vietnam issued Resolution 29 on comprehensive reform of education and training. Understanding the satisfaction with the quality of training after this time will help us have an overall view of the positive changes in Vietnamese education, including higher education.

### **3.2. Research subjects**

With the aim of studying an overview of learners' satisfaction with the quality of higher education in Vietnam in the period 2013 -2023, we searched all documents (Reports, research papers, theses). dissertations) published in the period from 2013 to 2023 in English, Vietnamese, and research in Vietnam. For ease of understanding and ease of presentation, we will collectively refer to the above documents as Research. The basis of our research selection was not limited in terms of research design and methods. Studies that are not fully published on the internet, lack information on the manufacturer or publication year, do not have a research location in Vietnam and have unclear reports will be excluded by us before being included in the presentation content.

### **3.3. How to find and evaluate studies**

Based on the research object, we use a tool that is an internet-connected medium to search for information with the keywords in Vietnamese and English as "satisfaction", "training quality", and "Learner". All documents found will be listed and duplicate studies

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will be removed. The documents assessing satisfaction with the quality of training but not research at higher education institutions were also removed. The remaining relevant documents are analyzed by us in this article. Specifically, the appropriate number of studies is 10 articles. All these studies ensure that there is enough data to perform analysis such as research samples, data collection methods, and tools used in assessing learner satisfaction with training quality.

### 4. RESULTS

All the studies that we consider appropriate will be analyzed in three tables by each group for the purpose of clarifying the content of the article. Group 1 is the information about the author, the year of the study, the name of the study and the toolkit to measure learner satisfaction. The second group is presented in the table, in addition to the author's name, there is also the content of the type of study, research sample and data collection techniques. The third group includes information, data analysis methods and the influence of research factors on satisfaction. Let's analyze the data presented in each table.

**Table 1: Toolkit to measure learner satisfaction with training quality**

Authors	Research name	Toolkit to measure learner satisfaction
Anh (2019)	Research on factors affecting student satisfaction with the quality of accounting and auditing training at Hanoi University of Industry	Research and develop a toolkit consisting of 5 elements: (1) Training program; (2) Serviceability; (3) Lecturers; (4) Tuition fees; (5) Facilities
Lien (2016)	Training service quality and student satisfaction the case of University of Economics, Vietnam National University, Hanoi	Research and develop a toolkit consisting of 4 components: (1) Material; (2) Training program; (3) Serviceability; (4) Lecturer
Nguyen & Nguyen (2017)	Research on the relationship between training service quality and student satisfaction at Tan Trao University	Research and develop a toolkit consisting of 5 components: (1) Reliability; (2) Level of response; (3) Service capacity; (4) Empathy; (5) Facilities
Viet (2017)	Factors affecting satisfaction with training service quality: A study from alumni of Nong Lam University in Ho Chi Minh City	Research and develop a toolkit consisting of 4 components: (1) Training program; (2) Lecturers; (3) Extracurricular activities; (4) Support Service
Giao & Tien (2016)	Student satisfaction with the quality of training services for the Work and Study system at UFM	Research and develop a toolkit consisting of 4 components: (1) Teachers; (2) Facilities; (3) Ability to fulfill commitments; (4) The interest of the University; (5) Reliability
Phan & Thùy (2022)	Factors affecting the satisfaction of engineering students with training quality at Nha Trang University	Research and develop a toolkit consisting of 5 components: (1) Teaching staff; (2) Facilities; (3) Ability to fulfill commitments; (4) The interest of the school; (5) Reliability
Son (2023)	Student satisfaction with the quality of training in management information systems at the University of Finance–Marketing	Research and develop a toolkit consisting of 4 components: (1) Training program; (2) Competency of lecturers; (3)
Van (2013)	Research on factors affecting student satisfaction with training services of Van Lang Private University	Facilities for training; (4) Administrative support activities
Chau & Chau (2013)	Assessing the level of student satisfaction with the training quality of the Faculty of Economics and Business Administration, Can Tho University in the period 2012-2013	Research and develop a toolkit consisting of 6 components: (1) Training program; (2) teaching staff; (3) Facilities; (4) The interaction with the business; (5) Study expenses; (6) The role of the academic leader
Phuong & Huong (2019)	Student satisfaction about university service quality in Ho Chi Minh City.	Research and develop a toolkit consisting of 6 components: (1) Reliability; (2) Empathy; (3) Responsiveness; (4) Assurance; (5) Tangibility; (6) Price

**Source:** Data analysis of research papers

From the information summarized in Table 1, we see that the studies were conducted at a higher education institution or a major within the institution. Studies using the toolkit to assess student satisfaction with the quality of training vary in terms of the

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number of components and the content of the tool. For example, the British author (2019) uses a toolkit developed based on the SERVQUAL model of Parasuraman et al. (1988) but there are some changes in some components such as training programs, lecturers, and tuition fees to match the research content. Research by Phuong & Huong (2019) has just applied the SERVQUAL model of Parasuraman et al. (1988) but also built 6 more specific tools for training quality to evaluate concurrently. Thus, the authors are flexible in building a toolkit to assess student satisfaction based on the original model of authors such as Parasuraman et al. (1988) or Cronin & Taylor (1992).

**Table 2: Research Techniques and data collection**

Authors	Type of Research	Research sample	Data collection techniques
Anh (2019)	A cross-sectional study combining quantitative and qualitative	The research sample includes 285 students majoring in accounting, auditing, 3rd and 4th years, random sampling method	Collect data through questionnaires sent directly to students, eliminating error surveys
Liên (2016)	A cross-sectional study combining quantitative and qualitative	The research sample includes 160 students from different majors, random sampling method	Data is collected using an online survey sent to students via email
Nguyen & Nguyen (2017)	A cross-sectional study combining quantitative and qualitative	The study sample consisted of 396 students; the sampling method was not indicated	Official survey form collected by questionnaire sent to students online.
Viet (2017)	A cross-sectional study combining quantitative and qualitative	The sample of the study consisted of 3393 students who graduated in 2009 and 2011	Submit online survey
Giao & Tien (2016)	A cross-sectional study combining quantitative and qualitative	The research sample consists of 360 students studying by working, convenient sampling method	Send surveys directly to students
Phan & Thuy (2022)	A cross-sectional study combining quantitative and qualitative	The sample of the study consisted of 500 students studying engineering, the sampling method was not indicated	Data collection techniques were not clearly presented in the study
Son (2023)	A cross-sectional study combining quantitative and qualitative	Research sample includes 352 students and alumni of the Faculty of Information Technology, Convenient sampling method	Data was collected by distributing questionnaires directly to students and via email to alumni
Van (2013)	A cross-sectional combined qualitative study	Research sample is expected to be 300 students, the quota sampling method	Data collection using a selfadministered questionnaire
Chau & Chau (2013)	A cross-sectional study combining quantitative and qualitative	Data used in the study	Data collection techniques were not clearly presented in the study
Phuong & Huong (2019)	A cross-sectional study combining quantitative and qualitative	The study was collected from 155 economics students using the stratified method	Data collection techniques were not clearly presented in the study

**Source:** Data analysis of research papers

From the aggregated information in the table of research techniques and data collection, we see that most of the studies choose the type of research as "Cross-sectional study combining quantitative and qualitative". Van's study (2013) is the only study among the presented literature that uses the type of research "Cross-sectional combined qualitative study", however, the content of our article uses a single-section study. The part has been published by this author, the second part is the actual research results we have not found published content. Data collection techniques in these studies were direct data collection, collection via email, and online surveys. The sample size used in these studies is consistent with the number of factors used to assess student

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satisfaction with the quality of university training. Some limitations of these studies are that the sampling method and data collection method are sometimes ignored by the author, and not clearly presented, affecting the reliability of the study.

**Table 3: Analytical methods and influence levels of factors on satisfaction**

Authors	Methods of data analysis	Factors affecting satisfaction
Anh (2019)	Reliability testing; exploratory factor analysis; Multivariate regression method	The factor that has the strongest influence on satisfaction is "Training program, $B = 0.466$ ", the second is "Ability to serve, $\beta = 0.335$ ", the third is "Ability to serve, $\beta = 0.122$ ", the fourth is "Tuition, $\beta = 0.999$ ", the last is "Facilities, $\beta = 0.082$ "
Lien (2016)	Reliability testing; exploratory factor analysis; Multivariate regression method	The factor that has the most impact on satisfaction is "Training program, $\beta = 0.346$ ", the second is the component "Facilities, $\beta = 0.330$ ", the last is the component "Serviceability, $\beta = 0.244$ ". The component "Teacher, $\beta = -0.103$ " has a negative sign, so it does not show a positive relationship with student satisfaction.
Nguyen & Nguyen (2017)	Reliability testing; exploratory factor analysis; Multivariate regression method	The strongest influencing factor is "Service capacity, $\beta = 0.318$ ", the second "Sympathy, $\beta = 0.357$ ", the third "Responsiveness, $\beta = 0.173$ ", the last is "Reliability". $\beta = 0.194$ ". For the factor "Facilities" is not recognized as a predictor of student satisfaction in the research.
Viet (2017)	Reliability testing; exploratory factor analysis; Multivariate regression method	The factor that has the greatest influence on satisfaction is "Additional services, $\beta = 0.535$ ", the second is "Training program, $\beta = 0.216$ ", the third is "Teacher, $\beta = 0.114$ ", and finally, "Extra-curricular activities, $\beta = 0.054$ "
Giao & Tien (2016)	Reliability testing; exploratory factor analysis; Multivariate regression method	The most influential factor is "Teachers, $\beta = 0.309$ ", the second is "Facilities, $\beta = 0.232$ ", the third is "Ability to fulfill commitments, $\beta = 0.218$ ", the fourth is "The interest of the school, $\beta = 0.105$ ", and finally "Reliability, $\beta = 0.101$ ". There is no difference in demographic factors for student satisfaction
Phan & Thuy (2022)	Reliability testing; exploratory factor analysis; Multivariate regression method	The factor that has the greatest influence on satisfaction is "Training program, $\beta = 0.785$ ", the second is "Teacher capacity, $\beta = 0.303$ ", the third is "Training facilities, $\beta = 0.094$ ", finally "Administrative support activities, $\beta = -0.065$ ".
Son (2023)	Reliability testing; exploratory factor analysis; Multivariate regression method	The most influential factor is "Training program, $\beta = 0.256$ ", the second "Interaction with the enterprise, $\beta = 0.189$ ", the third "Leader of the discipline, $\beta = 0.148$ ", the last one is "Cost of learning" having the least positive effect, $\beta = 0.127$ ".
Chau & Chau (2013)	Exploratory factor analysis and SEM	The most influential factor is "Teacher's style, capacity, $\beta = 0.555$ ", the second is "Facilities, $\beta = 0.480$ ", the remaining factors do not affect student satisfaction. pellets.
Phuong & Huong (2019)	Reliability testing; exploratory factor analysis; Multivariate regression method	The factor that has the strongest impact on satisfaction is "Library, $\beta = 0.227$ ", the second is "Employment consulting and placement services, $\beta = 0.212$ ", the third is "Facilities, $\beta = 0.202$ ", the fourth is "Study Counseling, $\beta = 0.173$ ", the fifth is "Canteen, $\beta = 0.138$ ", the last is "Dormitory, $\beta = 0.111$ ".

Source: Data analysis of research papers

In the table summarizing information on analytical methods and factors affecting satisfaction, we chose to study Van (2013) because there is not enough information on the influence of factors on satisfaction. Most of the remaining studies use Reliability Test, Exploratory Factor Analysis, and Multivariable Regression Method to find out the influence of factors. In the results of the above studies, we evaluate the factors that have the strongest influence on satisfaction as "Training program", the next influencing factors are usually "Service capacity and facilities". In addition, many studies have shown that the greatest influence on satisfaction belongs to the group of factors that are "lecturers, auxiliary services, and libraries". However, the number of studies choosing "Training program" with the greatest impact on satisfaction accounts for the majority. Thus, the training program is an important factor to study when assessing student satisfaction with the quality of training. The results of the studies have concluded that

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some factors have no impact or very small impact on satisfaction as "Extra-curricular activities", and "There is no difference in demographic factors for satisfaction". students", and "Cost of study has a very little impact". From these conclusions, it can be suggested that similar studies do not need to focus much on these factors.

### 4. CONCLUSION

Vietnamese higher education institutions are increasingly interested in meeting the needs and satisfaction of stakeholders, of which learners are extremely important stakeholders. Improve service quality and student satisfaction in higher education institutions not only to meet the standards of educational accreditation but also to attract learners and contribute to the existence and development of higher education institutions. Our article has overviewed the content of the studies and made comments on the content, location, sample size, tools used in measuring satisfaction, analytical methods, and impact level of the strength or smallness of each factor on learners' satisfaction with training quality. We suggest that it is necessary to build a model to support the assessment of satisfaction for educational institutions based on the set of training quality evaluation criteria issued by the Ministry of Education and Training of Vietnam.

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## Corporate Responsibility For Personal Data Breach Cases



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**ABSTRACT:** Arrangements regarding the protection of personal data are part of the provisions contained in criminal law to fulfill the human rights of the Indonesian people. In Indonesia, arrangements regarding this matter are regulated in several regulations, one of which is the statutory regulations. However, the problem is when the effectiveness of these regulations is questioned by the emergence of some cases related to breach of personal data, one of which was experienced by PT Tokopedia. Departing from this background, this research aims to discuss more deeply about these problems using a case study approach.

**KEYWORDS:** Personal data; privacy; criminal law.

### I. INTRODUCTION

Law has a role in protecting the material or rights of the subject. Based on Law Number 1 of 2023, those who are legal subjects are people and corporations, which in this case have developed from the previous Indonesian Criminal Code (KUHP WvS). Along with the law that moves to follow humans, developments in law do not only reflect on the subject. In addition, rights and property belonging to legal subjects also have developments.

Today, technology is one of the factors that affect the ease of access in human life. On the other hand, technology also has an important role in the development of law. One of the relationships between the role of technology and legal phenomena is the existence of personal data. Personal data intersects with an individual's identity which is part of a series of privacy rights. The urgency of why the right to privacy is protected is because privacy is one of the factors related to domestic relations and how it relates to other legal relations such as marriage and personal relationships. If this personal data is violated, the material losses suffered will be difficult to interpret differently than if a protected right to something tangible. (Dewi S., 2017)

Considering the relationship between the right to privacy as one of the developments of legal material, on the other hand, it is a development of the existence of a new form of development of crimes against rights violations. Violation of the right to privacy can lead to various forms of new crimes, such as theft of personal data, misuse of personal data, to falsification of personal data. This crime was originally triggered through a leak or theft of personal data first. Some of the factors behind the reason hackers commit data breaches intending to steal customers' personal information can be analyzed using the elements of the fraud triangle developed by Donald Cressey, which consists of perceived pressure, opportunity, and rationalization. (Arika Artiingsih, 2016) However, the rise of this case is driven by the factor of how there is an element of anonymity from hackers that makes it difficult to find pressure and rationalization.

A new problem related to this is when a data breach occurs on a large scale and is affected by the negligence of a company. In Indonesia, such a thing occurred to a company in Indonesia, namely PT Tokopedia. PT Tokopedia is a company with one of its superior products, namely the Tokopedia shopping or e-commerce application. Tokopedia as a marketplace offers a wide range of products equipped with secure payment methods, integrated shipping services, and innovative features such as a money-back guarantee, big discounts, Cash on Delivery (COD), and free shipping to provide convenience and convenience for its users. However, from all the advantages above, it is possible for users, both producers, and consumers, to suffer losses. (Julius Perkasa, 2021) One of the unavoidable losses is if there is an error in how the company does not quickly and responsively avoid cases of personal data breaches of its users.

From a legal point of view, this will also be related to how the company's responsibility is related to cases of data breach. Therefore, the consumer protection section also needs to be reviewed further. In addition, the recognition that corporations as part of the subject of criminal acts will provide an expanded perspective considering how PT Tokopedia has to provide accountability in cases of the data breach that befell its users. Thus, the problem was found to be the topic of discussion of how PT Tokopedia is responsible for cases of data breach carried out by third parties.



## **Corporate Responsibility For Personal Data Breach Cases**

### **II. RESEARCH METHOD**

Writing this legal article used the method of writing normative law. It has the nature of research in the form of descriptive research in which this research seeks to solve problems by describing problems based on existing facts. This research approach used a case study research approach (case study). In this research, primary legal materials were used in the form of Law Number 1 of 2023 concerning the Criminal Code, Law Number 27 of 2022 concerning Personal Data Protection, and Law Number 8 of 1999 concerning Consumer Protection. Furthermore, secondary legal materials were articles and scientific research, as well as books and legal materials originating from the internet and tertiary legal materials such as the Indonesia Dictionary (KBBI). The data collection technique used library research techniques which then used data analysis techniques in the form of describing problems related to corporate responsibility related to personal data breach.

### **III. Result and Discussion**

#### **Personal Data Breach in the Perspective of Criminal Law in Indonesia**

Besides violations, crime is an offense whose regulations are formulated in the provisions of the Criminal Law. The expansion of the form of crime is not only found in real space but also in cyberspace in the form of crimes related to technology and information such as data leaks and theft. (Niffari, 2020)

In fact, the question often arises whether there is legal protection regarding such crimes in Indonesia. For the answer, there are legal regulations governing this matter, such as Law Number 11 of 2008 concerning Information and Electronic Transactions (UU ITE). Departing from Article 26 of the Information and Electronic Transactions Law, it is explained that there is authority for the public to file a lawsuit whether the acquisition of personal data can be carried out with their consent or not. (Edmon Makarim, 2020) However, because this is like a lawsuit, even though the Information and Electronic Transactions Law is included in regulations related to criminal matters, this is the realm of civil law.

However, in order to provide comprehensive protection to citizens, Indonesia also has some regulations that accommodate the breach or misuse of personal data. Historically, Indonesia actually adopted personal data protection through one of the international conventions, namely the International Covenant on Civil and Political Rights. However, in substance, it was not strictly regulated in this law. Besides, the ASEAN Declaration of Human Rights also mentions how everyone has the right to be free from intervention in privacy and matters relating to his personality. (Priscyllia, 2019)

From this regulation, development related to this regulation is implemented in one of the legislation in Indonesia, namely the Personal Data Protection Law. According to the legal provisions contained in the PDP Law, it is stated in Article 28G paragraph (1) that everyone has the right to personal data. Even though the existence of this law has been in effect since 2022, there was a breach of personal data that reached 91,000,000 Tokopedia application user data. (Firdaus, 2022) This is a form of response regarding how the personal data protection system is in Indonesia and the effectiveness of the law in this regard. (Herryani, 2022)

In the realm of criminal law, if the data is disclosed, they will be subject to a maximum criminal penalty of 4 (four) years. (Ahmad Ramli, 2022) On the other hand, the PDP Law also emphasizes in Article 37 that personal data managers must also provide oversight regarding the processing of personal data. In this case, the party that should carry out the oversight is PT Tokopedia.

#### **Personal Data Breach in the Perspective of Corporate Responsibility**

From the existence of a legal basis related to corporate responsibility, it is appropriate how corporations are held accountable for mistakes that harm consumer parties. This should also be conducted by PT Tokopedia. (Nelson Novaes, 2020)

The Tokopedia data breach case was caused by the actions of a third party who broke into the Tokopedia electronic system. Thus, if it refers to Article 14 paragraph (5) Government Regulations concerning the Implementation of Electronic Systems and Transactions (PP PSTE), Tokopedia only needs to provide accountability in the form of a written notification to the owner of the personal data that there has been a failure in protecting personal data. (Ramiz Afif Naufal, 2020) Article 28 of the Minister of Transportation and Information 20/2016 also states the Implementation of Electronic Systems and Transactions' obligation. In this case, Tokopedia is only limited to notifications to owners of personal data in the event of a failure to protect the confidentiality of personal data in its electronic system. In this regard, Tokopedia can be considered to have fulfilled its legal responsibility because as soon as the data leak problem was circulated, Tokopedia gave an appeal for a password change to its users. Furthermore, when the data breach was confirmed, Tokopedia also made a notification to its users. Tokopedia even immediately made improvements to the security of its electronic system. (Gilang Riyadi, 2023) However, it will be a different form of legal responsibility if the Indonesian Consumer Community (KKI) is prosecuted based on Tokopedia's position as an entrepreneur, where the Indonesian Consumer Community can demand responsibility from Tokopedia based on Law Number 8 of 1999 concerning Consumer Protection ("Consumer Protection Law"). Tokopedia is a corporate marketplace that organizes an electronic platform or system

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that brings together sellers and buyers online.(Indra Gamayanto, 2018) When viewed from a consumer protection perspective, Tokopedia can be categorized as a business actor, who trades market platform services, while sellers and buyers who use the Tokopedia platform can be categorized as users or consumers.(Fathur, 2020)

Legal responsibility for market companies in users of data breaches caused by intruders by third parties is under the consumer protection law. It can be in the form of liability with compensation sanctions as stipulated in Article 7 letters f and g and Article 19 of the Law on Consumer Protection for violations of Article 7 letters a and d of the Consumer Protection Act, as well as liability with criminal sanctions as stipulated in Article 62 paragraph (1) of the Consumer Protection Law for violations of Article 18 of the Consumer Protection Law. The authors consider that in the case of a data breach, the principle of liability based on the error of the reverse proof system is the most appropriate principle of third-party responsibility for the hacking. For Tokopedia which legally obtained the plaintiff's data was negligent and caused the data breach. It would be more appropriate to apply the principle of absolute responsibility (strict liability).(Ridho Kurniawan, 2014)

## IV. CLOSING

### Conclusion

As for departing from the discussion above, it can be concluded, as follows:

1. In the criminal law realm, the development related to the regulation of personal data is implemented in one of the laws and regulations in Indonesia, namely the Personal Data Protection Law. According to the legal provisions contained in the PDP Law, it is stated in Article 28G paragraph (1) that everyone has the right to personal data.
2. Legal responsibility for market companies in the use of data breach caused by intruders of third parties is under the consumer protection law. It can be in the form of liability with compensation sanctions as stipulated in Article 7 letters f and g and Article 19 of the Law on Consumer Protection for violation of Article 7 letters a and d of the Consumer Protection Act.

## V. SUGGESTION

Given the importance of privacy rights and personal data protection in the current technological era, the suggestion for the future is to strengthen regulations on personal data in Indonesia. Consumer protection laws in Indonesia are very behind to keep up with the ever-growing technological advances, but consumer protection laws in Indonesia are too old. The government should enact legislation that specifically regulates online marketplace providers for online consumer data and privacy. Furthermore, Tokopedia is not only obliged to improve the security of its electronic system but also needs to carry out an in-depth evaluation of the security of the previous electronic system, bearing in mind that cases of personal data breach occurred due to a security system that failed to protect users' data from hacking by third parties.

Besides, for the public, it is expected that they should also be more sensitive and adaptive regarding this issue as part of an issue that continues to experience development and be more vigilant about related data protection issues to avoid things that were originally unwanted.

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## Local Government Policies in Formulating Harmonious and Democratic Regional Regulations



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**ABSTRACT:** Regional Regulation is one of the legal products in the region that greatly affects the welfare of the people, therefore the formation of regional regulations by the Regional Government should be participatory. The purpose of this research is to see how democratic laws and regulations are used to make local regulations. Components of the legal framework, especially the local government and DPRD, do not provide space for the community to express their aspirations, resulting in local regulations that are only ceremonial in nature.

Similarly, the principle of democracy outlined in the Law on the Formation of Legislation is still a formality due to the fact that the publication of local regulations to the public is not an obligation and the legal culture of the community and the role of democratization of formation have not been implemented. The problems in this research are 1) How is the implementation of democratic legislation in accordance with the needs of society? 2) Has the formation of local regulations involved public participation? The results of this research show that relevant institutions need to oversee how bureaucrats' participation works, in line with the mandate of Law Number 12/2011 on the Formation of Legislation, the formation of local regulations that are not participatory has resulted in several local regulations that are not in accordance with the demands of the community so that revisions need to be made. To ensure that local regulations are participatory and meet the needs of the community, the government must involve the community, accommodate aspirations, and capture as much community input as possible.

**KEYWORDS:** Local Regulation Formation, aspiration and participation.

### I. INTRODUCTION

Regional Regulations (Perda) are rules made by representatives of the people in charge of making decisions for a region formed by the Regional Representatives Council (DPRD) at both the convention and regency/city levels together with the Regional Head (Governor / Regent / Mayor). These rules help to ensure that the region can carry out the task of regional autonomy to accommodate the special conditions of the region. Law formation, in the sense of the substance of the interpretation of the law is the most urgent activity in a state of law, because the law is the basis of legality for all elements of the state, especially for state administrators to manage and systematize in managing the state. No government action can be taken without a legal basis because Indonesia itself adheres to the civil law system. The law is made by the people's representatives on the basis of being elected by the people and the people's representatives should listen to the aspirations of the people themselves. With the amendment to Article 18 of the 1945 Constitution of the Republic of Indonesia (UUD NKRI 1945), the implementation of regional autonomy has gained a solid constitutional foundation. Regional regulations, later referred to as PERDA, have been recognised as one type of legislation in Indonesia, even in Article 7 paragraph (1) of Law No. 12/2011 on the Formation of Legislation. Regional governments regulate and manage government affairs according to autonomy and shared governance, in accordance with the mandate of the 1945 Constitution of the Republic of Indonesia. The purpose of granting broad autonomy to the regions is to improve the realization of community welfare through improved services, empowerment and participation. In addition to this point, it is assumed that through increasing democracy, equality, justice, specialty and specificity as well as the potential and ability of the region within the framework of a sovereign state with increased competitiveness, to increase the efficiency and effectiveness of the implementation of regional autonomy, regional administration must pay attention to the interaction between government structures and regional governments, as well as the potential and diversity of the region.

In order to realize the national legal system, the process of forming laws and regulations is dynamic and adapted to the dynamics of community development. Coordinated steps and based on preparation methods that are set as standards for all entities with the authority to form laws and regulations need to be followed.<sup>1</sup> According to Law No. 12 of 2011 on the

<sup>1</sup> Aziz Syamsuddin, Law Drafting Process & Techniques, 2nd Edition Cet. 3rd Edition, Sinar Grafika, 2015, Page, 8.

## Local Government Policies in Formulating Harmonious and Democratic Regional Regulations

Establishment of Legislation as amended by Law No. 13 of 2022 on the Second Amendment to Law No. 12 of 2011 and Law No. 32 of 2004 on Local Government, the establishment of local regulations must be based on the principles of the establishment of Legislation including: a. Establishment of appropriate institutions or institutions; b. Suitability between types and content; c. Clarity of purpose; d. Usefulness; e. Execution; f. Usefulness; e. Execution; f. Execution. Usefulness; e. Execution; f. Clarity of purpose. Therefore, the 1945 Constitution creates a solid legal foundation for the formation of local regulations that must become a reference document for the formation of local regulations. These laws and regulations are regulated by the central government. According to Soenobo Wirjosoeigito, these regulations are local regulations (in a broad sense), so this opinion is the same as Jimly Asshiddiqie's opinion, stating that local regulations and laws are "the same" in their form of enactment and action.<sup>2</sup> The position of regional regulations should be seen as equivalent to laws made by the Legislature because regional regulations when viewed from the same position as laws.<sup>3</sup>

Local regulations are one of the policy guidelines, functioning to provide services, encourage participation in projects, and empower groups in order to improve the welfare of the community in each independent region. So, theoretically, local regulations are rules that are officially given to local governments to be used in regulating the region. In addition, as a form of democracy in a country, local regulations need to contain relational involvement so that aspirations can emerge as a supply of regulatory products that are in accordance with the wishes of the community. This is affirmed in Article 28 of the 1945 Constitution of the Republic of Indonesia, which gives the prerogative to hold assemblies and the freedom to express certain aspirations and criticisms, in a country that adheres to the concept of democracy which is characterized through several characteristics, namely: the life of freedom of opinion, the selection of management is decided through human means with the idea of honesty, justice and transparency. Because the principles of democracy can guarantee the people's right to determine the direction of government, democracy has a very important meaning for those who implement it. Since democracy is the cornerstone of state life, it is clear that the people at the highest level make decisions about important matters that affect their lives, including state policy.

Organizationally, a democratic state is a state that is governed by the people themselves or by the consent of the people, because sovereignty is in the hands of the people. A democratic state can be understood as a government in accordance with the will of the people, the importance of a scope of Local Government in the form of local policies to implement autonomy and management responsibilities with the people. Given that autonomy is a manifestation of the implementation of democracy, it is important for the authority to create legislative and legal norms that guide regional policy making, whether in the form of laws and regulations, presidential policies, or ministerial policies, all of which serve as guidelines for regional governments in preparing legal products for their regions. Regional Regulation (Perda) is a type of legislation, constitutionally the authority to form it is regulated in the 1945 Constitution Article 18 paragraph (6) that "Regional governments have the right to establish proximate policies and different policies to carry out the tasks of autonomy and joint management." The function of local policies is very important in the implementation of regional autonomy, so the way in which they are formed needs to be considered in efforts to form local regulations and policies, systematically organized based on positive methods and parameters, and stimulated through imaginative means and assignments of the local authorities concerned.<sup>4</sup>

## II. METHODS OF RESEARCH

The type of research in this paper is normative legal research. Normative legal research is legal research that focuses on research on written rules or legislation (law in books) or research based on rules or norms that apply in society.<sup>5</sup> The normative legal research process to find the truth based on normative substance by taking a conceptual approach and Legislation. Seeing the object of the problem to be studied concretely about regional legislation, of course doctrinally examining the basis of rules and legislation regarding the manifestation of power in the formation of both vertical and horizontal.

This research has the aim of trying to find concrete facts about the rule of law in accordance with legal norms that live in society, whether legal norms that provide obligations and sanctions are in accordance with the principles of legal norms. The findings of legal principles, and indeterminate legal findings, are complemented by empirical observations of how the law operates in

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<sup>2</sup> Jimly Asshiddiqie, *Matters Of Law*, (Jakarta: Konstitusi Press, 2006) Page. 24

<sup>3</sup> Ni'matul Huda, *Regional Autonomy, History Of Development And Problematics*, (Yogyakarta: Pustaka Pelajar, 2009), Page. 238.

<sup>4</sup> Marthen Arie, *Legisprudence Approach In Assessing The Quality Of Legislation*, Harlev, Vol. 2 Issue 3 December 2016, Page. 383.

<sup>5</sup> Muhammad Siddiq Armia. *Determination Of Legal Research Methods And Approaches*, Indonesian Institute For Constitutional Studies (Lkki) 2022, Page. 8.

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society. The legal sources used are obtained through literature sources and use the Statute Approach and Conceptual Approach. Sources and legal materials needed for research include primary legal materials that are sought, including legal sources that are considered valid according to their authority, such as laws and regulations, letters in the process of making laws and regulations, and judge decisions. Secondary legal materials include legal publications, legal periodicals, cases, expert opinions and research results of expert symposiums. Analysis for problem solving is carried out by synthesizing secondary legal materials and primary legal materials. This empirical juridical approach shows that in analyzing the problem using secondary and primary legal materials.

This research examines some formulations and implementation of certain legal events that occur in society as an explanation of what is studied and understood. Thus, legal findings can cause controversy that must be resolved through a scientific truth. Johnny Ibrahim said that normative legal research is a way to find the truth using scientific logic from a certain point of view. This point of view is not just about following the rules made by politicians or authorities. Instead, it looks at whether the rules are in line with other legal principles and whether people's actions follow the rules.

### III. RESULT AND DISCUSSION

#### A. Application of democratic principles of legislation in accordance with the needs of society

The process of forming regional regulations, hereinafter abbreviated as Perda, is the same as the formation of laws, except that it differs in the level and authority of implementation. The standardized basis for the formation of legal guidelines and policies remains the same. For example, in making laws and regulations, philosophical, sociological, and juridical foundations are used. Local Regulation is part of the legislation and is a legal provision of the Indonesian state based on Pancasila. Currently, local regulations have a very strategic function because they are given a constitutional basis that is expressly regulated in Article 18 paragraph (6) of the 1945 Constitution of the Republic of Indonesia. The provisions regarding its making are the same as the making of a law, but the institution that establishes it and the level of the institution are different. Nevertheless, normative juridical substance and ethical demands for local regulations are still considered so that local regulations have high juridical, philosophical and social validity.

The ideological, philosophical and ethical source for local regulations is Pancasila. Meanwhile, the operational juridical source of local regulations is the basic law, namely the 1945 Constitution, which is also the constitutional basis for local regulations. Its making is based on certain principles as mentioned in Article 5 of Law No. 12/2011 and Article 137 of Law No. 32/2004. These principles are clarity of purpose, the principle of institutional or appropriate forming organs, the principle of usefulness, the principle of conformity of hierarchy and content material, the principle of implementation, the principle of clarity of formulation and the principle of openness.<sup>6</sup>

One of the principles that can fulfill the wishes of the community is the principle of openness, which must be seen since the draft of the regulation, in the process of making which is open and democratic. Openness and democracy are intended so that the ideas or aspirations of the community can be channeled in the local regulation. The principle is that the local government and DPRD must listen to what the people want and be willing to accommodate the ideas, ideas or aspirations of the local community.

According to Van der Vlies, the concept of good legislation must be based on formal and material principles. Formal principles include: "the principle of clarity of purpose, the principle of suitability of persons and institutions, the principle of the need for detail, the principle of implementation, and the principle of consensus". Substantive principles include: "correct terminology and systemic principles, identifiable principles, principles of equal legal treatment, principles of legal certainty, and principles of law enforcement in the region".<sup>7</sup> Regional level regulations are regional regulations promulgated by the Regional Government or one part of the Regional Government that has the constitutional authority to enact laws and regulations at the regional level.<sup>8</sup> Legislation is essentially the establishment of legal norms that apply externally and are very broad in scope. Laws and regulations are written decisions made by the state or government in providing instructions or patterns of behavior that are usually generally binding.<sup>9</sup> According to Bagir Manan, to form legislation, make laws (including local regulations) strong and

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<sup>6</sup> Joko Riskiyono, *Community Participation In The Formation Of Legislation To Realize Welfare*, Global Journal, Indonesia, 2015.

<sup>7</sup> A. Hamid S. Attarnimi, *The Role Of The Presidential Decree Of The Republic Of Indonesia In The Implementation Of State Administration*, Dissertation, Lti, Jkt. 1990, Page. 330.

<sup>8</sup> Bagir Manan, *System And Technique Of Regional Legislation Making*. (Bandung: Lppm Universitas Islam Bandung, 1995), Page. 1

<sup>9</sup> Maria Farida Indarti, *Science Of Legislation Types, Functions And Content*, (Yogyakarta: Kanisius, 2007), Page. 10

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quality laws, the preparation of laws can be based on three foundations, namely: first, the legal basis (juridische gelding); second, the sociological basis (sociologische gelding); third, the Philosophical Foundation The importance of these three basic elements in forming a law in order to form a law that has legal rules (legal validity), and the rules apply for a long time.<sup>10</sup>

In the book The Liang Gie where in his book explains that a principle is a general thesis stated in general terms without specifying a specific way of implementing it, its application is a series of actions to be the right guide for action.<sup>11</sup> While in Satjipto Rahardjo's view, legal principles are the heart of the rule of law itself. Articles 5 and 6 of Law Number 12/2011 define the principles of developing effective laws and regulations as follows:

1. Purpose. This concept indicates that all rules and regulations must have a specific purpose to be effective.
2. Appropriate institutional or institutional arrangements. This concept asserts that laws and regulations are valid if they are promulgated by a legal institution/official as referred to in the 1945 Constitution. These rules and regulations can also be declared null and void if they are made by an illegal entity.
3. Conformity between type, hierarchy, and content substance. This concept intends that every form of legislation must pay close attention to the substance of the content that is adjusted to the type of hierarchy of legislation. The hierarchy shows that the laws and regulations prepared do not conflict with the laws and regulations concerned, while the content material requires conformity to the type, function, and hierarchy in the laws and regulations.
4. Implementability. This principle emphasizes that every legislation must consider the effectiveness in people's lives, both in terms of philosophical, legal and sociological thinking.
5. Usefulness and usefulness. This principle states that every regulation is promulgated because it is really necessary and useful in regulating the life of society, state and nation.
6. Clarity of formulation. The meaning of this principle emphasizes that each legislative regulation must be in accordance with the requirements and technicalities, so that the systematics and terms in legal language must be firm, not easily interpreted, and not cause various interpretations in its implementation.
7. Transparency. This idea is reflected in the preparation of laws and regulations which, according to the explanation of Article 5 letter g of Law No. 12/2011, must be open or transparent starting from the planning, preparation, preparation, discussion, ratification, and decision processes.

Article 6 paragraph (1) emphasizes that the content material of laws and regulations must reflect the principles of, among others:

- a. Protection; every content material of laws and regulations must guarantee the right to protection of its people in the
- b. Humanitarian Principles; the substance of laws and regulations must respect the rights and dignity of every citizen.
- c. Nationality; every content material of laws and regulations must describe the pluralistic nature that is in line with the character of the Indonesian nation while maintaining state unity and harmony.
- d. Family concept; every part of the Legislation must prioritize debate to build consensus on policy decisions.
- e. The archipelago principle; every content material of laws and regulations always pays attention to the interests of the entire territory of Indonesia.
- f. Bhinneka Tunggal Ika concept; the content of laws and regulations must be based on the diversity of cultures, religions, ethnicities, and groups so that there are no sensitive issues in the unitary state of the republic of Indonesia.
- g. The principle of justice; all content material of laws and regulations must be equal, equal, and defend the rights of others.
- h. The concept of equality in law and government; every content material of laws and regulations must not have a purpose that distinguishes based on background, including but not limited to, culture, ethnicity, religion, gender, race, class, and social position.
- i. The idea of order and legal certainty; every material substance of laws and regulations provides guarantees to citizens that there is protection to protect justice.
- j. The principle of balance, harmony, and harmony; every material substance of laws and regulations must maintain balance, harmony, and harmony between the interests of the people and society by prioritizing the interests of the state.

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<sup>10</sup> Bagir Manan, *Constitutional Basics Of National Legislation*. (Padang: Faculty Of Law Andalas, 1994), Page. 13

<sup>11</sup> Sudikno Mertokusumo, *"Knowing Law An Introduction"* (Yogyakarta: Maha Karya Pustaka, 2019). Page. 42.

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### B. Implementation of local regulation formation policies with community participation and aspirations.

Public participation has a very important urgency as a source in providing policy for the formation of laws and regulations in the context of the current era of democracy and decentralization. Public participation is a prerequisite and representation of the realization of democratic governance.<sup>12</sup> In the rules that apply in a normative context, the community is given guarantees both individually and collectively to participate in providing aspirations. This is regulated in Law No. 12 Year 2011 in Article 96 stating that "The public has the right to provide input orally or in writing in the formation of laws and regulations",<sup>13</sup> by participating in meetings, work visits, socialization or seminars and discussions. Explicitly, the guarantee of the right to public participation is also regulated in the 1945 Constitution Article 28E paragraph (3), which states that everyone has the right to freedom of association, assembly and expression. These rights have a constitutional meaning to play a role in government administration such as the formation of local regulations to provide input, suggestions and views and even criticism to legislators (Regional Head and DPRD).

The government in the process of forming local regulations must include community involvement in the process of forming local regulations, as well as their implementation and supervision. Thus, the purpose of forming local regulations to realize welfare can be realized. Community aspiration is a series of actions carried out in the form of requests or "resistance" to a policy in a planned and coordinated manner.<sup>14</sup> The goal is to influence the formation or change of policies in an effort to convey the interests of the community in making regulations in order to represent ideas, there is effective communication between the community and the Regional Government and DPRD as the authorized institution in forming regional regulations, The people still have the freedom to express themselves through various media, both social media, electronic, and other traditional media, as provided by the constitution in the context of respecting human rights. By understanding the importance of the people's ambitions, the content material will be more in favor of the people's interests. The misuse of content material designed for the benefit of the people means rejecting the essence of the existence of laws in society.<sup>15</sup>

Public participation in the formulation of laws and regulations can be done in various ways depending on the level of political development of a country. The following are some models of public participation:

#### 1. Representative Democracy

This is a pure model of public participation to invite public participation as citizens in making public policies in elections to make decisions on the election of legislative representatives purely by heart.

#### 2. Basic Model of Public Participation

The concept of people's participation by interacting with the representative institutions concerned so that there is an exchange of new ideas and ideas, so that people do not only interact in the decision-making process during general elections.

#### 3. Realism Model of Public Participation

In building participation interactions, actors tend to dominate bringing interest groups and organizations in following the context of elections in the realm of representative institutions. Some citizens do not participate in building interactions with institutions that have interests or some organizations.

Nonet and Selznick put forward the notion of three main conditions of law in society, namely Repressive Law, Autonomous Law, and Responsive Law, in relation to community involvement in legal development within the framework of a unitary state system. Repressive law has the aim of order, comfort and the basis of its influence is public safety. The rules are detailed but less binding on decision makers, so discretion often occurs. Coercion appears to be widespread and weakly constrained, while what develops is an "ethic of coercion". The law is subject to power politics and the expectation of obedience is unconditional and disobedience is seen as an aberration.

The rationale for regulation under autonomous law is legitimacy, which is based solely on procedural fairness. Rules bind the ruler and the ruled, while regulations limit access to information. Criminal limitations are used to regulate coercion, and morality is institutional morality. The rule of law is "independent" of politics. Compliance demands are substantially lower and justified by the application of rules, such as manipulating rules. Fixed processes are used to limit public engagement.

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<sup>12</sup> Hestu Cipto Handoyo. 2008. *Principles Of Legal Drafting And Academic Manuscript Design*. Yogyakarta: Publisher Of Atma Jaya University Yogyakarta, Page. 153.

<sup>13</sup> Article 96 Of Law No. 12/2011 On The Formation Of Legislation

<sup>14</sup> Joko Riskiyono. 2015. Community Participation In The Formation Of Legislation To Realize Welfare, Global Journal. Indonesia.

<sup>15</sup> *Ibid*



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In responsive law, the validity of law is based on substantive justice and rules are subject to principles and discretion. The validity of the rules is mainly based entirely on the main judiciary and the rules are situations for command and discretion. Discretion is exercised if you want to achieve the goal. Coercion is more visible in the form of overwhelming choice together with incentives or independence structures. The obvious morality is the "morality of cooperation", even when crime and political aspirations are in one. Disobedience is judged in terms of length and great harm and is considered a growing legitimacy problem, simply put, there are different types of laws. In some, the aim is to maintain order and security, but the person in charge has a lot of power to make decisions. In others, the rules apply to everyone equally and are based on fairness.

The Constitution is the highest form of legal norm in a country, in accordance with the idea of constitutional supremacy, and the entire state, including representative institutions, is bound by and subject to the rules in the Constitution. As an institution of the highest standing, the provisions of the Constitution can be tested by the judiciary through what is known as judicial review.<sup>16</sup> The regulation of lawmaking is mandated by law to the Legislature, where the Legislature must actualize democracy that results in the participation of all interests in the governance process. Furthermore, legislative understanding is needed to carry out reforms. Efforts to democratize the formulation of laws and regulations are one of the drivers to enable public participation and oversight in the preparation of laws and regulations. Participation can be defined as taking part in an activity, from preparation to assessment. It is hoped that by improving the DPR's function in the field of legislation, representatives of the people can produce legal products that involve public involvement. To address this, the DPR amended its Standing Orders. Previously, the discussion session of the bill was considered closed unless the chairman of the session stated otherwise. This should be reversed; in general, bill deliberation meetings are open unless closed for certain reasons, in the implementation of this transparency has not functioned properly.

Local Regulation Formation is the process of making local regulations based on planning, discussion, drafting techniques, formulation, ratification, enactment and dissemination. In the process of preparing the discussion and ratification of draft local regulations into local regulations, it is very important to refer to the applicable laws and regulations. Although the principle of legality, as stipulated in Articles 136-147 of Law No. 32 of 2004, is the main foundation, there are some additional things that need to be agreed upon to make local regulations more operational. One of the things suggested is the preparation of an academic paper prior to the formation of local regulations. Based on Article 58 paragraph (2) of Law Number 12 Year 2011 Jo Law Number 15 Year 2019 concerning the Formation of Legislation: "The harmonisation, rounding, and stabilisation of the conception of the Draft Provincial Regulation originating from the Governor is carried out by the ministry or institution that carries out government affairs in the field of the Formation of Legislation" Article 36 paragraph (3) states that "the preparation of Prolegda within the Provincial Government is coordinated by the Legal Bureau and can involve related vertical agencies".

Within the framework of the rule of law, the law has the highest position because there is an equality in the eyes of the law itself, the application of the principle of legality in all practices. The democratic system has given birth to the principle that the law itself is built and enforced on the basis of the source of the law itself, namely the law. Therefore, the principle of the rule of law should be built on the principles of democratic principles and developed on the basis of popular sovereignty, so that the principle of the rule of law as legal sovereignty itself in substance comes from the wishes of the people.<sup>17</sup> The implementation of regional development is divided into four stages: planning, budgeting, implementation, monitoring and assessment. PP No. 45/2017 demands that local governments are authorized to encourage community involvement as a result of the whole process. This is necessary to realize co-creative growth in the future, which is development based on shared ideas, resources, goals and actions.

Participation is a form of community desire in overseeing the Formation of Legislation in accordance with the wishes and needs of the community, the role of the community in channeling their aspirations, thoughts and interests in the implementation of local government, the community has the right to provide input both orally and in writing in the formation of Perda, Perkada or DPRD Regulations, it is guaranteed in article 166 paragraph (1) Permendagri 120/2018. The government has drafted a policy in response to the discussion of the Local Government Law Number 23 of 2014, which indicates that community involvement is needed to accelerate the fulfillment of community welfare. Article 354 requires local governments to encourage community participation in the administration of local government by:

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<sup>16</sup> Indrati, Maria Farida. Tt. "Proses Penyiapan Rancangan Undang Undang Dari Pemerintah," [Http://www.Parlemen. Net/Site/Ldetails](http://www.parlemen.net/site/details), Diakses 20 Oktober 2015.----

<sup>17</sup> Khairuddin Tahmid, *Democracy And Autonomy In Village Governance*, (Publishing Section Of Fak. Sharia Iain Raden Intan, Bandar Lampung), 2004. Page. 9.

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- a. Transparency of information through information systems, print/electronic media, notice boards, or direct requests to the local government concerned.
- b. Encouraging the active participation of community groups and organizations.
- c. Institutionalization and decision-making mechanisms that allow community groups and organizations to interact effectively.
- d. Community involvement in policy or decision making.
- e. Other initiatives based on needs and developments in the region.

Thus, it is hoped that the executive and legislative branches will be able to convey the views and demands of the community, which are then outlined in local regulations. It should also be noted that there are several factors that contribute to the relevance of community involvement in the development of local laws and policies: (1). Provides a more solid foundation for public policy making. (2). Ensures more effective implementation as the community takes an active part in the formulation of public policy. (3). Increase public confidence in the executive and legislative branches of government. (4). Resource efficiency, because by integrating the community in the formulation and implementation of public policies, resources are spent on socializing public policies.

## IV. CONCLUSIONS

The process of forming laws is almost the same as the process of forming local regulations, only different at the level and authority that has the authority to implement it, the formation of laws and regulations is essentially the formation of legal norms that apply generally in a broad sense. Local regulations are written decisions of the state or government that contain instructions or patterns of behaviour that are generally binding, community participation must be involved in the formation of local regulations, as well as in the implementation and supervision of these regulations. Community participation in the formation of local regulations can be done in various models of participation options depending on the level of development of a dynamic community environment. Public participation in the formation of local regulations is guided by the political system adopted by the state, therefore changes in the constitutional paradigm have consequences for changes in the meaning and implementation mechanisms of public participation in the formation of local regulations. In the reform era, the frame of transparency is articulated as participation which is given the meaning of community involvement in the broadest possible political process, especially in the formation of laws and regulations, be it the laws above or below.

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## Antimicrobial Resistance: A Misuse or Overuse of Antibiotics?



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**ABSTRACT:** The effectiveness of antibiotics in treating infections in patients is declining as antibiotic-resistant bacteria become alarmingly powerful. We might be failing to understand the cliché that the emergence of antibiotic-resistant bacteria is caused by the overuse and abuse of antibiotics. The high cost of pharmaceuticals serves as an example of the failure of the current system. One medicine costs over \$5 billion and takes 15 years to create. There is minimal input into the open-loop system that produces new medications. Because pharmaceuticals are not tailored, this ineffective method produces drugs that are dangerous to the majority of the target population and only work for a small portion of that population. This issue can only be resolved by a complete return to nature rather than by just increasing R&D spending.

**KEYWORDS:** antimicrobial resistance, combinatorial chemistry, directed synthesis, diverse molecular targets, R&D

### 1. INTRODUCTION

Even after supposedly effective treatment, an infection may persist due to a variety of factors, including incorrect diagnosis, medication errors, rational drug selection, postulated treatment outcomes, drug interactions, potential adverse drug reactions, low immunity, and etiologic agent resistance to antibiotics [1].

There is a need for the development of more potent drugs if the persistence of infections is a key factor in antimicrobial agent resistance, which is the inability of microorganisms, particularly bacteria, fungi, parasites, and viruses, to withstand the effects of medications that were previously used to treat them. Antibiotic resistance (ABR) is the term for this type of medication resistance [2].

Drug-resistant superbugs are one of the biggest threats to your health, regardless of your socioeconomic status, race, gender, etc. Even though the issue is widespread, we are not completely helpless in the face of these formidable obstacles.

Globally, about 700,000 people die each year from AMR, representing about 1% of global deaths. It has been posited that by the year 2050, one out of every four deaths in Nigeria will be due to AMR [3]. We are ostensibly on the cusp of a post-antibiotic era. If the current trajectory of these drug-resistant microorganisms is not reversed by 2050, some ten million people could succumb to drug-resistant diseases, costing the global economy 20 trillion USD. I think your best defense is a healthy immune system [4].

### The true cause of AMR

It will be unsatisfactory if you are unable to pinpoint the root cause(s) of this problem. First and foremost, Alexander Fleming identified *Penicillium notatum*, a typical mold, as the source of the first antibiotic in 1928. About ten years later, the medication was available, and it completely changed how infectious diseases were thought of. The synthesis of the drugs proved useful as the need for them grew. Penicillin's effectiveness against *Staphylococcus aureus*, for which it was developed, significantly decreased because researchers used combinatorial chemistry and directed synthesis rather than the original materials upon which the drug was based. For instance, shortly after the massive production of the drug through combinatorial chemistry and directed synthesis in 1946, the efficacy of penicillin against *S. aureus* dropped to 88%. Four years later, the efficacy dropped to 66%. In 1982, it dropped to 10%, and now it is less than 5% sensitive to *S. aureus* [5]. Can anyone hazard a guess that the total depletion in the efficacy of penicillin against *S. aureus* is a consequence of the overuse and misuse of antibiotics that have assumed a permanent cliché in our contemporary society today, when 128,000 people die each year in America because of taking medications as prescribed? Could it be the side effects of these chemically synthesized drugs? Would it have been different if the pharmaceutical industry had not totally embraced combinatorial chemistry and the direct synthesis of drugs?

Remember, Alexander Fleming and Selman Waksman admonished that bacteria are adaptive; if they don't die, they become stronger and more resilient when exposed to the magic bullets, and, eventually, they will need stronger and stronger drugs. The same way the immune system becomes stronger and more resilient when exposed to pathogens. Could the active pharmaceutical

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product (API), excipients, or both have contributed to the rapid spread of this adaptation among microbes? Since there is a total shift from the microprogram to combinatorial chemistry and directed synthesis, I can hazard a guess for the latter.

The most adaptable species is the one that endures, not the strongest or the most intelligent. Given that the nucleic acid, proteins, and cell wall that surround bacteria can all change, bacteria are genetically programmed to be adaptable. As long as the insults don't pile up or persist, some changes are temporary or reversible.

But if the insults are sustained or accumulate over time—and they can even be passed from one microbe to another—the change may also become permanent. Excipients, or API, are the main targets of the insults. This is because they are harmful to the body and can destroy the gut microbiome, which is where 80% of our immune system resides.

### The panacea

The high cost of medications is an illustration of the current system's failure. Over \$5 billion is spent on a single medicine, which takes approximately 15 years to create [6-7]. The process of developing new medications is an open-loop system with little input. Because pharmaceuticals are not tailored, this inefficient approach produces medications that are only helpful for a tiny subset of the target population while offering severe risks and adverse effects to the majority [7]. This issue cannot be remedied merely by increasing R&D spending..

The solution may lie in investing more in plant-based foods like medicinal plants since they contain molecules that produce pharmacological effects similar to any other medication but with the advantage of having diverse molecular targets that prevent and correct the tendency toward disease without any palpable adverse effects. Another solution may lie in the total avoidance of toxemia, whether from toxic food, drinks, products, or the mind.

**Conflict of Interest:** The authors declared that there was no conflict of interest.

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## Changes in Mobile Telephony in Congo-Brazzaville



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**ABSTRACT:** The development of telecommunications has made it possible to reveal market niches, once considered unprofitable. This is the case of mobile telephony, which is now experiencing undeniable success in the world and Congo-Brazzaville, in particular. There is also a shift from mobile telephony services (voice, sms and mobile Internet) to mobile financial services (mobile money). This change could shift the status of mobile operators to that of financial operators, thus becoming true competitors of traditional banks.

**KEYWORDS:** Mutation, mobile money, electronic payment, changes, financial inclusion.

### INTRODUCTION:

Mobile telephony is becoming increasingly important, particularly in the context of developing economies where low-income households and micro-businesses do not have easy access to financial services. Sub-Saharan Africa's bancarisation rate is the lowest in the world, according to the European Investment Bank (EIB, 2016). Financial inclusion, through mobile payment, offers mobile operators the opportunity to become financial operators (Massanga P.T and Théodora M, 2020). In the next few years, these operators will become direct competitors to traditional banks, following their more than likely shift from cell phone services to mobile money.

According to the African Development Bank Group (GBAD, 2013), cell phone users outnumber bank account holders in India and Africa. This cell phone revolution in Africa (Bordry A.S and Bouverot A, 2015) will impact all sectors of the economy.

This article studies the mutations observed in Congolese mobile telephony. The aim is to analyze the issues at stake in the growth of mobile telephony in Congo-Brazzaville and, furthermore, to examine whether mobile operators can provide an alternative to the difficulties of banking restrictions for the poor, particularly those in the informal sector.

The issues addressed in this study are as follows: What changes are taking place in the mobile telephony sector? Hence the following subsidiary questions: What are the characteristics of the Congolese digital market? What is the weight and impact of mobile money in Congo's digital economy?

The research hypothesis is as follows: Mobile money, a by-product of the development of mobile telephony, has become the backbone of monetary transactions, including for low-income populations.

This theoretical and practical contribution is based on the exploitation of documentary data, reports and a survey. It is structured in two points. The first examines the factors behind the emergence of mobile money. The second analyzes changes in mobile telephony in Congo-Brazzaville.

### 1. The factors behind the emergence of mobile money

#### 1.1. Liberalization of telecommunications networks

The digital revolution is closely linked to the electronic revolution in the IT and microelectronics sectors. Since the invention of the telephone, telecommunications networks have evolved within a paradigm dominated by electromechanics (Brousseau E & al, 1996). From the 1960s onwards, the digital paradigm emerged, the product of several technologies: capture, transmission, processing, presentation and storage (Goldfinger C, 1994). The transition from the electromechanical to the digital paradigm can be explained by improvements in network transmission quality. Analog transmission, which characterizes the electromechanical paradigm, has at least two limitations (Caccommo JL, 1996): extreme specialization and lack of precision. Extreme specialization has favored the uniqueness of network operation, for technical reasons in particular. Technically, voice communication is subject to a number of hazards that make it very difficult to receive. Hence the lack of precision. These limitations will be overcome with the arrival of digital technologies. These enable the signal to be regenerated in its pure form (rather than amplified as with analog

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techniques). They enabled the multiplication of clearly defined interfaces, which in turn allowed the functional and then economic fragmentation of networks, and the introduction of competitive areas (Turpin E, 2000).

The liberalization of telecommunications can thus be analyzed in two stages: the transition from monopoly to competition, and the process of liberalization, concomitant with the disengagement of the government.

From monopoly to competition. "Born in very specific national contexts, the telephone in the West gradually spread within an increasingly homogeneous institutional framework, following T. Vail's slogan (one telephone, one system, universal service). Until the early 1980s, the local monopoly ended up being the only form of organization in the telephony market" (Dang Nguyen G and Phan D, 2000). In Central Africa, the telecommunications monopoly is a legacy of the colonial period. During this period, telecommunications services in French Equatorial Africa (AEF) were provided by the Office Equatorial des Postes et Télécommunications (OEPT). It wasn't until 1963 that OEPT broke up with the decolonization of the colonies (Cameroon, Congo, Gabon, Equatorial Guinea, Central African Republic and Chad). These colonies became independent countries and took advantage of their sovereignty to manage telecommunications services independently. For the Congo, a parastatal company called Office National des Postes et Télécommunications (ONPT) was created. This company remained the public operator with a monopoly until 1997, when telecommunications were liberalized. Until then, the telecommunications market in the Congo has been characterized by restricted supply, unsatisfied demand and the isolation of entire zones (Makosso B, 2005; Mbengou R, 2009). The restriction of supply is justified by an outdated infrastructure characterized by spatial discrimination (N'zebebe J, 1988). Supply is concentrated around two poles, Pointe Noire and Brazzaville, while the rest of the country is almost inactive. This situation is also due to the repeated wars that took place in the Congo in the 1990s, which considerably damaged the infrastructure. This limited supply was unable to satisfy the ever-increasing demand for telephones (Makosso B, 2005; Koulakoumouna E, 2005). This observation applies not only to the Congo, but to all Central African countries (Kibong G, 2012). For this author, in addition to the disparities between urban and rural areas, there is also the low level of inter-African telephone traffic, reflecting the lack of integration between the continent's economies and the extraversion of these countries, which are closely linked to the North.

In the Congo, the liberalization process will see the introduction of an arsenal of laws to improve conditions in the telecommunications sector. The aim of these laws was to clarify roles. Whereas public operators used to confuse their regulatory and operational missions, being judge and jury, the new status of operators and the opening up of markets have led governments to distinguish between the functions of regulator and operator. This change of vision reflects, on the one hand, the idea that the administrative authority is no longer the sole decision-maker, but must delegate certain functions. On the other hand, there is also the intention to take into account the rights of citizens in the decision-making process. In the Congo, this delegation has taken place in several sectors: the Agence de régulation des marchés publics (ARMP) in the public procurement sector; the Agence de régulation de l'aval pétrolier (ARAP) in the oil sector; and the Agence de régulation des postes et télécommunications électroniques (ARPCE) in the telecommunications sector.

The latter agency, a public administrative establishment, was created by law n°11-2009 of November 25, 2009. ARPCE replaces the Direction Générale de l'Administration Centrale des Postes et Télécommunications (DGACPT) created in 1998, a body which played the dual role of agency and operator. This law clarifies the role of the new agency. It states that the agency has the power to impose sanctions on any postal and electronic communications operator. In other words, ARPCE's action is based firstly on its power to issue administrative instructions and regulations; secondly, on its power to impose sanctions; and thirdly, on its power to monitor postal and electronic communications networks and services. The agency also has the power to "arbitrate" in disputes between operators or between operators and users<sup>1</sup>.

This clarification of roles follows on logically from older regulations. For example, Law n°14-97 of May 26, 1997 liberalized the Congolese telecommunications market and opened up the sector to competition. While this clarification of roles is a considerable step forward for the telecommunications sector, it should be noted that liberalization is not total, since the ONPT retains a monopoly on basic services, while opening up value-added services to competition (Makosso B, 2005). We also note that the agency is not totally free, contrary to what the texts say. Its organization shows that its room for maneuver is limited, either because its members are appointed by the executive, or composed of members of the executive (Eyombi AJ, 2012). This allows the government to legally exercise a supervisory power over this body. In practice, therefore, we have the impression that the Congo has complied with the injunctions of the international and European communities to create a sectoral agency, while at the same time exempting itself from substantive obligations: the non-granting of decision-making autonomy to the sectoral regulatory authority<sup>2</sup>.

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<sup>1</sup> <https://www.tresor.economie.gouv.fr/Pays/CG/le-secteur-du-numerique>

<sup>2</sup> AJ Eyombi, op.cit

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Despite this negative note, the new framework has enabled considerable progress to be made, as new private players have emerged on the Congolese telecoms scene. In addition, we also note that the establishment of ARPCE has, among other things, influenced the explosion in demand for cell phones (Swierczynska K.A, Koulakoumouna E, 2018).

### 1.2. Mobile money as a dematerialization product

This constant dematerialization of networks has led to the development of mobile telephony. It has also accelerated in the area of payment methods. In the latter case, tradition generally distinguishes four stages in the dematerialization of means of payment: Commodity money, metallic money, fiduciary money and now scriptural money, which includes electronic money<sup>3</sup>. Focusing solely on e-money, many authors already distinguish three generations of this currency (Lacoursiere M, 2007; Piffaretti N, 2000; Lane G, 1999). While Lane considers virtual money to belong to the third generation, the other two consider it to be of the second generation. For Piffaretti, the future of e-money is unwritten. As for Lacoursiere, it's the new contactless electronic payment methods-cell phones, subcutaneous chips-that can be assimilated to third-generation payments.

According to Coffre (1997), electronic money has a dual meaning. First, it is a digital currency, exchanged between a buyer and a seller. It is contained in a wallet, a unit of account recognized by both buyer and seller. This wallet may be a memory card, in which case it is referred to as an electronic wallet. It can also be a file located on a hard disk or floppy disk, known as a virtual wallet. By extension, electronic money then refers to the flow linked to the use of a card, or even the dematerialized flow (Coffre O, 1997). This definition highlights the incessant process of dematerialization of electronic money. The card is exchanged first, before the cash flow in the card is exchanged. This process began with electronic funds transfers, where the electronic network is used simply to access the customer's bank account in order to authorize a funds transfer (Lacoursiere M, 2007). It is now continuing with contactless payment methods.

Two criteria characterize this process of dematerialization of electronic money: the increasing detachment of these new means of payment from the banking institution, and the increase in their circulation area.

The first criterion does not fail to pose new problems compared with traditional money, particularly with regard to monetary stability and policy (Landau JP, 2018). The second criterion, circulation area, transcends national space. From electronic transfers to bankcards and, today, computer hard disks, smart cards, etc., the electronic circulation area for new means of payment is expanding, leading some to say that electronic money will be the first currency in history to be complete (Lane G, 1999).

In this configuration, a distinction is now made between centralized and decentralized e-currencies (Laurent A, Monvoisin V, 2015; Landau JP, 2018). The latter category, also known as virtual currency or crypto-currency (such as bitcoin), is part of the generation of means of payment linked primarily to the open Internet system. It is facilitated by the growing development of e-commerce (Piffaretti N, 2000). Crypto-currencies are private currencies with no legal tender status. They are created and circulated independently of any bank, and are detached from any bank account. According to Landau, three characteristics define crypto-currencies. They are virtual currencies that use cryptography and are decentralized (Landau JP, 2018). They are virtual currencies, i.e., digital representations of purely fiduciary value. They are not issued or guaranteed by a central bank, credit or monetary institution; They use cryptography, i.e., they are designed and adapted to transmit value over the Internet in a totally open and public environment and, in complete security.

In short, transactions are carried out outside the regulated financial system, without recourse to clearing mechanisms managed by banking institutions. This is why they are also referred to as private currencies.

Centralized electronic money is usually issued and managed by a central authority, which records it as a liability. There have also been major innovations in bankcards, from magnetic stripe cards to contactless payment by bankcard. Coffre's definition of e-money also highlights the notion of electronic payment instrument, i.e. the means by which the bearer (holder of e-money account units) accesses e-money for use. Such instruments include prepaid cards and cell phones. The latter is known as mobile money.

Mobile money refers to the use of the sum of money stored on the SIM card in a cell phone. This restrictive definition is also used by CEMAC<sup>4</sup> and UNCTAD (2013). Another, broader definition sees mobile money as money that uses mobile telecommunication networks, is stored on electronic memories and is not linked to a bank account (ARPCE, 2021b). In addition to storage, this definition contains two important elements. The first is the use of telecommunications media, which distinguishes mobile money from fiduciary or scriptural money. The second element is that mobile money is not linked to a conventional bank account. This distinguishes mobile money from mobile banking. Mobile banking is an online service offered by banks to their customers. Thanks to this service, customers can access their account and carry out certain banking operations (balance enquiries, bank transfers, etc.). These operations require the opening of a bank account, which is not the case for mobile money.

<sup>3</sup> [https://www.toileses.org/premiere/2005\\_demmat\\_monnaie\\_tm\\_breal.htm](https://www.toileses.org/premiere/2005_demmat_monnaie_tm_breal.htm)

<sup>4</sup> <https://www.beac.int/wp-content/uploads/2021/10/Services-de-paiement-par-la-monnaie-%C3%A9lectronique-dans-la-CEMAC-EN-2020.pdf>



## Changes in Mobile Telephony in Congo-Brazzaville

### 2. Changes in mobile telephony in Congo Brazzaville

#### 2.1. Operators and characteristics of the mobile telephony market in Congo

A distinction is made between those involved in regulating the telecommunications sector (ARPCE, BEAC and COBAC), those who issue e-money (commercial banks), e-money distributors (cell phone operators), e-money acceptors (merchants) and e-money bearers (users).

Regulation is an important and indispensable tool for the development of electronic transactions. We have already presented ARPCE. To distinguish it from the other two players, we would only add that, while ARPCE is an internal regulator of electronic transactions in Congo-Brazzaville, the Banque des Etats de l'Afrique Centrale (BEAC) and the Commission Bancaire de l'Afrique Centrale (COBAC) are regulators at CEMAC level. CEMAC community texts specify the roles assigned to BEAC and ARPCE in the regulation of electronic money using cell phone networks. In concrete terms, this means that a distinction must be made between the telecommunications network layer, which is regulated by ARPCE, and the layer linked to the financial flows that pass through the network equipment of cell phone operators. We can therefore say that the regulation of voice services, SMS and mobile Internet are essentially the responsibility of ARPCE, unlike mobile money, which requires the creation of electronic money convertible into cash, which is the responsibility of BEAC.

Since 2011, commercial banks have been able to issue electronic money in partnership with cell phone operators<sup>5</sup>. This regulation has led to a so-called cooperative business model that enables banks and telecom operators to carry out partnerships while retaining their initial roles in the mobile payment value chain (Chaix L and Torre D, 2015). Operator and bank partner to help mobile money users migrate to financial services through appropriate online assistance<sup>6</sup>. But since 2018, mobile operators have also been able to issue and manage electronic money. Issuing money is no longer reserved for banking institutions alone<sup>7</sup>. This second business model, known as substitution, is provided by the operator alone. It has the advantage of being quickly integrated into users' habits, with negligible adaptation costs<sup>8</sup>.

Electronic money acceptors are merchants who extend the reach of the cell phone. These merchants are mainly cell phone booths (MBCs), which are being set up as very small businesses, enabling everyone, especially occasional phone users, to have access at any time and in any place without owning personal equipment (Koulakoumouna E, 2005). Although the CTM phenomenon is essentially urban (Loquay A.C, 2012), observation shows that it is developing and spreading more and more, even in the most remote areas. This enables cell phone operators to reach a critical mass of subscribers, unlike traditional banks, which are only located in major cities. This almost<sup>9</sup> nationwide coverage has also enabled the two operators to position mobile money as a reliable, fast and highly efficient local product (Massanga P.T, Theodora M, 2020).

The distributors of electronic money in Congo-Brazzaville are MTN and AIRTEL, who share the Congolese mobile telephony market. The report of the observatory of the mobile telephony<sup>10</sup> market in the 2nd quarter of 2021 (ARPCE, 2021a), gives characteristics of the Congolese mobile telephony market. These characteristics include the number of subscribers, total revenue, voice traffic, SMS traffic and total mobile telephony revenue.

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<sup>5</sup> Regulation n°1/11/CEMAC/UMAC/CM relating to the exercise of the activity of issuing electronic money. <https://www.sgg.cg/txts-droit-reg/CEMAC-Reglement-2011-01-activite-emission-monnaie-electronique.pdf>

<sup>6</sup> L Chaix et D Torre, 2015, Op.cit.

<sup>7</sup> In accordance with articles 3 and 5 of Regulation n°04/18/CEMAC/UMAC/COBAC relating to payment services in the Economic and Monetary Community of Central Africa of December 21, 2018. [http://www.sgcobac.org/jcms/mbm\\_7081/en/reglement-n04-18-cemac-umac-cobac-relatif-aux-services-de-paiement-dans-la-cemac](http://www.sgcobac.org/jcms/mbm_7081/en/reglement-n04-18-cemac-umac-cobac-relatif-aux-services-de-paiement-dans-la-cemac)

<sup>8</sup> L Chaix et D Torre, 2015, Op.cit.

<sup>9</sup> MTN and Airtel have decided to share their infrastructures in entire territories that are not served by a cell phone or Internet network.

<https://www.digitalbusiness.africa/larpce-salue-la-decision-dairtel-et-de-mtn-congo-de-partager-leurs-infrastructures-dans-les-zones-non-couvertes-par-leurs-reseaux-respectifs/>

<sup>10</sup> <https://www.arpce.cg/upload/publications/Observatoire%20des%20March%C3%A9s%20C3%A8me%20Trimestre%202021.pdf>

## Changes in Mobile Telephony in Congo-Brazzaville

Table: Cell phone subscribers and penetration rates

CELL PHONE SUBSCRIBERS AND PENETRATION RATES					
	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21
<b>Total subscribers (000)</b>	5012	5320	5618	5807	5896
<b>prepaid subscribers</b>	4977	5283	5580	5769	5868
<b>postpaid subscribers</b>	35	37	38	38	38
<b>penetration rate on total population</b>	96,00%	101,20%	106,10%	108,90%	109,80%
<b>SUBSCRIBERS PER OPERATOR AND MARKET SHARE IN VOLUME</b>					
<b>Between Q2-20 and Q2-21, MTN and Airtel subscribers grew by 7.4% and 33.0% respectively.</b>					
	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21
<b>subscribers per operator</b>	5012	5320	5618	5807	5896
<b>MTN</b>	3011	3203	3292	3262	3233
<b>AIRTEL</b>	2001	2117	2326	2546	2662
<b>MTN and Airtel have respectively 54.8% and 45.2% of market shares in the second quarter of 2021.</b>					

Source: Operators

In the second quarter of 2021, the Congolese market recorded over 5.89 million subscribers<sup>11 12</sup>, divided between the operators MTN and Airtel. Between Q2-20 and Q2-21, the number of subscribers increased by 17.6%. Compared with Q1-21, the number of subscribers in Q2-21 rose by 1.5%. The mobile telephony market is 99.4% prepaid, compared with 0.6% postpaid. The mobile telephony market penetration rate was 109.8% in Q2 2021, compared with 96.0% in Q2 2020.

Two points of interpretation stand out in this first table.

The first is the mobile telephony penetration rate, which exceeds 100%. This shows that, unlike fixed-line telephony, the Congolese people are very keen on cell phones. There has been a huge increase on the 2009 rate. Indeed, the Ministry of Planning, Statistics and Regional Integration (MPSIR) produced a report in 2009 on the impact of mobile telephony on household living conditions in the Congo. At the time, the penetration rate was 78.6%. An increase of over 30% in twelve years. The Congolese affirm that cell phone use contributes to improved performance at work. This improvement increases with the level of education, rising from 4.9% among those with no education to 62.3% among those with secondary education, and reaching 79.1% among those with higher education. On the other hand, more than half of the 3,850 households surveyed say that the telephone contributes moderately to improving their living conditions (MPSIR, 2009) and helps mobilize in politics, for example (Theodorat M, 2016).

The second element is the method of payment. The Congolese prefer prepaid subscriptions. To access the Internet or send an SMS, the user pays before use. The same applies to sending money by cell phone. Consumers credit their Sim card by paying the company a certain amount. Consumption can then be paid for at a contactless ATM using the cell phone. This billing method reduces the use of scriptural money (Tcheng H, Huet J-M and Romdhane M, 2010), limits theft, even if the Congolese population denounces the system as a scam<sup>13</sup>, and the profits for operators are substantial, as can be seen in the dashboard.

<sup>11</sup> The data used by ARPCE to estimate the Congolese population are those produced by the Centre national de la statistique et des études économiques (CNSEE), whose latest census dates back to 2007. In 2007, the CNSEE estimated the Congolese population at 3,997,490, with an average annual growth rate of 2.8%. Using this growth rate, ARPCE has estimated the evolution of the Congolese population for the year 2021 and for the second quarter of 2021. Congo's population is estimated at 5.4 million.

<sup>12</sup> Congolese reality shows that an individual may own two or three Sim cards from different operators. As the number of subscribers is counted in relation to the number of SIMs, it is easy to understand why the number of subscribers may be equal to or greater than the population.

<sup>13</sup> <https://www.adiac-congo.com/content/mobile-money-la-population-denonce-un-systeme-darnaque-123303>

## Changes in Mobile Telephony in Congo-Brazzaville

### DASHBOARD

	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21
subscribers(000)	5012	5320	5618	5807	5896
	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21
Total revenue (million FCFA)	30170	35133	34373	32499	32086
outgoing revenue(voice)	25667	30305	29884	28512	28260
Incoming revenue(voice)	2083	2170	1996	1638	1392
outgoing revenue(SMS)	2416	2653	2489	2347	2432
Incoming revenue(SMS)	4	4	3	2	2
	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21
Total voice traffic(million)	951	1122	1098	1142	1160
Total outgoing traffic	925	1093	1070	1117	1138
Total Incoming traffic	26	29	29	25	21
	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21
Total sms traffic (Millions)	1193	1238	1283	1230	1173
total outgoing sms traffic	1235	1280	1228	1171	1287
Total incoming sms traffic	2	3	3	2	2
	Q2-20	Q3-20	Q4-20	Q1-21	Q2-21
total weighted outgoing voice (FCFA)	27,8	27,7	27,9	25,5	24,8
total weighted outgoing SMS (FCFA)	2	2,1	2	2	1,9

Source: Opérateurs and ARPCE

Total mobile telephony market revenue rose by 6.4% in Q2-21, compared with Q2-20. Indeed, from 30.2 billion CFA francs in Q2-20, total market revenue reached 32.1 billion CFA francs in Q2-21. Combined outgoing (voice) and incoming (Voice) revenues represented 92.41% of total revenues in Q2-21. Outgoing revenue (Sms) represented 7.58% of total revenue, followed by incoming revenue (Sms), whose share was almost zero..

We are seeing an increase in outgoing traffic (voice and sms). In fact, in the second quarter of 2021, total outgoing traffic (the sum of on-net<sup>14</sup>, off-net<sup>15</sup> and international outgoing traffic) reached over 1.14 billion minutes. On-net traffic accounts for 98.1% of this, compared with 1.3% for off-net traffic and 0.6% for outgoing international traffic. A retrospective look at the breakdown of total outgoing traffic shows that the majority of calls made by operators' subscribers are intra-net (on-net). Between Q2-20 and Q2-21, on-net traffic volume increased by 24.3%, while off-net and outgoing international volumes fell by 14.6% and 26.4% respectively.

As far as tariffs are concerned, operators offered services based on low tariffs. Between Q2-20 and Q2-21, the weighted outgoing rate fell from 28FCFA to 25FCFA per minute. Only the international rate increased by 12.9% compared with Q2-20. All in all, lower prices boosted traffic by 23.1%.

All in all, these factors show and explain why mobile telephony is exploding in the Congo

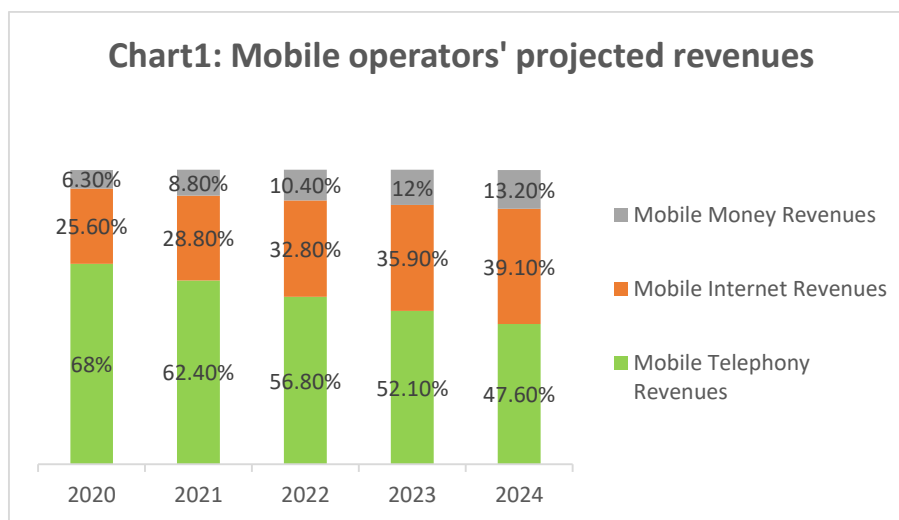
### 2.2. Significance and impact of mobile money in the Congolese digital economy

This first change is followed by a second change within telecoms services. This is the growth of mobile financial services (mobile money) in relation to traditional services such as voice, SMS and mobile Internet. To measure the growing importance of mobile money, we will follow its evolution in the CEMAC zone, and then present our own survey on the impact of mobile money on informal sector agents. First, a few graphs give us an idea of the overall trend.

<sup>14</sup> On-net: this term designates an intra-network relationship, i.e. within the same network. Calls, sms, traffic, revenue, etc. are generated by a subscriber of operator A in connection with another subscriber of operator A.

<sup>15</sup> Off-net: this term refers to an inter-network relationship between two operators. Calls, sms, traffic, revenue, etc. are generated by operator A in conjunction with operator B.

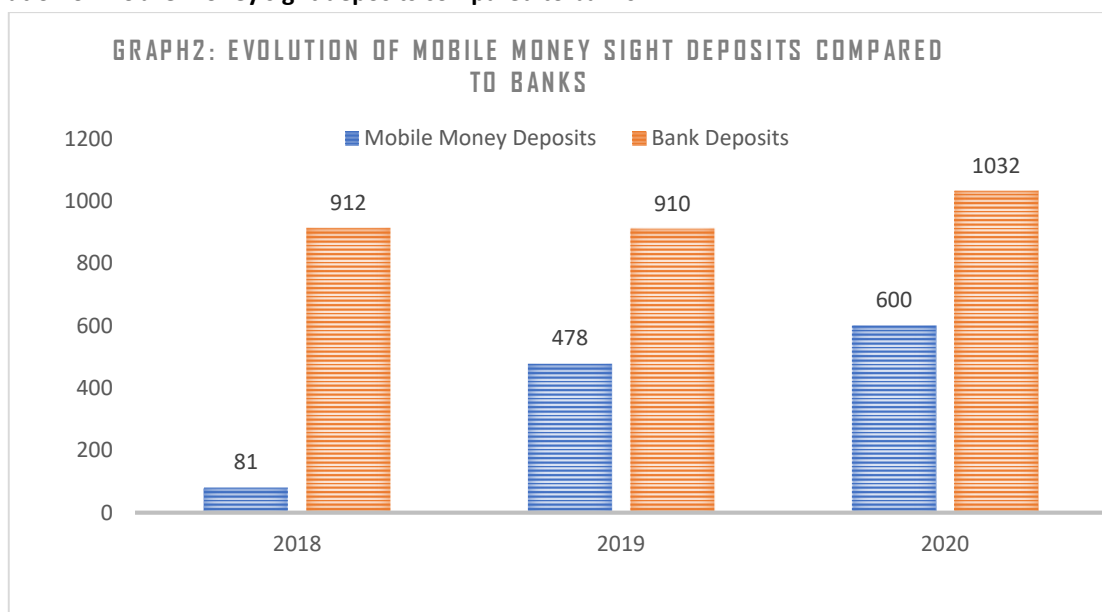
## Changes in Mobile Telephony in Congo-Brazzaville



Source: ARPCE, 2021b

This graph shows current trends and projections for mobile operators' revenues (ARPCE, 2021b). It can be seen that mobile telephony revenues are declining in favor of mobile Internet and mobile money. A projection to 2024 shows that the market share of mobile telephony revenues would fall from 68% in 2020 to 47.6% in 2024, a loss of around 20.4 points. Mobile Internet revenues could fall from 25.6% to 39.1% over the same period. As for mobile money revenues, they could represent up to 13.2% of total revenues by 2024. This trend is confirmed by the following graph2.

### Graph2: Evolution of mobile money sight deposits compared to banks



Source, ARPCE, 2021b

Between 2018 and 2020, sight deposits in the banking sector rose by 13.1%, from FCFA 912 billion to FCFA 1,032 billion. Over the same period, deposits on cell phone operators' networks rose by 640.7%, from FCFA 81 billion to FCFA 599 billion, or more than 58% of banking sector sight deposits.

Overall, then, in view of the above data, it can be said that mobile financial services are revolutionizing mobile telephony services. These graphs are of particular interest. Firstly, they show the ever-growing importance of mobile money to the detriment of other cell phone services, with the exception of mobile Internet. Secondly, for the time being, mobile money is developing more strongly in countries with low banking penetration rates. This means that technological innovation is revealing markets that were once considered unimportant. Thirdly, and perhaps most importantly, this second mutation will culminate in the Congolese telecoms universe. When cell phone operators take the plunge and offer these financial services directly, without going through the banks, they will become either competitors or an alternative to traditional banks. Today, these operators are playing the partnership

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card. All the more so as, with their high market shares, they are likely to be in a dominant position in the banking sector in a few years' time.

Let's take a detailed look at how mobile money has evolved, first in the CEMAC zone, then in Congo.

CEMAC has been lagging behind East Africa<sup>16</sup> in mobile money development. In 2017, mobile money penetration was particularly high in Gabon (43% of the population aged over 15 had an account in 2017, compared with 6.7% in 2016). For the other countries, this penetration was more modest: 16% of the adult population in the DRC in 2017, 15% in Cameroon and Chad, and 6% in Congo. By way of comparison, penetration was 73% in Kenya at the same period.

This lag in mobile money development can be justified by the lag in cell phone penetration. While the telephone penetration rate was 70% on average for sub-Saharan Africa in 2017 according to the World Bank<sup>17</sup>, it was only 25% in the Central African Republic and 43% in Chad and Congo. However, the main limitation is that mobile operators are prohibited from providing an international transfer service. Outgoing transfers remain the prerogative of banks and money transfer companies (Western Union, Money Gram, etc.). Last but not least, the 2011 regulations, which required mobile operators to build an offering in partnership with a banking institution, may have slowed the rollout of mobile money.

It was only when this same regulation allowed mobile operators to be considered as direct intermediaries without going through a bank that we saw a spectacular development of mobile money in almost all CEMAC countries, as attested by the CEMAC report of 2020<sup>18</sup>. The activity remains dominated by Cameroon, which, with 19.5 million accounts, holds 64.89% of the total number of payment accounts in CEMAC, followed by Congo (7.1 million) and Gabon (2.7 million). In terms of number of transactions, payment service providers in Cameroon carry out 73.13% of the community's transactions, followed by Gabon (16.69%) and Congo (9.25%). These three countries respectively accounted for 99.07% of the number and 98.84% of the value of transactions carried out in the CEMAC in 2020. Since then, the development of mobile money, encouraged by new regulations and greater interoperability, has enabled the emergence of new financial services, such as savings and credit. Indeed, in the CEMAC region, it is now possible to pay with a cell phone throughout the CEMAC zone, thanks to the GIMACPAY network, developed and supervised by the Groupement Interbancaire Monétique de l'Afrique Centrale (GIMAC).

In the Congo, this acceleration in mobile money and underlying services is borne out by our survey. The survey covers 100 merchants, randomly selected in three districts of Brazzaville: Kintélé, Moungali and Mampassi. The choice of these districts is linked to the proximity of the interviewer. The aim of this survey is to identify the needs and expectations of informal sector players in relation to the banking offer; to find out how many informal sector traders have a mobile money account; to find out how often informal sector players use mobile money; to understand the motivations driving informal sector players to use mobile money; find out whether mobile money is beneficial to their business; find out which age group and gender use mobile money the most; find out what merchants prefer (between traditional banking and mobile money); investigate possible substitutability between traditional banks and operators

Of the 100 retailers surveyed, 64 had a mobile money account, compared with 36. Among merchants subscribing to mobile money services, 18 have an AIRTEL money account, 25 have an MTN money account and 21 have both networks. 22 merchants use their mobile money account to carry out transactions (sending, receiving money), 31 to save funds and eleven (11) use it for other services. As for the impact that mobile money has on their business, 41 merchants replied that it has an impact on their business, compared with 23 merchants. The age category shows us that young people are the most interested in mobile money services, with 39 young people versus 24 seniors and 1 elderly person. In terms of gender, the number of subscribers shows that men are the most interested in mobile money, with 34 men versus 30 women. As for their preferred sector, 8 work in the civil service, 18 in the private sector and 38 in the informal sector.

The survey reveals that mobile money has become a must-have in Congo-Brazzaville. It plays such an important role in the socio-economic fabric that politicians intend to make the digital economy a major lever for diversifying the Congolese economy<sup>19</sup>. It also confirms MTN's dominant position in the Congolese telephony market. We also note the phenomenon of multiple network ownership. This is explained by the lack of interoperability between the two operators. Finally, the survey also shows that the main reasons for using mobile money are savings, money transactions and other services. This clearly shows that there is a huge need for financial services, a need not met by traditional banks.

<sup>16</sup> <https://www.tresor.economie.gouv.fr/Articles/f9adb035-2928-40a5-a462-dddfc0bb525c/files/622df093-5df8-4317-a26e-de9f0fcee08c#:text=Le%20nombre%20de%20transactions%20financi%C3%A8res,Cameroun%20et%2018%20%25%20au%20Gabon>.

<sup>17</sup> <https://www.aa.com.tr/fr/afrique/afrique-la-t%C3%A9l%C3%A9phonie-mobile-vecteur-de-d%C3%A9veloppement/2530801>

<sup>17</sup> <https://www.beac.int/wp-content/uploads/2021/10/Services-de-paiement-par-la-monnaie-%C3%A9lectronique-dans-la-CEMAC-EN-2020.pdf>

<sup>18</sup> Ditto.

<sup>19</sup> <https://www.tresor.economie.gouv.fr/Pays/CG/le-secteur-du-numerique>

## Changes in Mobile Telephony in Congo-Brazzaville

Mobile operators in the Brazzaville market are currently relying on the partnership system to offer financial services. Indeed, since 2013, two banks, BGFI and Ecobank, in collaboration with MTN and AIRTEL, have been providing this service to Congolese customers<sup>20</sup>. Recently, on February 25, 2020, a strategic partnership agreement was signed between MTN Congo and the Mutuelles Congolaises d'Epargne et de Cr dit (MUCODEC). The partnership aims to enable users of both companies to carry out financial transactions, i.e., make deposits or withdrawals on MUCODEC or MTN Mobile money accounts<sup>21</sup>. This agreement enables economic agents

who are not part of the banking system to access banking services by withdrawing money from ATMs. This broadens the range of mobile financial services, and is a driving force behind the opening of new accounts and the increased use of mobile money by the informal sector. Mobile money is becoming an instrument of financial inclusion, even if this remains modest (Nkouka Safoulanitou L, 2020). The digitization of the Congolese economy and this preponderance of mobile money are beginning to have consequences for state revenues (ARPCE, 2021b). Indeed, since October 2019, the State has levied a 1% tax on withdrawals made from the sight deposits of mobile money users. Between January and December 2020, this tax generated FCFA 4.8 billion. An electronic stamp has also been introduced. It's a fee of 50 FCFA on each electronic transaction collected, for the time being, by a limited number of legal entities. Between July and January 2020, the electronic stamp generated just over 102 million FCFA. This fee has only been effective since July 2020. Finally, a digital hub has been set up. This is a 1% fee on financial transactions paid by banking establishments in the Congo. It has only been in force since November 2020. From November to December 2020, this fee generated nearly 136 million F CFA.

## CONCLUSION

The aim of this article was to analyze changes in the Congolese mobile telephony sector. We have observed that mobile telephony in the Congo continues to grow, whether in terms of traffic, revenues or penetration rate. This growth is due to better regulation, but also to lower prices, facilitated by competition between operators. The development of mobile telephony has also seen a growing share of financial services offered by mobile money. These services are currently offered by traditional banks, in partnership with mobile operators. The transformation will reach its climax when the latter offer these same services without going through the traditional banks. This should lead to a new reconfiguration of the banking system, as the operators become formidable competitors to the same banks

## APPENDIX: Impact of mobile money on the informal sector

1-subscriber breakdown per network					
	MTN subscribers	AIRTEL subscribers	Subscribers with both networks	Subscribers with neither network	TOTAL
Merchant with a mobile Money account	25	18	21	---	64
Merchant with no mobile Money account	---	---	---	36	36
TOTAL	25	18	21	36	100

2- Impact of mobile money on the informal sector	Transaction	Savings	Additional services	TOTAL
Impact of mobile money on the informal sector	22	31	11	64
Impact of mobile money on the informal sector	22	31	11	64

	YES	NO	TOTAL
Merchants	41	23	64

<sup>20</sup> <https://www.agencecofin.com/telecom/2508-90893-congo-brazzaville-le-mobile-money-a-deja-genere-54-3-millions-de-revenus-a-ses-operateurs>  
<sup>21</sup> <https://www.agencecofin.com/telecom/2508-90893-congo-brazzaville-le-mobile-money-a-deja-genere-54-3-millions-de-revenus-a-ses-operateurs>

	Young	Senior	The elderly	TOTAL
Merchants	20	24	20	64

## Changes in Mobile Telephony in Congo-Brazzaville

### 3- Impact of mobile money on their business

	YES	NO	TOTAL
Merchants	41	23	64

### 4- Breakdown by age group

	Young	Senior	The elderly	TOTAL
Merchants	39	24	1	64

### 5- Breakdown by gender

	Man	Woman	TOTAL
Merchants	34	30	64

### 6- Breakdown by usage frequency

	Daily	Weekly	Monthly	TOTAL
Merchants	27	21	16	64

### 7- Breakdown by sector

	Civil service	Private sector	Informal sector	TOTAL
Merchants	8	18	38	64

**Source : author**

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## Challenges and Complexities of School Based Management: Level of Perception of the Pre-Service Teachers of Bulsu Hagonoy Campus



Maria Cecilia E. De Luna

**ABSTRACT:** Quality Education is the primary objective of School Based Management and its goal is to help educators in managing their schools efficiently and effectively. SBM requires all members of the school community to partake in the decision-making processes concerning budget, curriculum and personnel. Thus, the role of teachers starts with the student learning as the core and extends up to their involvement to SBM as member of the school community. In consonance with, the Level of Perception of the Pre-Service Teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School Based Management was determined to establish a plan of action for the assessed needs of students readiness on SBM.

**KEYWORDS:** School Based Management, Pre-Service Teachers, Quality Education

### INTRODUCTION

It is mandated on the Philippine Constitution that the State shall protect and promote the right of all citizens to quality education at all levels, and shall take appropriate steps to make such education accessible to all (Article XIV, Section 1 of the 1987 Philippine Constitution). In 2015, the Department of Education was pursuing policy reforms under the Basic Education Sector Reform Agenda (BESRA), to achieve the Education for All (EFA) objective. BESRA's Key Reform Thrust 1 (KRT1) is School-Based Management (SBM). SBM enables key stakeholders of school communities to actively participate in the continuous improvement of schools. By means of this empowerment the attainment of higher student learning outcomes could be achieved.

Principals, teachers, students as well as parents are given the responsibility for decisions concerning budget, personnel, and curriculum, which provides them greater control over the education process. With the involvement of teachers, parents and other stakeholders in the key decision-making processes, it is envisioned that a more effective learning environment for learners can be created.

Soon to be teachers are taught with various styles of management which are focused on classroom settings. Their managerial and people skills could be developed upon their direct experience to schools as they get hired. Hence, during their practice teaching they are exposed to the actual and real life scenarios of schools and have little encounter with the challenges and complexities of School Based Management which then leads to the study of their perception about SBM.

### STATEMENT OF THE PROBLEM

The general problem of the study is "To determine the Level of Perception of the Pre-Service Teachers of BulSU Hagonoy Campus to the Challenges and Complexities of School Based Management".

Specifically, the study sought answers to the following questions:

1. How may the profile of the Pre-Service Teachers of BulSU Hagonoy Campus Bulacan be described in terms of:
  - 1.1 Age;
  - 1.2 Gender;
  - 1.3 Length of practice teaching experience; and
  - 1.4 Level of school where practice teaching was conducted.
2. To what extent is the Level of Perception of the Pre-Service Teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School Based Management can be determined?
3. What plan of action shall be developed to address the Level of Perception of the Pre-Service Teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School Based Management?

# Challenges and Complexities of School Based Management: Level of Perception of the Pre-Service Teachers of Bulsu Hagonoy Campus

## SIGNIFICANCE OF THE STUDY

With the implementation of SBM, the Department of Education is doing its very effort to create an environment where all the people involved in the decision-making process will be committed to make change happen under a decentralized setup. Specifically, the aforementioned change should be ultimately geared towards the learners enjoyment of their right to quality education and other equally imperative rights such as the right to be protected from harm and abuse, to be safe and healthy, to play and to have leisure, to freely express their views, and to participate in decision-making processes in accordance to their evolving capacities. Thus, the level of perception of pre-service teachers of BulSU Hagonoy Campus on the challenges and complexities of the school based management will play a vital role on their readiness to the teaching profession.

The results of this study shall have a great impact on the following stakeholders:

**Pre-Service Teachers.** Graduating Teacher Education students will have an advantage of having a broader understanding of the school based management making them prepared on their future employment as teachers.

**Teacher Education Program of BulSU Hagooy Campus.** The top managers of the Teacher Education Program will have insights of how prepared are the Pre-Service Teachers after they graduate. Needs assesment can be done to fill in the blank holes on the mental and emotional readiness of soon to be teachers when it comes to school based management.

**BulSU Hagonoy Campus.** The administration of BulSU Hagonoy Campus can formulate and implement a plan of action through various interventions that will offer additional learning and understanding to Pre-Service Teachers about School Based Management.

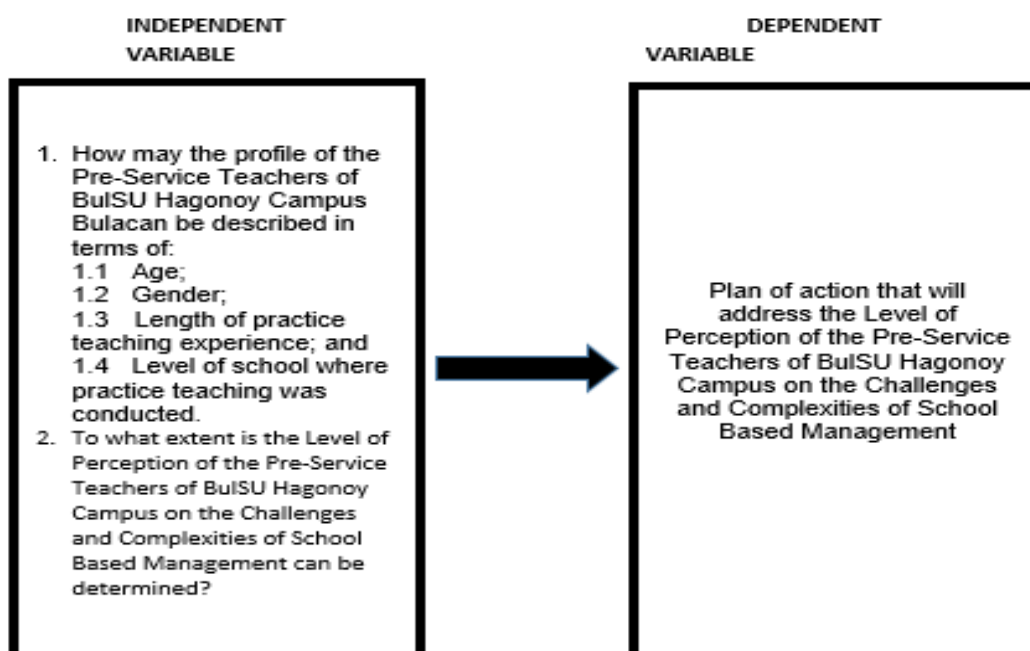
**Future Researchers.** The study can be considered to further examine challenges and complexities of School Based Management as well as its effect on the country's education landscape.

## SCOPE AND DELIMITATIONS

The study was only intended for the benefit of BulSU Hagonoy Campus Pre-Service Teachers since Teacher Education Program is one of its priority courses. The researcher have utilized mixed research methodologies to determine the level of perception of pre-service teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School Based Management. Also, the researcher used purposive sampling since only graduating students of the teacher education program will be the target respondents of the study.

The researcher used survey questionnaires in gathering the necessary information that have realized the objectives of this study. Moreover, the answers of the respondents on the survey questionnaires was based on their own perceptio and understanding about their practice teaching experiences. However, a time frame of 2 weeks (March 16 to March 30, 2019) was given to finish this undertaking.

### CONCEPTUAL FRAMEWORK OF THE STUDY



# Challenges and Complexities of School Based Management: Level of Perception of the Pre-Service Teachers of Bulsu Hagonoy Campus

## METHODOLOGY

This study have utilized Action Research that describes a broad diversity of analytical and evaluative research methods which intends to identify the problem in an organization and develop practical solutions to address them as soon as possible. The research instrument that was used in this study is divided into three parts, The profile of the respondents (Part I), Level of Perception of of the Pre-Service Teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School BaseManagement (Part II) and questions leading to the qualitative data (Part III). Purposive Sampling was utilized for the gathering of data, a written letter of request to conduct the study was prepared and then dessiminated to the target respondents of the study. The distribution and retrieval of the questionnaires was done by the researcher.

Frequency and percentage was used for descriptive presentation of data such as respondent's age, gender, length of practice teaching experience, and the level of school where the practice teaching was conducted. For the presentation of the level of perception, the researcher have used mean as the measure of central tendency, qualitative data are consolidated and was used for interpretation of results.

For the distribution of the respondents, there are 20% respondents from Bachelor of Elementary Education and 80% from Bachelor of Secondary Education.

## DISCUSSION

Management of schools and other education institutions are different from the management of other organizations. Their primary service is to deliver quality education to the learners. Education was classified to as both professional and mutual service at the same time.

It is considered to be a professional service for it requires intensive labor, client-orientation as well as good interaction. Also, active cooperation of the clients was vital to the delivery of quality education which then makes it a mutual service.

As key provider of education, the school will be equipped to empower its key officials with SBM, by making informed and localized decisions based on their peculiar needs towards the improvement of the educational system. The decision-making authority of state and district offices of the education system is being transferred to individual schools. However, the members of the school community should be aware of the high expectations on school based management and it includes their accountability.

In relation to this, principals, teachers and parents should be equipped in the dealings of SBM. For the teachers who are already in the service, various trainings and seminars on SBM are provided by the Department of Education.

Hence, the ideas of SBM are not included in the teacher education curriculum. A primer on management of schools was considered by the researcher as vital for the pre-service teachers to have, giving them grasps of the world they are about to live and serve with.

The researcher points a needs assessment on this matter and the consideration on the level of perception of pre-service teachers on the challenges and complexities of School Based Management was considered to be a good kick off.

## SUMMARY OF FINDINGS

The purpose of this undertaking is to determine the level of perception of pre- service teachers of BulSU Hagonoy Campus on the challenges and complexities of School Based Management. The findings of this study are summarized herewith;

Ninety percent (90%) of the respondents are from the ages 18-21 years old and the other 10% ages from 22 up to 30 years old. Seventy five percent (75%) of the repondents are female and 25 % are male. All of the respondents have four months of practice teaching experience. Twenty perpcnt (20%) of them have conducted their practice teaching at elementary school level, 70% at junior high school level and 10% at senior high school level.

To measure and interpret the evaluation results of the study, the following Likert scale was used;

## Challenges and Complexities of School Based Management: Level of Perception of the Pre-Service Teachers of Bulsu Hagonoy Campus

Rating	Descriptive Interpretation	Range of Weighted Mean	Description
5	Strongly Agree	4.51 – 5.00	The respondent strongly agrees that the challenges and complexities of school based management be measured in that corresponding criterion.
4	Agree	3.51 – 4.50	The respondent agrees that the challenges and complexities of school based management can be described with regards to that criterion.
3	Slightly Agree	2.51 – 3.50	The respondent slightly agree in that criterion and believes that some other factors must be considered for.
2	Disagree	1.51 – 2.50	The respondent is skeptical in the challenges and complexities of school based management in that particular criterion.
1	Strongly Disagree	1.0 – 1.50	The respondent believes that the challenges and complexities of school based management cannot be described in that corresponding criterion.

The Level of Perception of the Pre-Service Teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School Based Management are measured based on the evaluation criteria presented on the table below:

### Frequency Distribution and Descriptive Measures of the Level of Perception of the Pre-Service Teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School Based Management

Evaluation Criteria	Frequency					Mean	Descriptive Interpretation
	5	4	3	2	1		
1. School Based Management can allow competent individuals in the schools to make decisions that will improve learning;	33	56	9	2		4.20	Agree
2. School Based Management can give the entire school community a voice in key decisions;	21	57	19	3		3.96	Agree
3. School Based Management can focus accountability for decisions;	26	52	20	2		4.02	Agree
4. School Based Mangement can lead to greater creativity in the design of programs;	36	43	19	2		4.13	Agree
5. School Managemnet Based can redirect resources to support the goals developed in each school;	25	51	19	5		3.96	Agree
6. School Based Management can lead to realistic budgeting as parents and teachers become more	32	45	18	5		4.04	Agree

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aware of the school's financial status, spending limitations, and the cost of its programs;							
7. School Based Management can improve morale of teachers and nurture new leadership at all levels	34	44	16	6		4.06	Agree
8. School based Management can affect the roles of the school board and the superintendent and district office;	26	47	20	7		3.92	Agree
9. School Based Management includes budgetary decision;	23	43	26	8		3.81	Agree
10. School Based Management includes needs assessment and plan of action.	35	43	18	4		4.09	Agree
11. School Based Management must have the strong support of school staff.	33	44	17	6		4.04	Agree
12. School Based Management is more successful if it is implemented gradually.	34	44	13	9		4.03	Agree
13. School and district staff must be given administrative training, but also must learn how to adjust to new roles and channels of communication.	36	47	13	4		4.15	Agree
14. Financial support must be provided to make training and time for regular staff meetings available.	47	41	12	0		4.35	Agree
15. Central office administrators must transfer authority to principals, and principals in turn must share this authority with teachers and parents.	37	48	14	1		4.21	Agree
<b>Overall Mean</b>						<b>4.06</b>	<b>Agree</b>

The results of the evaluation showed that the measure of central tendencies of the responses of the respondents in all of the criterion have a range of weighted mean equal to 3.51 – 4.50 whose descriptive interpretation was “agree”. The highest mean was 4.35, which shows the level of perception of the pre-service teachers on the criteria that financial support must be provided to make training and time for regular staff meetings available. The lowest mean was 3.81 which shows the level of perception of pre-service teachers on the criteria that School Based Management includes budgetary decision. The overall mean of the evaluation was 4.06 which descriptive interpretation was “agree”. Based from the results the respondents have all agreed that the challenges and complexities of school based management can be described with regards to the criterion that was used.

For the qualitative data, the following questions were asked to the respondents; (1) What is your idea about school based management?, (2) From your personal view, what are the possible challenges and complexities of school based management?, and (3) What additional knowledge you have gained about school based management from your practice teaching experience?

About 75% of the respondents have responded that their ideas about SBM was basically the rules and regulations that are implemented for the concern of students, teachers and staff as well as how they dealt with classroom management during their practice teaching experience, how they interact with their cooperating teachers and how they responded to the behavior of their students. Nineteen percent (19%) of the respondents answered that SBM was all about the participation of all stakeholders in the decision-making processes of the schools. The remaining 16% have no answer on part three., some of them stated that they do not have any idea about SBM.

### CONCLUSION

Through the conduct of this study, the researcher had determined that the Level of Perception of the Pre-Service Teachers of BulSU Hagonoy Campus on the Challenges and Complexities of School Based Management varies on the quantitative vis a vis qualitative data. This establishes the fact that augmentation should be considered in the Teacher Education Program to realize the success of SBM and that soon to be teachers should be empowered to be the catalysts of change and their managerial and people skills should be developed.

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### RECOMMENDATIONS

In view of the findings and conclusion of the study, the following recommendations are drawn:

1. The Teacher Education Program of BulSU Hagonoy Campus may conduct a follow-up study on this action research to further establish the need assessment on Pre-Service Teachers readiness on SBM.
2. The Teacher Education Program of BulSU Hagonoy Campus may consider the following plan of action as its take-off on SBM primer;
  - 2.1 Conduct of Pre-test on SBM readiness of Pre-Service Teachers.
  - 2.2 Revisit on the curriculum to locate to which subject (i.e. Special Topics) SBM primer could be incorporated.
  - 2.3 Identification of SBM pertinent topics to be considered for the conduct of seminar for Pre-Service Teachers.
  - 2.4 Proper scheduling of seminars on SBM primer.
  - 2.5 Conduct of post-test after SBM primer.

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## An Overview of Issues and Options for Technology Innovation and Climate Change Policy



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**ABSTRACT:** Climate change is a prominent global environmental challenge that is predicted to have a significant impact in the future. Addressing this issue requires substantial reductions in greenhouse gas emissions, which, in turn, necessitated major technological changes in the energy and related sectors. Those changes are crucial to achieving emissions reductions at an acceptable social cost. Fortunately, there is some consensus at the international level regarding the need for action and solutions to combat climate change.

Both at the domestic and international levels, implementing policies that promote the necessary technological innovations for climate change mitigation presents institutional challenges. Developing and successfully implementing such policies requires navigating various perspectives on understanding the economics of technological innovation. To move forward and make progress in mitigating climate change, it is essential to explore viable pathways.

Technological advancements offer promising solutions for combating climate change. Leveraging technology can enable countries and companies to meet their emission reduction targets effectively. Emphasizing sustainable behaviors and household actions can play a crucial role in rapidly reducing carbon emissions. Moreover, the energy transition in Europe highlights the systematic approach needed to address the challenges of decarbonization.

The Intergovernmental Panel on Climate Change (IPCC) has emphasized the urgency of limiting global warming to 1.5 degrees Celsius, underscoring the need for transformative actions and innovation. A comprehensive understating of barriers, emotions, and motivational levers can inform effective pathways for lifestyle transformations and household decarbonization.

While technological innovation is pivotal, it should be complemented by policy interventions that target household consumption and behavioral decisions to achieve low-carbon futures. Behavioral change, combined with technological advancements, can provide a sustainable pathway toward reducing carbon footprints and mitigating climate change

The paper attempts to explain the various points of view on understanding the economics of technological innovations and a way forward on what appears to be possible for climate change mitigation.

**KEYWORDS:** climate change, emission, energy, innovation, technology

### 1. INTRODUCTION

Increases in global air and ocean temperature, rising global sea levels, reductions in ice cover, changes in atmospheric and ocean circulation, and alterations in regional weather patterns have all been observed throughout the twentieth century. These changes are primarily caused by the addition of greenhouse gases to the atmosphere, resulting from human activities such as fossil fuel use, deforestation, agriculture, and land-use changes. These human activities contribute to the accumulation of "heat-trapping" greenhouse gases in the atmosphere, leading to climate change. Predictions for the future include major global ecological changes.

The energy-related carbon dioxide (CO<sub>2</sub>) emissions are expected to more than double by mid-century due to expanding economies and populations. However, in order to stabilize greenhouse gas concentrations, significant reductions will necessary, which requires a radical transformation of the energy systems (Edmonds, 2001; Zhang et al., 2021). Addressing challenges such as reducing industry emissions and transforming energy systems in an environmentally friendly manner calls for wide-ranging and significant innovations. Climate change affects various systems, and it is important to address the different sources of greenhouse gases, including the agricultural sector, transportation sector, deforestation, land use, and industrial process such as fossil fuel combustion. Each of these causes of climate change requires corresponding technological solutions.

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Carbon dioxide emissions from energy systems are driven by energy demand in major components such as buildings, industry, and transportation. While it is unrealistic to expect zero-carbon technology to meet the decarbonization requirements across all sectors, it is necessary to develop or improve technologies that utilize alternative energy sources with lower or no greenhouse gas emissions to mitigate CO<sub>2</sub> emissions. Decarbonization of energy inputs should involve a balanced approach that includes the widespread adoption of efficient technologies across sectors.

A review in science challenges the claims that the Intergovernmental Panel on Climate Change (IPCC) that existing technologies are sufficient to follow trajectory for next hundred years. The review highlights the misconceptions regarding technological readiness and calls for "revolutionary changes" in mitigation technology including fusion, space-based solar electricity, and artificial photosynthesis (Hoffert et al., 2002). Fundamental research is crucial for developing innovative mitigation strategies to stabilize atmospheric CO<sub>2</sub> at levels below twice the preindustrial concentration. The most recent IPCC report on emissions scenarios presents a wide range of plausible development paths, with global primary power demand projected to range from 20 to 50 TW by 2050. In order to keep greenhouse gas concentrations below twice the preindustrial levels, total CO<sub>2</sub> emissions need to peak within next few years. Pacala and Socolow (2004) introduced a new way of thinking about the magnitude of the challenge and the available options, providing a useful framework for addressing the technological challenges and structuring innovation strategies to achieve the necessary changes in the atmosphere.

### **2. LITERATURE REVIEW**

In light of the fact that the world appears to be paying no deliberate attention to global carbon emissions, projections indicate that emissions will double from the current level of 7 billion tons of carbon per year to 14 billion tons per year by middle of the century (Pacala and Socolow, 2004). However, Pacala and Socolow propose a solution in the form of seven "wedges" of alternative technologies, each capable of displacing approximately 1 billion tons of carbon emissions annually by 2050. They argue that by implementing and scaling up these existing alternative technologies, we can effectively address the carbon and climate change challenges within the first half this century (Pacala & Socolow, 2004).

Their proposed options for reducing carbon emissions include improving automobile efficiency, reducing vehicle usage, enhancing power plant efficiency, implementing carbon capture and storage, promoting wind and nuclear power, encouraging renewable energy sources, reducing deforestation, implementing new plantation practices, and adopting improved soil management in agriculture. They emphasize that all these options are commercially viable, and by expanding their implementation, we can effectively tackle the carbon and climate problems.

Despite the raising prominence of climate change as a critical issue, researchers have highlighted that climate change policies are often influenced by multiple agendas within different interest groups (Olsen, 2007; Nugent, 2011; Kronsell et al., 2016). This has led to a lack of focus on the primary goal of decarbonizing the economy. Climate policy debates in Western economies frequently revolve around two contrasting views: the "technology push" and the "demand pull".

The 'technology push' perspective prioritizes the development of low greenhouse gas technologies as the main objectives, rather than focusing on emissions reductions directly. This approach considers technological advancements in the energy sector crucial for addressing long-term environmental issues such as climate change. It argues that the fastest and most effective solution lies in technological innovation to reduce GHG emissions. Additionally, imposing emissions limitations after technological innovations have reduced the costs of limiting emissions is seen as more favorable. Researchers advocate for further studies and development to create technological options that can achieve both climate stabilization and economic development (Wigley et al., 1996; Hoffert and Caldeira et al., 2002).

On the other hand, the "demand pull" viewpoint asserts that technological change primarily originates from the business sector, driven by economic incentives. This perspective prioritizes the regulatory measures, including technology-based limitations and GHG emission caps, as effective policies for mitigation (Grubb et al., 2002). However, there is a concern that profit-seeking businesses may only innovate technologies that reduce emissions at a lower cost to gain a competitive advantage, potentially hindering technological innovation for greater environmental impact (Weyant et al., 1999). The divergent perspectives on technological change led to policy recommendations that differ substantially in various dimensions.

In terms of responsibility, it is believed that we have the right to development and bear the responsibility to protect the right for others. According to the principle of "common but differentiated responsibility and respective capabilities" established by UNFCCC, it is our responsibility to fund the global emergency program aimed at reducing emissions. This entails bearing the costs associated with reducing emissions from our own consumption while also ensuring that those below the sustainable threshold can transition towards low-emission pathways (Baer et al., 2007).



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### **3. INNOVATION CHAIN**

Innovation is a crucial factor in addressing the issue of climate change. Climate change mitigation innovations include energy efficiency, low-carbon and non-carbon technologies, carbon reduction technologies, and carbon capture and storage technologies (Newell, 2009). However, the development and widespread adoption of low-carbon technologies across various sectors and countries are progressing too slowly to ensure climate stability (Matos et al., 2022). Government direction and support are necessary to drive the required innovation for low-carbon options, as industries are unlikely to risk significant capital investments without strong policies in place. Recent years have seen improvements in the feasibility of innovative technologies such as renewable energy (e.g., solar photovoltaics and microinverters), smart grids, and distributed energy storage, thanks to increased deployment and resulting cost reductions (Viardot, 2013). Nevertheless, investments in low-carbon innovation remain insufficient, and significant increases are unlikely without stronger policymaker support (Reid & Toffel, 2009).

Controversial technologies, like "geoengineering" aim to intentionally alter the climate on a large scale to slow or reduce global warming. These proposals include injecting particles on the atmosphere, capturing and storing carbon underground, and deploying giant mirrors in space to deflect the sun's rays (Sovacool & Science, 2021)

Well-designed policies that include coordination between consistent carbon pricing, performance-based regulations, and public funding have shown promise (Veugelers, 2012). Many countries have implemented incentives for research and innovation, such as renewable portfolio standards (popular in North America) and feed-in tariffs (popular in Europe; Zhou et al., 2019). For instance, the European Union has provided billions of euros in co-funding to companies developing cheaper and more efficient solid-state batteries. Governments have played a significant role in stimulating demand for renewable energy in countries like China and Germany, resulting in a substantial increase in solar panel production (Arantegui et al., 2018). However, further support is necessary to accelerate the adoption of cleaner technological innovations, including procurement policies, carbon taxation, environmental and safety regulations, and tax rebates for consumers to offset the market power of incumbent technologies offering less environmentally friendly alternatives (Polzin & Friedemann, 2017).

Understanding the innovation process and the potential role of policy is critical. Grubb (2004) outlines six distinct stages of energy innovation in a market economy: basic research and development; technology-specific research development and demonstration; market demonstration, commercialization, market accumulation; and diffusion. Technological advancement and cost reduction are involved throughout these stages, but primary barriers and driving forces may differ.

Innovation process can vary significantly across different sectors, with some sectors taking longer or facing greater challenges. Sectors that require significant energy processing often involve large capital investments and long timescales, which increases risk and discourages private finance. While the Information Technology and pharmaceuticals sectors have made great deals strides in innovation, the power generation sector has seen minimal change, with the same fundamental technology dominating for nearly a century and private sector research, development, and deployment (RD & D) investments dwindling to less than 0.4% of turnover following the privatization of energy industries (Margolis & Kammen, 1999). This context sets the stage for considering low-carbon innovation policy. Government plays a crucial role throughout the innovation chain, although the nature of their involvement changes overtime and varies across sectors. Government fund basic and applied technology research and development, as well as some demonstrations, to establish a foundation for further advancements. They also need to define and enforce a regulatory structure that incentivizes the market value of low-carbon technologies through measures like carbon taxes, making climate change mitigation more feasible. Incentives to support the diffusion of low-carbon technologies can indicate that innovation will eventually be more rewarding.

### **4. INTERNATIONAL STRATEGIES ON CLIMATE CHANGE**

There is significant potential for beneficial international collaboration in publicly funded research and development (R&D) for low-GHG emission and adaptation technologies. Such collaboration can lead to scale economies, cooperative specialization, and mutual learning. While the costs of emission are borne by the countries implementing them, the advantages of reducing emissions benefit the entire global community. However, governments tend to seek international support for their own industries or technology innovations, especially when there is a potential for commercial success. This creates a reluctance to invest in technologies and industries of other countries. Intellectual property issues can also become sensitive when participants seek funding from a common source but keep their own sources hidden. These factors can lead to the development of unviable technologies within an international technology program. International law is often ineffective in providing public goods and each sovereign country is primarily concerned with benefiting from others' emission-reduction efforts (Carraro & Siniscalco, 1994).

To ensure effective international cooperation, strategies should have defined goals, such as an R&D strategy and mechanism, clear guidelines on the extent of participation by different countries, and accountability mechanisms. In cases of international

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emergencies, such as epidemics, countries come together to assess the situation and determine the required resources. Each country pledges whatever resources it can provide. A similar approach is needed to address the steady increase in GHG emissions that we are currently witnessing. The Paris Agreement of December 2015 is an important step forward in the International climate policy (Tol, 2017). International cooperation should focus on the development and acceleration of industrial participation in low-carbon technologies and various stages of innovation chain. International technology agreements as solutions for climate change must be better defined.

### **5. STRATEGIES AVAILABLE TO REDUCE THE CARBON EMISSION**

Wedges can be achieved through various means, concluding energy efficiency improvements, the decarbonization of electricity and fuel supply, and the implementation of biological storage in forests and agricultural systems. These options are already being used at an industrial scale and have the potential to be scaled up to effectively reduce carbon emission. However, achieving a wedge requires a carbon price trajectory, the specifics of which depend on several assumptions such as future fuel prices, public acceptance, and cost reductions through learning. To provide a straightforward case for the technological readiness of options already available in the marketplace, the following are some full-scale options that can complement the integrated assessment of carbon mitigation.

**Increased fuel efficiency:** Assuming there will be approximately two billion cars in three decades from now, which is roughly four times the current number, and that these cars will travel an average of 10,000 miles per year, one potential solution to reduce carbon emissions would if these cars achieved an average fuel efficiency of 60 miles per gallon (mpg) compared to the current average of 30 mpg, while keeping the fuel type and distance traveled constant (Pacala & Socolow, 2004).

**Efficient Buildings:** To reduce the emissions from buildings, one effective approach is to promote and integrate energy-efficient space heating and lighting systems in all types of buildings.

**Increased energy plant efficiency:** A potential wedge could be formed if, by 2054, twice as much as coal-based electricity were produced at a minimum efficiency of 60% instead of the current 40% efficiency.

**Replace coal with natural gas:** Natural gas power plants emit approximately half as much carbon dioxide per unit of electricity compared to coal plants. Therefore, a significant reduction in carbon emissions can be achieved by shifting a large portion of the current power generation from coal to gas (Pacala & Socolow, 2004).

**Wind energy:** To account for the intermittent output of windmills, we can equate 3 GW nominal peak capacity (3 GWp) with 1 GW baseload capacity. Therefore, to achieve a wedge of wind electricity that would displace coal electricity by 2054, it would require the deployment of 2000 GWp (Pacala & Socolow, 2004).

**Renewable hydrogen:** In 2054, renewable electricity can be used to electrolyze water and produce carbon-free hydrogen for vehicle fuel. If 4 million 1-MWp windmills are used to produce hydrogen, it could achieve a wedge of displaced gasoline or diesel fuel when utilized in high-efficiency fuel-cell cars. This intriguing advantage of wind-electricity over wind-hydrogen, with a factor-of-two carbon-saving advantage, becomes even more significant if the coal plant is less efficient or the fuel-cell vehicle is less efficient (Pacala & Socolow, 2004).

**Biomass fuel for fossil fuel:** Biofuels, such as ethanol, offer an alternative to fossil-carbon fuels and contribute to carbon reduction efforts. In 2054, biofuel wedge could be achieved by producing around 34 million barrels per day of ethanol, which would displace gasoline, given the ethanol itself is free of fossil-carbons. To accomplish this, the ethanol production rate would need to be approximately 50 times greater than the current global production rate, with Brazilian sugarcane and US corn being the primary source (Pacala & Socolow, 2004).

**Forest and agricultural soil management:** Reducing deforestation and implementing forest management practices can significantly contribute to carbon emission reduction. Additionally, practices such as conservation tillage, cover crops, and erosion control can help reserve carbon losses in soil.

Various options can be pursued to achieve carbon emission reduction, including energy efficiency, decarbonizing electricity, and fuel supply through strategies as such as fuel shifting, carbon capture and storage, nuclear energy, and renewable energy, and biological energy sources. A study by Gross and Bauen (2005), highlights the potential pathways to achieving very low carbon electricity systems within a decade, particularly when associated developed industries. The study indicates that it is possible to achieve very low carbon electricity at a low cost.

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Table 1 provides the summary of the survey and study conducted by Gross and Bauen (2005) as a part of the UK Energy White Paper and the precursor analysis of the UK Performance Intelligence Unit.

**Table 1. The current and projected medium-term costs of various electricity-generation technologies.**

Technology	Current cost (Us cents/kWh)	Medium term projections	Comments
Present fossil fuel plant			
Gas CCGT Coal	3-4 3.5-4.5	Depends on fuel prices	Gas price and volatility increasing. Modest capital cost decreases and efficiency gains may be offset by rising fuel prices
Very low carbon electricity technologies			
Carbon Capture and Storage (CCS)			Costs are based on engineering assessments; there is currently no market experience to allow for learning rate derivation. Although techniques are well known, they have not been tested for this application.
Nat. Gas with CCS	NA	4 – 6	
IGCC Coal with CCS	NA	5 – 8	
Nuclear Power	5 – 7	4 – 8	The industry provides extremely low-cost estimates. MIT and PIU have significantly higher numbers. Low historical learning rate.
Biomass			The cost of conversion varies greatly depending on the technology used, the scale, and the cost of the feedstock.
Co-firing with coal Electricity	2.5 – 5	2.5 – 5	
CHP-mode	5 – 15	5 – 9	
Wind Electricity onshore	6 – 15	5 – 12	
offshore	5 - 8 9 - 12	2 – 4 3 – 8	Evidence of the learning curve and strong market growth (30% pa) combined with good engineering data allows for a robust assessment for onshore. Offshore is less certain due to limited experience, but engineering assessment, learning rate extension/proxy indicates strong potential.
Tidal Stream/Wave	13 – 20	<15	Due to immaturity of technologies, the future costs are difficult to estimate, and the estimates are from parametric models of hypothetical costs. Uncertainties are huge for these technologies. Installed capacity roughly doubled during 2004, through new demonstration projects.
Grid connected PV			Strong market growth and a learning curve suggest cost reduction. Recent cost-cutting trends appear to have slowed, which could be due to temporary factors (price increases due to high demand) or to longer-term issues. Added value in applications close to end use.
1000 kWh/m2 /year (temperate)	50 – 80	15 – 25	
2500 kWh/m2 / year (tropics)	20 – 40	5 – 15	

The table presents a range of options for achieving low carbon emission, including carbon capture with storage, nuclear power, biomass, tidal Stream, wind electricity, and grid connected PV. These options have medium-term potential costs (5-6c/kWh). Gas turbines and onshore wind energy are comparatively less expensive per kWh, while PV may benefit from its small modular nature when it comes to end-user applications.

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In the transportation sector, the goal of atmospheric stabilization requires transport fuels with near-zero CO<sub>2</sub> emissions. Biofuels, electricity, and hydrogen are the main options, with the latter two being effective only if produced from very low net CO<sub>2</sub> energy sources (Gross & Bauen, 2005). Electric and plug-in hybrid vehicles can contribute to CO<sub>2</sub> reduction when powered by CCGT or low-carbon sources. However, the production of hydrogen for fuel cell vehicles from noncarbon electricity can be costly. A long-term, transition to low-carbon transportation could involve vehicles powered by biofuels, and low-carbon hydrogen, but the economics and pathways for these options appear to be more complex and potentially more expensive than those for electricity (Gross & Bauen, 2005).

Emerging technologies such as blockchains, additive manufacturing, the Internet of Things (IoT), autonomy, information and communication technologies (ICTs), and artificial intelligence (AI) can address managerial challenges related to climate change. Building and maintaining a low-carbon supply chain requires understanding the issues that arise in the upper tiers of the supply chain, which can be facilitated by digital technologies (Kesidou et al., 2019). These technologies also have the potential to significantly influence consumer behavior in relation to environment.

### **6. CONCLUSION**

Climate change is a pressing global issue that has worsened due to increased greenhouse gas emissions from fossil fuel reliance. Innovative solutions are crucial for combating climate change in the energy sector. This review examines various technologies and their potential for mitigating climate change. It emphasizes the need for substantial innovation, private sector engagement, and effective policy frameworks to transition to low-carbon industries. The identified options include wind turbines, photovoltaic arrays, gas turbines, carbon capture chemistry for hydrogen production, biofuels, and energy-saving devices. However, the effective transfer of publicly funded ideas to private-sector industries remains a challenge. Carbon pricing alone is insufficient for comprehensive carbon mitigation, requiring strong policies in less innovative sectors like power generation and buildings. International technology collaboration is complex but vital. By addressing these challenges and promoting global collaboration, significant progress can be made in mitigating climate change.

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ISSN[ONLINE] : 2643-9875 ISSN[PRINT] : 2643-9840

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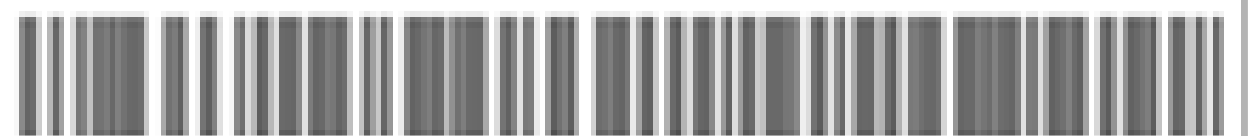
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