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## Comparison of the Performance of Sports and Health Physical Education Teachers between PNS and Non PNS Teachers in Kapanewon Godean Sleman



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**ABSTRACT:** This study aims to analyze the comparison of Physical Education, Sport and Health (PESH) teacher performance between civil servant and non-civil servant teachers in Kapanewon Godean Sleman. The research method used is quantitative research with a comparative descriptive approach. The research sample consisted of 35 PESH teachers, including 10 civil servant teachers and 25 non-civil servant teachers selected by purposive sampling technique. Data were collected through questionnaires adapted from previous research instruments. Data analysis was performed using descriptive and inferential statistical techniques. The study shows that there is no significant difference in the performance of Elementary School Physical Education, Sport, and Health (PJOK) teachers who are PNS and non-PNS in six aspects, namely lesson planning ( $p = 0.369$ ), lesson implementation ( $p = 0.185$ ), assessment of learning outcomes ( $p = 0.740$ ), coaching and guidance ( $p = 0.804$ ), additional tasks ( $p = 0.402$ ), and professional development ( $p = 0.492$ ). The  $p$ -values for each comparison are greater than the significance value of 0.05. It is concluded that there is no significant difference in the performance of PNS and non-PNS Elementary School PJOK teachers in the six observed aspects, namely lesson planning, lesson implementation, assessment of student learning outcomes, coaching and guidance of students, implementation of additional tasks, and professional development. The implication of this study is the importance of providing support and training to improve the quality of learning and performance of Elementary School PJOK teachers, both PNS and non-PNS.

**KEYWORDS:** PESH teachers, civil servants, non-civil servants, performance, elementary school

### INTRODUCTION

The low quality of education in Indonesia is one of the main concerns of the government. One of the factors that influence the quality of education is the quality of teachers. The way teachers teach can be influenced by their perspective on learning materials. Teachers who feel comfortable with the topic, they will be more motivated to provide effective and interesting teaching for students (Margot & Kettler, 2019: 1-16). Using effective non-verbal communication skills can have a positive impact on students' moods and their academic achievement (Bambaeroo & Shokrpour, 2017: 51). Qualified teachers can have a positive influence on the learning process and student learning outcomes. Therefore, improving the quality of teachers needs to be a priority in efforts to improve the quality of education in Indonesia.

Teacher certification is carried out in Indonesia to improve the quality of education in Indonesia. Through certification, teachers are expected to have adequate competence and qualifications in teaching so that they are able to provide effective and quality learning to students. Thus, teacher certification is expected to improve student learning outcomes and the overall quality of education in Indonesia. Although various studies have been conducted, strong evidence has not been found to show that teacher certification significantly improves student learning outcomes and teacher performance (Kusumawardhani, 2017: 590-618), in contrast to the results of research conducted by Chu et al., (2015: 14-24) demonstrated that having a teacher who received the highest rating from the local administrator had a positive impact on student achievement. This means that teachers who are rated as very good by local administrators can help students achieve better learning outcomes. The results of both studies suggest that there is still debate about the effectiveness of teacher certification as a means of improving student learning outcomes and teacher performance, and that other factors such as teacher quality and assessment also play an important role in achieving better student learning outcomes.

## Comparison of the Performance of Sports and Health Physical Education Teachers between Pns and Non PNS Teachers in Kapanewon Godean Sleman

A survey conducted in Arizona involving teachers who worked for three years found that good working conditions were very important for maintaining teacher performance at schools, which would ultimately improve the quality of education for students at these schools. This research provides important information for making better education policies to retain teachers and improve the quality of education throughout the country (Geiger & Pivovarova, 2018: 604-625). Working conditions include factors such as salary, workload, quality of teacher preparation programs, work environment, support from principals and staff, and opportunities for professional development (Toropova et al., 2021: 71-79)

One of the discussions that often arise in the world of education in Indonesia is inequality in teacher employment status, which may have an impact on teacher performance in carrying out their duties and responsibilities. There are several types of teacher employment status such as Civil Servants (PNS), Government Employees with Employment Agreements (PPPK), Honorary, Contract, and K2 which have differences in rights and obligations, including in terms of performance appraisal. Nonetheless, all types of teachers are responsible for developing curricula and learning in accordance with national education standards (Nuridin, 2021: 10-19).

Basic Education Data (Dapodik) is special data for physical education teachers which calculates that there is a need for one million teachers in public schools, but only 60% of that number is filled by PNS teachers. This resulted in less than optimal educational services. To overcome this, in 2021 the Ministry of Education and Culture will conduct a selection for PPPK procurement for Teacher Functional Positions. Even though more than half of teachers in Indonesia are civil servants, namely 1,520,354 people or 52%, there are still 48% of teachers who are not civil servants, so their welfare needs to be considered. A total of 704,503 people are honorary school teachers, equivalent to 24% of the total teachers in Indonesia, and 401,182 people are permanent foundation teachers. The results of the study stated that to ensure high quality teachers in Indonesia, mentoring, training programs for new teachers, or teacher orientation programs, and improving the quality of teacher training institutions (Suryani, 2021: 70-88).

The data above shows a general picture that there is inequality in the employment status of teachers in Indonesia and also the need for improving the quality of teachers to ensure optimal education services. From this general description, specifically and specifically this research will be focused on Physical Education, Sports and Health Teachers (PJOK) at the Elementary School (SD) level as subjects and by assuming the same problems. as a subject.

It is hoped that this research can provide useful information for the government in determining better education policies to improve the quality of education in Indonesia, particularly in terms of improving the quality of PJOK teachers. In addition, the results of this study can also provide useful information for teachers in improving their performance in carrying out their duties and responsibilities.

The focus of the main components assessed in the teacher performance assessment refers to the Teacher Performance Assessment of Permen PAN No. 16/2009 Chapter VII Article 13 Concerning Teachers' Functional Positions and Their Credit Points. The teachers who will be focused on in this study are PJOK SD teachers in Kapanewon Godean, Sleman, Yogyakarta. This research is focused on answering questions (1) are there differences in the performance of PJOK SD PNS teachers and non-PNS teachers in the aspect of lesson planning? (2) is there a difference in the performance of PJOK SD PNS teachers and non-PNS teachers in the implementation aspect of learning? (3) is there a difference in the performance of PJOK SD PNS teachers and non-PNS teachers in the aspect of assessing student learning outcomes? (4) is there any performance between PJOK SD PNS and Non-PNS teachers in the aspects of training and guiding students? (5) is there any performance between PJOK SD PNS and Non-PNS teachers in the aspect of carrying out additional assignments? (6) is there any performance between PJOK SD PNS teachers and non-PNS in the aspect of developing professional activities?

### METHOD

This type of research used is quantitative research. Quantitative research in this study was conducted by collecting data referring to the teacher performance assessment instrument Permen PAN No. 16/2009 Chapter VII Article 13 Concerning Teacher Functional Positions and Teacher Credit Scores. In this study, the data to be collected is teacher performance data based on civil servant and non-PNS employment status.

This research was conducted from January to March 2023 at Kapanewon Godean, Sleman, and Special Region of Yogyakarta.

The population in this study were all Elementary School (SD) Physical Education, Sports and Health (PJOK) teachers in the Kapanewon Godean area. Kapanewon Godean consists of 16 sub-districts namely, Berjo, Kwagon, Jering, Sangonan, Tebon, Krajan, Senuko, Sembuh, Ganchan, Rewulu, Wirokraman, Klajuran, Karanglo, Ngrenak, Candran, Krapyak and Dam. According to Dapodik data there are 31 SD, if on average then there are 2 SD in each Kapanewon Godean area. According to Dapodik data in Kapanewon Godean there are a total of 304 teachers with various subject tutors and there are 35 PJOK teachers.

## Comparison of the Performance of Sports and Health Physical Education Teachers between Pns and Non PNS Teachers in Kapanewon Godean Sleman

The determination of the sample was carried out randomly from a group of Physical Education teachers from the population. The method of determining the sample to be used is purposive sampling method, namely the sample is selected based on certain criteria. Before taking samples, basic data will be collected regarding each teacher such as name, age, years of service, education, and employment status. This data will be the basis for grouping samples based on employment status, namely PNS, PPPK, Honorary, Contract, and K2. The sample in this study has criteria (inclusion and exclusion) that must be met. Based on the criteria described above, a total of 35 research samples were obtained.

The research instrument that can be used in this study is a questionnaire. After the questionnaire is created, the next step is to test the validity and reliability of the questionnaire to ensure that the questionnaire can be relied upon to collect accurate and consistent data.

The data collection technique that will be used in this study is a survey through closed questionnaires distributed to respondents who have been selected as research samples. Data analysis that will be carried out in this study is to describe the characteristics of the data, normality test, homogeneity test and t test (Parametric or Non-Parametric).

### RESULT AND DISCUSSION

#### RESULTS AND DISCUSSION(LONG WEIGHT 60%)

##### Results

The data provided shows information about the sample size of 35 SD PJOK teachers, consisting of 24 male PJOK SD teachers and 11 female PJOK SD teachers. The percentage for each sex shows the proportion of the number of individuals who are respondents in this study.

**Table 1. Gender**

Gender	frequency	percent
Man	24	68,6
Woman	11	31,4
Total	35	100.0

From these data, it can be concluded that the number of respondents to the number of SD PJOK teachers was male more than female. The percentage for male respondents was 68.6%, while for female respondents it was 31.4%. This shows that in this study there was more participation from male respondents.

The data provided shows information about the educational level of the total sample of 35 PJOK SD teachers, with details of Diploma, Bachelor and Master education levels as follows:

**Table 2. Educational level**

Level	frequency	percent
D2	6	17,1
D3	1	2,9
S1	27	77,1
S2	1	2,9
Total	35	100.0

From these data, it can be seen that the majority of respondents in this study had Diploma 2 and Diploma 3 educational levels, respectively 6 (17.1%) people and 1 (2.9%) people, undergraduates, namely 27 people (77.1%), meanwhile, only 1 (2.9%) of the respondents had a Masters level of education.

The data provided shows information about the total sample of 35 PJOK SD teachers, with details of employment status as follows: 10 PNS teachers and 25 Non PNS teachers.

**Table 3. Employment status**

Employment status	frequency	percent
civil servant	10	28,6

**Comparison of the Performance of Sports and Health Physical Education Teachers between Pns and Non PNS Teachers in Kapanewon Godean Sleman**

Non civil servants	25	71.4
Total	35	100.0

From these data, it can be seen that the majority of respondents in this study were PJOK SD teachers with PNS status, namely 10 people or 28.6%, while the number of respondents to PJOK SD teachers who were non-PNS were 25 people or 71.4%. The normality test was carried out using the Shapiro-Wilk method ( $p > 0.05$ ). If the data is normally distributed, a follow-up test will be carried out, namely the homogeneity test. If the data is not normally distributed, data testing will be carried out using the non-parametric test (Mann-Whitney).

**Table 4. Normality test**

SD Performance	PJOK Teacher	Employment status	Shapiro-Wilk			Information
			Statistics	df	Sig.	
Learning Planning		civil servant	,868	10	,094	Normal
		Non civil servants	,786	25	,000	Abnormal
Implementation Learning		ofcivil servant	,889	10	,167	Normal
		Non civil servants	,819	25	,000	Abnormal
Assessment of Learning Outcomes		civil servant	,921	10	,369	Normal
		Non civil servants	,980	25	,883	Normal
Train and Mentor		civil servant	,781	10	,008	Abnormal
		Non civil servants	,917	25	.044	Abnormal
Additional Tasks		civil servant	,846	10	.051	Normal
		Non civil servants	,867	25	,004	Abnormal
Floating Activities	Professional	civil servant	,930	10	,451	Normal
		Non civil servants	,901	25	,020	Abnormal

It is known that the results of the normality test in the PJOK SD PNS and Non-PNS teacher groups on each teacher performance variable (learning planning, learning implementation, learning achievement assessment, training and guiding, additional assignments and developing professional activities) have normally distributed data and non-distributed data normal. So it was concluded that the next test was carried out through a non-parametric test (Mann-Whitney test).

Based on research data, teacher performance can be assessed starting from the learning planning process such as allocating time using the educational calendar, compiling annual programs, semester programs, compiling/improving syllabus, developing lesson plans, setting KKM, using the teacher's daily agenda, having face-to-face schedules, having and managing student attendance books and grade books. The results of the data can be known as in the following table:

**Table 5. Average PJOK Elementary School PNS and Non PNS teacher learning plans**

Performance	Employment status	N	Mean Ranking	Sum of Ranks
Learning Planning	civil servant	10	15.60	156.00
	Non civil servants	25	18.96	474.00
	Total	35		

Based on the research data in Table 5, it can be seen that out of a total of 35 PJOK SD teachers with PNS status, 10 are known to have an average of 15.60 lesson plans, while 25 PJOK SD teachers with Non PNS status are known to have an average of 15.60 lesson plans. 18.96. Then a comparative test was carried out between groups of PJOK SD teachers with civil servant and non-PNS status as follows:

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**Table 6. The Mann-Whitney Test of Learning Planning**

Statistic test	Learning Planning
Mann-Whitney U	101,000
Wilcoxon W	156,000
Z	-,897
asymp. Sig. (2-tailed)	,369
Exact Sig. [2*(1-tailed Sig.)]	,397

The table above shows a U value of 101 and a W value of 516. When converted to a Z value, the value is -.897. The Sig or p hammer value is 0.369 > 0.05. If the p value > critical limit is 0.05, then there is no significant difference between the two groups or which means there is no difference in the performance of PJOK SD teachers with civil servant and non-PNS status in Kapanewon Godean Sleman Yogyakarta in carrying out lesson plans.

Based on research data, teacher performance can be assessed from the process of implementing learning such as conditioning the class (preliminary activities), facilitating students to explore information (core activities), developing experiences elaborating information (core activities), developing learning experiences to confirm information (core activities), carrying out assessments process, assessing students' knowledge, character and skills (core activities), carrying out activities with reflection (closing), can be identified as in the following table:

**Table 7. The average implementation of PJOK SD PNS and Non PNS teacher learning**

Performance	Employment status	N	MeanRanking	Sum of Ranks
	civil servant	10	14.50	145.00
Implementation of Learning	Non civil servants	25	19.40	485.00
	Total	35		

Based on the research data in table 7, it can be seen that out of a total of 35 PJOK SD teachers with PNS status, 10 were known to carry out an average of 14.50 learning activities, while 25 PJOK SD teachers with Non PNS status were known to carry out an average of 14.50 learning sessions. 19.40. Then a comparative test was carried out between groups of PJOK SD teachers with civil servant and non-PNS status as follows:

**Table 8. Mann-Whitney test implementation of learning**

Statistic test	Implementation of Learning
Mann-Whitney U	90,000
Wilcoxon W	145,000
Z	-1.325
asymp. Sig. (2-tailed)	,185
Exact Sig. [2*(1-tailed Sig.)]	,212

The table above shows a U value of 90 and a W value of 145. When converted to a Z value, the value is -1.325. The Sig or p hammer value is 0.185 > 0.05. If the p value > critical limit is 0.05, then there is no significant difference between the two groups or which means there is no difference in the performance of PJOK SD teachers with civil servant and non-PNS status in Kapanewon Godean Sleman Yogyakarta in carrying out learning

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Based on research data, teacher performance can be assessed in assessing learning outcomes such as compiling question/test grids, carrying out tests in the form of daily tests, assessing noble character and student skills, using question cards, using variations and test forms, conducting test analysis daily, doing remedial and enrichment and analyzing the items can be seen in the following table:

**Table 9. The average assessment of teacher learning outcomesPJOK SD PNS and Non PNS**

Performance	Employment status	N	MeanRanking	Sum of Ranks
Assessment of Learning Outcomes	civil servant	10	18.90	189.00
	Non civil servants	25	17,64	441.00
	Total	35		

Based on the research data in table 9, it can be seen that out of a total of 35 PJOK SD teachers with PNS status, 10 are known to have an average of 18.90 assessments of learning outcomes, while 25 PJOK SD teachers with Non PNS status are known to have an average assessment of results. learn as much as 17.64. Then a comparative test was carried out between groups of PJOK SD teachers with civil servant and non-PNS status as follows:

**Table 10. Mann-Whitney test of learning outcomes assessment**

Statistic test	Assessment of Learning Outcomes
Mann-Whitney U	116,000
Wilcoxon W	441,000
Z	-,332
asympt. Sig. (2-tailed)	,740
Exact Sig. [2*(1-tailed Sig.)]	,760

The table above shows a U value of 116 and a W value of 441. When converted to a Z value, the value is -0.331. The Sig or p hammer value is 0.740 > 0.05. If the p-value > critical limit is 0.05, then there is no significant difference between the two groups or which means there is no difference in the performance of PJOK SD teachers with civil servant and non-PNS status in Kapanewon Godean Sleman Yogyakarta in assessing learning outcomes.

Based on research data, teacher performance can be assessed in training and guiding students such as guiding novice teachers in induction programs, guiding students to achieve achievement targets in extracurricular activities and providing guidance in students' scientific work can be seen as in the following table:

**Table 11. On average trains and guides PJOK SD PNS and Non PNS teachers**

Performance	Employment status	N	MeanRanking	Sum of Ranks
Train and Mentor	civil servant	10	18.65	186.50
	Non civil servants	25	17,74	443.50
	Total	35		

Based on the research data in table 11, it can be seen that out of a total of 35 PJOK SD teachers with PNS status, 10 were known to train and guide an average of 18.65, while 25 PJOK SD teachers with Non PNS status were known to train and supervise on



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average. guiding as much as 17.74. Then a comparative test was carried out between groups of PJOK SD teachers with civil servant and non-PNS status as follows:

**Table 12. The Mann-Whitney test trains and mentors**

Statistic test	Train and Mentor
Mann-Whitney U	118,500
Wilcoxon W	443,500
Z	-,248
asyp. Sig. (2-tailed)	,804
Exact Sig. [2*(1-tailed Sig.)]	,815

The table above shows a U value of 118.5 and a W value of 443.5. When converted to a Z value, the magnitude is -0.248. The Sig or p hammer value is 0.804 > 0.05. If the p value > the critical limit is 0.05, then there is no significant difference between the two groups or which means there is no difference in the performance of PJOK SD teachers with civil servant and non-PNS status in Kapanewon Godean Sleman Yogyakarta in training and mentoring.

Based on research data, teacher performance can be assessed in carrying out additional tasks such as being a deputy principal, homeroom teacher, extracurricular/student coach, carrying out picket assignments, being the head of the laboratory and being the UN/US supervisor, as can be seen in the following table:

**Table 13. Average additional assignments for PJOK Elementary School PNS and Non PNS teachers**

Performance	Employment status	N	MeanRanking	Sum of Ranks
Developing Activities	civil servant	10	15.75	157.50
	Non civil servants	25	18.90	472.50
	Total	35		

Based on the research data in table 13, it can be seen that out of a total of 35 PJOK SD teachers with PNS status, 10 were known to do an average of 15.75 additional assignments, while 25 PJOK SD teachers with Non PNS status were known to do an average of 15.75 additional assignments. 18.90. Then a comparative test was carried out between groups of PJOK SD teachers with civil servant and non-PNS status as follows:

**Table 14. Additional task Mann-Whitney test**

Statistic test	Additional Tasks
Mann-Whitney U	102,500
Wilcoxon W	157,500
Z	-,839
asyp. Sig. (2-tailed)	,402
Exact Sig. [2*(1-tailed Sig.)]	,418

The table above shows a U value of 102.5 and a W value of 157.5. When converted to a Z value, the magnitude is -0.839. The Sig or p hammer value is 0.402 > 0.05. If the p value > critical limit is 0.05, then there is no significant difference between the two groups or which means there is no difference in the performance of PJOK SD teachers with PNS and non-PNS status in Kapanewon Godean Sleman Yogyakarta in carrying out additional assignments.

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Based on research data, teacher performance can be assessed in developing professional activities such as conducting classroom action research (PTK), attending education/seminars, using information and communication technology, improving mastery of foreign languages, carrying out scientific publications and creating innovative works, as can be seen in the following table This:

**Table 15. On average developing teacher professional activitiesPJOK SD PNS and Non PNS**

Performance	Employment status	N	MeanRanking	Sum of Ranks
	civil servant	10	16,15	161.50
Floating Professional Activities	Non civil servants	25	18.74	468.50
	Total	35		

Based on the research data in table 15, it can be seen that out of a total of 35 PJOK SD teachers with PNS status, 10 are known to have an average of 16.15 professional development activities, while 25 PJOK SD teachers with Non PNS status are known to have an average of developing activities. profession as much as 18.74. Then a comparative test was carried out between groups of PJOK SD teachers with civil servant and non-PNS status as follows:

**Table 16. The Mann-Whitney test develops professional activity**

Statistic test	Developing Professional Activities
Mann-Whitney U	106,500
Wilcoxon W	161,500
Z	-.687
asympt. Sig. (2-tailed)	,492
Exact Sig. [2*(1-tailed Sig.)]	,506

The table above shows a U value of 106.5 and a W value of 161.5. When converted to a Z value, the magnitude is -0.687. The Sig or p hammer value is 0.492 > 0.05. If the p value > the critical limit is 0.05, then there is no significant difference between the two groups or which means there is no difference in the performance of PJOK SD teachers with civil servant and non-PNS status in Kapanewon Godean Sleman Yogyakarta in developing professional activities

### DISCUSSION

Studies conducted byFujii (2019: 681-704), it was stated that although employment status can affect teacher performance, it is not the only determining factor. There are other factors such as teaching experience(Papay & Kraft, 2015: 105-119), knowledge and skills, ability to adapt to curriculum changes, as well as the support and facilities available in schools which also affect teacher performance in planning lessons.

Studies conducted byMupa & Chinooneka (2015: 125-132)shows that there are several factors that cause student failure in grade seven in Zimbabwe, such as a lack of variety of teaching methods, inadequate preparation of learning media, limited learning resources, non-conducive learning environment, low teacher enthusiasm, lack of parental support, and lack of resources such as textbooks. This shows that there are many other factors that affect the effectiveness of teaching and learning in schools, besides the teacher's employment status.

There needs to be attention and efforts to improve the performance of all PJOK SD teachers, both those with PNS and non-PNS status. Efforts to improve performance can be carried out in various ways, including:

PJOK SD teachers need to receive training and skills development relevant to lesson planning, such as making lesson plans, selecting appropriate learning methods, and assessing learning outcomes. The results of research conducted byDerri et al., (2014: 778-783), it can be concluded that training in the skills of preparing lesson plans can improve the ability of prospective teachers

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to design more effective lesson plans. Especially in terms of setting appropriate instructional goals and objectives and planning student instruction and evaluation based on understanding of content, student needs, curriculum standards, and society.

Lesson planning for Physical Education can be prepared more effectively and innovatively by teachers, by selecting intermittent, alternate, irregular, and reinforced teaching models (Viciano & Mayorga-Vega, 2016: 142-152). Training in writing, using, and evaluating lesson plans in England found that there are various methods in making lesson plans, so it is important for every teacher to find a method that is suitable for himself and students in order to achieve meaningful learning outcomes (Capel et al., 2018: 964-982).

Studies show that increasing teacher competence in the era of the industrial revolution 4.0 can be done in several ways, such as improving the teacher recruitment system, implementing a bottom-up pattern of increasing teacher competence, optimizing training and development programs, and supporting e-literacy (Indira et al., 2020: 350-352).

The research findings show that teacher certification is not enough to guarantee teacher professionalism or competence. This is indicated by a lack of understanding of certification regulations, innovation, the relationship between concepts and contexts, and personal characteristics. The results of the research show that monitoring and evaluation, socialization and mentoring, education and training, and feedback are very important in improving teacher competence (Rusilowati & Wahyudi, 2020: 446-451).

Supervision is the process of supervising, controlling, and evaluating performance or activities. Implementation of academic supervision can be done through three stages, namely planning, implementation and evaluation (Setyaningsih & Suchyadi, 2021: 33). Good and quality supervision can help SD PJOK teachers improve their performance in lesson planning. Supervision from various quality sources can be more effective in improving classroom management skills in a professional manner (Weber et al., 2018: 39-49).

The results of the study explain that the principal's academic supervision has a significant effect on work motivation and teacher performance, while work motivation also has a significant effect on teacher performance (Prasetyono et al., 2018: 188-197). Student achievement can be influenced by high or low principal leadership and teacher competency (Wahyuddin, 2017: 215-226). Adequate support and facilities at schools, such as reference books, teaching aids, and learning media, can assist SD PJOK teachers in preparing and implementing effective and quality learning. Physical education facilities and infrastructure are available and used effectively to support educational activities in schools, taking into account needs analysis and activity priority scales, teachers can plan physical learning according to the needs of students and schools (Dewi et al., 2021: 291-297). To improve student achievement and school performance, one of the supporting factors is adequate infrastructure (Noer, 2019: 187-191).

Based on the results of this comparison, it can be concluded that PJOK SD teachers with PNS and non-PNS status have no differences in carrying out learning. Although there are differences in the proportions between the two groups of staff status in the low and high categories in the implementation of learning, this does not directly indicate that employment status is the only factor that influences the performance of PJOK SD teachers in the implementation of learning. There are several other factors that can also affect teacher performance, such as educational background, teaching experience, motivation, interest, and technical skills in teaching.

Educational background, for example, can influence the knowledge, abilities and skills possessed by an SD PJOK teacher in carrying out learning. Teachers who have a better educational background, such as having a physical education degree or teacher certification, tend to have better knowledge and technical skills in implementing learning. It is important for teachers and prospective teachers to have general competence in creating an efficient and effective educational process (Zhumash et al., 2021: 261-271). Good teacher competence must focus on three main elements, namely academic, professional, and personal (Alqiawi & Ezzeldin, 2015: 65-73).

Teaching experience can also influence the performance of an SD PJOK teacher. Teachers who have more teaching experience tend to have the ability to understand student characteristics and choose learning methods that are more effective and in accordance with student needs. Practical teaching experience has an impact on their pedagogical preferences, teaching competence, and motivation (Ismail & Jarrah, 2019: 493-510). Holistic and comprehensive strategies are needed to improve teacher skills, not just focus on increasing test scores (Blazar & Kraft, 2016: 146-170).

Motivation, interest, and technical skills in teaching can also influence the performance of a PJOK SD teacher in implementing learning. Educational content presented by the teacher can influence student learning outcomes through activating students' cognitive abilities. Meanwhile, teacher motivation can affect students' interest in learning through the enthusiasm in teaching that is felt by students (Keller et al., 2017: 586-614).

Teachers who have high motivation and interest in teaching, and have technical skills in teaching, tend to have better performance in carrying out learning. Pedagogic competence is an important factor because it relates to the teacher's ability to provide effective

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and interesting teaching through the use of various media. Teachers must continue to develop their pedagogical competencies by utilizing several development models, such as supervised field practice, community-based teachers, mentoring, job-embedded, and online learning(Hartini et al., 2018: 211-215)

Thus, employment status cannot be the only factor that influences the performance of a PJOK SD teacher in carrying out learning. However, the difference in the proportions between the two groups of employment status in the low and high categories in the implementation of learning still indicates that employment status can have a significant impact on the performance of a PJOK SD teacher in implementing learning. Therefore, efforts need to be made to improve the performance of SD PJOK teachers, especially for teachers who fall into the low category, both with PNS and non-PNS status, taking into account other factors that can affect a teacher's performance.

Based on the results of this comparison, it can be concluded that there is no difference in PJOK SD teachers with PNS and non-PNS status in assessing learning outcomes. Assessment of learning outcomes is an important aspect of the learning process carried out by SD PJOK teachers and is part of a teacher's performance.

One of the teacher's performance is evaluating and providing program feedback in learning(Sumarsono et al., 2019: 259-263). Evaluations conducted by teachers are used to strengthen the quality of teaching(Hallinger et al., 2014: 5-28). If someone gives a comment that contains specific solutions or general suggestions, it will most likely have an impact on improving or revising the learning material. Conversely, if the comments contain explanations, then this tends to have an impact on the implementation or application of learning materials in the classroom. These results can help in understanding the types of comments given by students or students, and can help teachers or instructors in determining appropriate actions to improve the quality of learning(Wu & Schunn, 2021: 365-394)

The results of the research that has been done show that PJOK SD teachers with PNS status tend to have lower learning outcomes compared to PJOK SD teachers with non-PNS status. There are many factors that can cause teacher evaluations to be in the low category, such as lack of knowledge and skills in evaluating learning outcomes, limited opportunities to participate in training or self-development related to evaluating learning outcomes, and other factors that also influence. To measure the effectiveness of teaching, the teacher must understand the purpose well. In addition, teachers must have the knowledge and skills in evaluating student learning outcomes(Chan et al., 2014: 275-289).

The results of research conducted byHammonds et al., (2017: 26-33)that Student Evaluation of Teaching (SET) is a tool commonly used in North America and England to improve and document teaching quality by inviting students to become active participants in improving teaching quality. Evaluation of the implementation of learning programs is important, this is important because it is a process of assessing the extent of a program(Naylor et al., 2015: 95-115)

It is necessary to carry out training and self-development for PJOK SD teachers with PNS status in relation to the implementation of the assessment of learning outcomes. In addition, PJOK SD teachers with non-PNS status who have good performance in assessing learning outcomes also need to be given appreciation and support to continue to improve their performance in this, so as to provide better learning outcomes for students.

Based on the results of this comparison, it can be concluded that there is no difference between PJOK SD teachers with PNS and non-PNS status in conducting training and mentoring. Training and guiding students is one of the important tasks a teacher must perform. Student-centered teaching can bring success in improving student learning(Shah, 2019:1-13). Students have motivation and confidence in their potential after participating in a coaching program conducted by the teacher(Madden et al., 2020: 297-312)

Teachers in training and guiding must have adequate skills in designing, implementing, and evaluating training and coaching programs for students. The training and experience possessed by a PJOK teacher can influence the quality of their performance in guiding and training students. Training conducted on teachers can be a promising alternative to models of coaching or professional training(Kraft et al., 2018: 547-588)

PJOK teachers with PNS status have more experience and training than non-PNS PJOK teachers, because government policies provide incentives and opportunities for PNS teachers to attend training and professional development. PNS teachers are also tied to the formal education system which encourages them to meet certain requirements in terms of training and professional development.

A survey conducted in Arizona involving teachers who worked for three years found that good working conditions were very important for maintaining teacher performance at schools, which would ultimately improve the quality of education for students at these schools. This research provides important information for making better education policies to retain teachers and improve the quality of education throughout the country(Geiger & Pivovarova, 2018: 604-625). Working conditions include factors such as

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salary, workload, quality of teacher preparation programs, work environment, support from principals and staff, and opportunities for professional development(Toropova et al., 2021: 71-97)

In order to improve the performance of PJOK teachers in training and mentoring students, it is necessary to provide equal support and opportunities in terms of training and professional development for all teachers, both those with PNS and non-PNS status. In addition, PJOK teachers also need to be encouraged to have strong motivation and commitment to their duties as teachers, and to be supported with adequate resources to be able to carry out their duties effectively.

Based on the results of this comparison, it can be concluded that there is no difference between PJOK SD teachers with PNS and non-PNS status in carrying out additional assignments. Research data shows that teacher performance can be assessed based on their ability to carry out additional tasks outside of their main duties as teachers. Some additional tasks that can be used as a reference in assessing teacher performance include being a vice principal, homeroom teacher, extracurricular coach or student council, carrying out picket assignments, being the head of the laboratory, and being the UN/US supervisor. This shows that teachers who are able to carry out these additional tasks properly can be considered to have good performance and are more productive in contributing to the school.

This interview study discusses the challenges faced by supervising teachers in basic education when they have to combine the roles of teacher and mentor as well. In a case study involving seven supervising teachers, it was found that they faced two main challenges, namely transferring responsibility to student teachers and intervening in class procedures. Supervising teachers feel that being a student teacher is their main task, while being a student teacher advisor is considered a side and additional task(Jaspers et al., 2014: 106-116)

From the results of the evaluation, it is necessary to take appropriate actions and in accordance with the needs of SD PJOK teachers. If the additional tasks performed are proven to interfere with the teacher's performance in carrying out the main task, it is necessary to review the implementation of these additional tasks. Meanwhile, if these additional assignments are proven to help teachers in improving their performance, it is necessary to provide appropriate support and assistance for teachers in carrying out these additional assignments.

Based on the results of this comparison, it can be concluded that there is no difference in PJOK SD teachers with PNS and non-PNS status in developing professional activities. The development of professional activities is an important factor in improving the quality of learning. The results of the study explain that efforts need to be made to increase teachers' understanding of how evaluation policies can impact teaching practice, especially for teachers who have limited career protection, such as novice teachers who do not have a stable working period, so that they can improve teaching quality and achieve better results in the evaluation process(Frasier, 2023: 21). Teachers reported that they acquired additional knowledge and skills for teaching based on the completion of the performance assessment, and felt well supported by their program in teaching and learning and completing the assessment process(Darling-Hammond et al., 2013:179-204)

Understanding of professional development can be carried out through various activities such as seminars, workshops, conferences, classes and exhibitions, which are designed to help teachers improve the quality of their work from the initial stage to retirement. It is important to pay attention to teachers to ensure their professional growth and development and improve the quality of teaching(Osamwonyi, 2016: 83-87). Training must be well planned, implemented continuously, and supported by adequate resources and incentives(Nzarirwehi & Atuhumuze, 2019: 19-36). The right incentives for teachers can also increase their motivation and performance, and the right pedagogy can help students learn more effectively and reach their optimal learning potential.(Duflo et al., 2015)

The results of this study conclude that there is a significant influence of certified teachers and principal leadership both partially and simultaneously on teacher performance(Hartiwi et al., 2020). Teacher incentive policies by providing financial bonuses to certified teachers in schools can increase the stability of the teaching staff and the continuity of teaching teachers in schools(Cowan & Goldhaber, 2018: 70-88)

The results of research conducted byPedaste et al., (2019: 389-399)standards for teacher professional competence in Estonia developed in 2005 to support beginner teacher education, teacher competency evaluation, and continuing professional learning. However, these standards have not been fully integrated with teacher career planning and professional development in schools and have not had a significant effect on the status of teachers in society. These standards can be effective instruments to support teacher professional learning when integrated with a broader assessment and evaluation framework and aligned with the standards.

In Indonesia, teacher performance appraisal is also an important part of the national education system. Teacher competency standards in Indonesia are set by the Ministry of Education and Culture and are used as the basis for assessing teacher

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performance. Evaluation of teacher performance in Indonesia also involves several parties, such as school principals, colleagues, and school supervisors.

However, as was the case in Estonia, the use of teacher professional standards and teacher performance assessments in Indonesia has not necessarily achieved the desired level of use and influence in improving the quality of education and teacher professional development. Therefore, it is necessary to continuously evaluate and improve teacher performance appraisal systems and the use of professional standards to ensure that they can actually be used to improve the quality of education and learning in Indonesia.

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## The Complex Reality of Illegal Migration: Unraveling the Myths and Facts in India



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**ABSTRACT:** Illegal migration is a complex issue that has garnered significant attention in India, leading to myths and misconceptions surrounding the phenomenon. This article aims to unravel the realities of illegal migration in India by examining its various facets and shedding light on the facts. By addressing key myths related to religious affiliation, national security, resource drain, and border control, this article provides a balanced perspective on the subject. Furthermore, the article explores the impact of illegal migration on Indian society, including its socio-economic dynamics, strain on infrastructure, and cultural diversity. The importance of comprehensive policies that encompass border management, socio-economic inclusivity, and collaboration with neighboring countries is emphasized. By navigating the complexities of illegal migration in India, it is possible to foster informed discussions and develop effective strategies for addressing this multifaceted issue.

**KEYWORDS:** Illegal migration, Complex phenomenon, Socio-economic factors, Vulnerabilities, Challenges, Economic impact, Political instability, Humanitarian circumstances, Human trafficking, Smuggling networks.

### INTRODUCTION

Illegal migration is a pressing and contentious issue that has captured significant attention in India. It is a complex phenomenon that involves the movement of individuals across borders without proper authorization or in violation of immigration laws. In the Indian context, illegal migration often refers to the influx of people from neighboring countries such as Bangladesh, Nepal, and Myanmar, who enter India without legal documentation or overstay their visas.

However, discussions and debates surrounding illegal migration in India have been marred by misinformation, stereotypes, and polarized narratives. It is crucial to delve deeper into the complex reality of this issue, separate myths from facts, and gain a comprehensive understanding of its multifaceted impact on Indian society. By doing so, we can foster a more informed and balanced discourse that moves beyond preconceived notions and addresses the real challenges and opportunities associated with illegal migration.

Understanding the intricacies of illegal migration requires a nuanced approach. It is not solely driven by religious factors, as is often assumed. While religious affiliation may be a component for some individuals, the phenomenon is influenced by a wide range of factors, including socio-economic conditions, political instability, persecution, and the pursuit of better opportunities. Therefore, it is imperative to avoid sweeping generalizations that perpetuate stereotypes and stigmatize particular religious or ethnic groups.

The prevalence of myths and misconceptions further complicates the issue. One prevalent myth suggests that all illegal migrants pose a direct threat to national security. While security concerns are undoubtedly important, it is crucial to acknowledge that not all individuals involved in illegal migration are engaged in criminal activities or have malicious intent. Many migrants seek better economic opportunities or escape from persecution and violence in their home countries. Recognizing this distinction is vital for developing effective policies and strategies that differentiate between those who pose a genuine threat and those who are seeking refuge or a better life.

Another myth often propagated is that illegal migrants drain India's resources and job opportunities. While it is true that the impact of illegal migration on resources and job markets is a complex issue, it is essential to consider the broader perspective. Migrants contribute to the economy through their labor, entrepreneurship, and consumption, which can stimulate economic growth and

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development. However, localized challenges may arise in certain sectors or regions, necessitating a balanced approach that ensures equitable resource distribution, skill development, and job creation.

Furthermore, it is crucial to move beyond simplistic narratives that attribute illegal migration solely to porous borders. While border security is undoubtedly important, addressing illegal migration requires a comprehensive approach. This approach involves not only robust border management but also efficient immigration systems, collaboration with neighboring countries to address the root causes of migration, and initiatives to foster regional stability and development.

Illegal migration also has wide-ranging impacts on Indian society. It can exacerbate existing socio-economic dynamics, leading to issues such as socio-economic marginalization, low wages, exploitation, and inadequate access to healthcare and education for both migrants and host communities. Concentrated migration patterns in specific regions can strain local infrastructure, including housing, healthcare facilities, transportation networks, and social services. Simultaneously, illegal migration contributes to the cultural diversity of India, adding richness and diversity to the nation's fabric. However, concerns related to assimilation, language barriers, cultural clashes, and preserving social harmony need to be addressed through inclusive social policies, community engagement, and efforts to promote cultural understanding.

### UNDERSTANDING ILLEGAL MIGRATION

Illegal migration is a complex and multifaceted phenomenon that involves the movement of individuals across borders without proper authorization or in violation of immigration laws. To gain a comprehensive understanding of this issue, it is crucial to delve into various aspects and factors that contribute to its occurrence. By examining the drivers, patterns, and consequences of illegal migration, we can better grasp its dynamics and develop informed strategies to address the challenges it poses.

- 1. Drivers of Illegal Migration:** To comprehend illegal migration, it is essential to explore the underlying factors that drive individuals to undertake such risky and unauthorized journeys. Push factors, such as poverty, lack of economic opportunities, political instability, armed conflicts, and environmental degradation, often compel individuals to leave their home countries in search of better prospects elsewhere. Pull factors, including the promise of better economic opportunities, political stability, higher wages, social benefits, and family reunification, attract individuals to destination countries. Understanding these drivers can help policymakers formulate targeted interventions to address the root causes and mitigate the need for illegal migration.
- 2. Migration Patterns and Routes:** Illegal migration is characterized by diverse migration patterns and routes. These pathways can be influenced by geographical proximity, historical ties, socio-economic factors, and the availability of smuggling networks. By studying the patterns and routes, it is possible to identify hotspots, transit countries, and key entry points for illegal migration. This knowledge can aid in strengthening border controls, enhancing cooperation between countries, and developing regional approaches to manage migration flows more effectively.
- 3. Human Smuggling and Trafficking:** Human smuggling and trafficking often play a significant role in facilitating illegal migration. Smuggling networks profit from arranging and facilitating the unauthorized movement of individuals across borders, often exposing them to dangerous conditions and exploitation. Human trafficking, on the other hand, involves the exploitation of individuals through forced labor, sexual exploitation, or other forms of modern-day slavery. Understanding the dynamics of human smuggling and trafficking is crucial for combating these criminal activities and ensuring the protection of vulnerable migrants.
- 4. Socio-economic Impacts:** Illegal migration can have both positive and negative socio-economic impacts on countries of origin, transit, and destination. Countries of origin may experience brain drain, loss of skilled labor, and a reduced workforce, while remittances from migrants can contribute to economic development and poverty reduction. However, the burden on social services, labor market dynamics, wage suppression, and strain on infrastructure can pose challenges for destination countries. Analyzing these socio-economic impacts is vital for devising policies that maximize the benefits of legal migration while mitigating the adverse effects of illegal migration.
- 5. Humanitarian Considerations:** Illegal migration often involves vulnerable individuals, including refugees, asylum seekers, unaccompanied minors, and victims of trafficking. Understanding the humanitarian dimensions of illegal migration is crucial for ensuring the protection of human rights, providing access to asylum procedures, and addressing the specific needs of these individuals. It requires a comprehensive approach that combines border management with humanitarian responses, providing safe and legal pathways for migration, and addressing the root causes that force individuals to undertake illegal journeys.

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6. **Policy Responses and International Cooperation:** Effectively addressing illegal migration requires comprehensive policy responses and international cooperation. This includes strengthening border controls, enhancing legal pathways for migration, addressing the drivers of migration, combating human smuggling and trafficking, and fostering cooperation between countries of origin, transit, and destination. Developing comprehensive migration policies that balance security concerns with human rights considerations is crucial to managing illegal migration effectively.

Thus, understanding illegal migration entails examining its drivers, migration patterns, human smuggling and trafficking, socio-economic impacts, humanitarian considerations, and policy responses. By analyzing these various dimensions, policymakers, researchers, and stakeholders can gain a nuanced understanding of the complexities surrounding illegal migration and work towards developing comprehensive and sustainable solutions.

### MYTHS AND FACTS

**Myth 1:** Illegal migration is primarily driven by religious factors, particularly Muslims.

**Fact:** One common myth surrounding illegal migration is that it is predominantly driven by religious factors, with Muslims being specifically targeted. However, it is important to recognize that illegal migration is a complex phenomenon influenced by a variety of factors. While religious affiliation may play a role for some individuals, it is not the sole or defining factor. Socio-economic conditions, political instability, conflicts, and persecution are among the key drivers of illegal migration. It is crucial to avoid generalizations that perpetuate stereotypes and instead focus on a comprehensive understanding of the multifaceted causes behind migration.

**Myth 2:** All illegal migrants are a threat to national security.

**Fact:** Another prevalent myth is that all individuals involved in illegal migration pose a direct threat to national security. While it is essential to address security concerns and ensure effective border management, it is inaccurate and unfair to assume that every illegal migrant is engaged in criminal activities or has malicious intent. The motivations for illegal migration are diverse, with many individuals seeking better economic opportunities or escaping violence and persecution in their home countries. Distinguishing between those who pose a genuine threat and those who are simply seeking refuge or a better life is crucial for developing targeted and effective policies that prioritize national security without compromising humanitarian values.

**Myth 3:** Illegal migrants drain India's resources and job opportunities.

**Fact:** There is a common misconception that illegal migrants drain resources and job opportunities in the host country, in this case, India. However, the impact of illegal migration on resources and job markets is a complex issue that requires careful examination. While certain sectors or regions may experience localized challenges due to an influx of migrants, it is important to consider the broader economic contribution of migrants. Many migrants actively participate in the labor market, filling gaps in industries facing labor shortages and contributing to economic growth through their skills, labor, and consumption. Moreover, addressing resource distribution and skill development through comprehensive policies can help ensure equitable opportunities for both migrants and local populations.

**Myth 4:** India's porous borders are solely responsible for illegal migration.

**Fact:** It is often assumed that India's porous borders are solely responsible for the issue of illegal migration. While border management and security are undoubtedly important, addressing illegal migration requires a comprehensive approach that goes beyond border control measures. Effective solutions involve robust border management systems, collaboration with neighboring countries to address the root causes of migration, and a focus on improving the overall immigration system. Factors such as socio-economic disparities, political instability, conflicts, and human trafficking networks contribute to the complexity of illegal migration. By addressing these factors holistically, countries can work towards sustainable and long-term solutions.

Hence, debunking myths and understanding the facts surrounding illegal migration is crucial for fostering informed discussions and developing effective policies. Recognizing that illegal migration is not solely driven by religious factors, acknowledging the diversity of motivations among migrants, and dispelling stereotypes are essential steps towards comprehensive and evidence-based approaches. By addressing the complex realities of illegal migration, countries like India can find balanced solutions that prioritize security, uphold humanitarian values, and promote socio-economic development for all.

### Impact on Indian Society:

The impact of illegal migration on Indian society is multi-faceted and requires careful examination to understand its implications. By considering various dimensions, we can gain insights into the challenges and opportunities that arise from this complex phenomenon.

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- Socio-economic Dynamics:** Illegal migration can significantly impact the socio-economic fabric of Indian society. Migrants, especially those facing socio-economic marginalization, may encounter challenges such as low wages, exploitation, and limited access to healthcare and education. This can lead to social inequalities and exacerbate existing disparities within communities. Addressing these challenges requires targeted policies that ensure inclusivity, social integration, and the protection of migrants' rights. By providing access to social welfare programs, skill development initiatives, and labor market protections, India can work towards creating a more equitable and inclusive society.
- Strain on Infrastructure:** Concentrated migration patterns in specific regions can put a strain on local infrastructure. Housing, healthcare facilities, transportation networks, and social services may experience increased demand, potentially leading to overcrowding and resource shortages. Effective urban planning, infrastructure development, and resource allocation are necessary to ensure that host communities and migrants have access to essential services and a sustainable living environment. This requires proactive measures to anticipate population growth and address infrastructure challenges through collaborative efforts between local, regional, and national authorities.
- Cultural Diversity and Identity:** Illegal migration, particularly from neighboring countries, contributes to the cultural diversity of India. This cultural exchange can enrich society, promoting understanding, tolerance, and multiculturalism. However, it also presents challenges related to assimilation, language barriers, and potential cultural clashes. To foster social cohesion, inclusive social policies should be implemented, emphasizing community engagement, intercultural dialogue, and initiatives that promote cultural understanding and integration. By embracing diversity while nurturing a sense of shared identity, Indian society can leverage the benefits of cultural exchange brought about by migration.
- Labor Market Dynamics:** Illegal migration can impact the labor market by creating both challenges and opportunities. Migrants often contribute to the workforce in various sectors, including agriculture, construction, manufacturing, and services. They fill gaps in industries facing labor shortages, contributing to economic growth and development. However, the presence of a large undocumented workforce can also lead to issues such as wage depression, exploitation, and unfair competition. Balancing the interests of migrants and local workers requires comprehensive labor policies that protect the rights of all workers, ensure fair wages and working conditions, and prevent the exploitation of vulnerable individuals.
- Social Cohesion and Identity:** The presence of illegal migrants can sometimes create social tensions and challenges related to identity and social cohesion. Perceived cultural differences, language barriers, and economic disparities can strain relationships between migrant communities and host communities. Promoting social cohesion requires efforts to foster mutual understanding, respect, and dialogue. Encouraging interactions, community involvement, and initiatives that emphasize shared values and common goals can help bridge divides and build a more harmonious society.

Thus, the impact of illegal migration on Indian society is complex and multifaceted. While it presents challenges related to socio-economic dynamics, strain on infrastructure, and cultural integration, it also offers opportunities for economic growth, cultural diversity, and social enrichment. By implementing comprehensive policies that address the needs of migrants and host communities, India can navigate the challenges posed by illegal migration while maximizing the potential benefits. Such an approach requires a balance between protecting national interests, upholding humanitarian values, and fostering social cohesion and inclusive development.

### CONCLUSION

The complex reality of illegal migration in India necessitates a holistic approach that encompasses various aspects, including understanding the drivers, debunking myths, and addressing the socioeconomic and humanitarian implications. By unraveling the truths behind illegal migration, policymakers, researchers, and stakeholders can work together to devise comprehensive strategies that tackle the root causes and mitigate the challenges posed by this phenomenon.

**Firstly**, it is imperative to acknowledge the drivers that push individuals to undertake illegal migration. By addressing issues such as poverty, lack of economic opportunities, political instability, and environmental degradation, policymakers can create conditions that discourage individuals from resorting to unauthorized means of migration. Investing in education, job creation, and social welfare programs can provide viable alternatives, reducing the desperation that leads to illegal migration.

**Secondly**, debunking myths and dispelling misconceptions surrounding illegal migration is crucial for fostering informed discussions. By challenging stereotypes and providing factual information, society can develop a more empathetic understanding of the

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motivations and challenges faced by migrants. This can help combat xenophobia, discrimination, and negative narratives, fostering a more inclusive and tolerant society.

**Furthermore**, the socioeconomic impact of illegal migration on Indian society should not be overlooked. While it is true that illegal migration can strain resources and infrastructure, it is also essential to recognize the positive contributions migrants make, such as remittances and cultural diversity. Adopting a balanced approach that addresses the concerns of the host society while acknowledging the potential benefits of legal migration can help foster social cohesion and economic development.

Humanitarian considerations should also be central to any response to illegal migration. Protecting the rights of vulnerable migrants, including refugees, asylum seekers, and victims of trafficking, should be a priority. Access to asylum procedures, safe and legal migration pathways, and support systems for integration and rehabilitation are essential for upholding human rights and ensuring the well-being of those affected by illegal migration.

**Lastly**, collaboration with neighboring countries and international partners is vital for addressing the cross-border nature of illegal migration. By sharing information, coordinating efforts, and implementing regional strategies, countries can work together to address the root causes, disrupt human smuggling and trafficking networks, and enhance border management. This cooperation should be guided by principles of mutual respect, shared responsibility, and a commitment to upholding human rights.

In a nutshell, India must adopt a comprehensive approach to tackle the complex reality of illegal migration. By addressing the drivers, debunking myths, considering the socioeconomic impact, and embracing humanitarian considerations, India can develop effective policies that prioritize security, human rights, and socioeconomic development. By fostering understanding, empathy, and collaboration, India can navigate the challenges posed by illegal migration while upholding its humanitarian values and promoting inclusive growth for all.

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## Socio-Demographic Factors and Risk-Taking Among Cameroonian Motorbike Taxi Drivers



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**ABSTRACT :** The purpose of this article is to verify the link between socio-demographic factors and risk-taking among Cameroonian motorbike taxi drivers in relation to the wearing of helmets and the prohibition of alcohol consumption while driving. These factors are age, gender, experience, level of education and religious affiliation. 300 Cameroonian motorbike taxi drivers were interviewed using a questionnaire consisting of an introductory note, items from the Goggin scale (2007) and items from Ajzen's theory of planned behaviour (1991). These were selected using a random choice sampling technique and the results were analysed using one-way ANOVA. It is a link between socio-demographic factors and risk-taking among Cameroonian motorbike taxi drivers. This article provides information on the socio-demographic factors to be taken into account in risk-taking among motorbike taxi drivers, in order to address the issue of awareness and education programmes for them.

**KEYWORDS:** socio-demographic factors, road risk-taking, Cameroonian motorbike taxi drivers.

### INTRODUCTION

Road accidents in the world in general and in Cameroon in particular are a public health problem. And motorbike accidents are even more so, because drivers of these two-wheeled vehicles take risks to such an extent that accidents caused by them are constantly increasing. According to the General Delegation for National Security, the number of deaths in 2014 was 273, 275 in 2015, 276 in 2016, 278 in 2017, 279 in 2018, 281 in 2019 and 282 in 2020. According to the DGSN, in 2014 there were 453 injuries, 392 in 2015, 331 in 2016, 270 in 2017, 208 in 2018, 347 in 2019 and 486 in 2020. In view of the statistics on road accidents in Cameroon in general and those caused by motorbike taxis in particular, we observe that despite the preventive measures put in place by the Cameroonian government (prevention through education, prevention through training and prevention through repression) to efficiently reduce them, motorbike taxi drivers continue to adopt dangerous behaviours on the road. The general objective of this article is to show the link between socio-demographic factors and risk-taking among Cameroonian motorbike taxi drivers. This general objective is broken down into the following four specific objectives age is related to risk-taking among Cameroonian motorbike taxi drivers (OS1) ; the number of years of experience is related to risk-taking among Cameroonian motorbike taxi drivers (OS2) ; the level of education is related to risk-taking among Cameroonian motorbike taxi drivers (OS3) ; and finally religious affiliation is related to risk-taking among Cameroonian motorbike taxi drivers (OS4). Our general hypothesis is entitled : there is a significant relationship between socio-demographic factors and risk-taking among Cameroonian motorbike taxi drivers. This general hypothesis is operationalised into the following four specific hypotheses: there is a significant relationship between age and risk-taking among Cameroonian motorbike taxi drivers (HS1); there is a significant relationship between the number of years of experience and risk-taking among Cameroonian motorbike taxi drivers (HS2) there is a significant relationship between the level of education and risk-taking among Cameroonian motorbike taxi drivers (HS3) and finally there is a significant relationship between religious affiliation and risk-taking among Cameroonian motorbike taxi drivers (HS4).

### Age and risk-taking

Several studies reported by Ragot and MunduteGuy (2005) have highlighted the link between age and risk-taking behaviour in the area of road safety. They mention the fact that the risk is greater for young people than for adults. Similarly, the work of Huang and Preston (2004) ; Yannis et al. (2005) ; Zambon and Hasselberg (2006a) mentioned a greater risk for young motorcyclists both in terms of crash involvement and severity. These studies also agree that young people have an attitude that values risk-taking and that they most overestimate their driving skills, especially in critical situations, and most underestimate the danger of the situation. Several recent experimental studies have found a positive and significant effect of age on risk taking (Brauw & Eonezou, 2014 ; Carpenter & Cardenas, 2013). They also found a positive, but small, effect among fishermen in South Africa. The results of

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Carpenter and Cardenas (2013) are drawn from a sample of 3109 individuals in 6 major Latin American cities. The experiment by Brauw and Eozenou (2014) concerned risk preferences among farmers in Mozambique. There is thus a certain convergence of results, all the more remarkable as it concerns very different populations and the methods used were different. Similar results were found by Raynaud and Couture (2010) for French farmers.

However, some studies have found a negative effect of age on risk-taking (Dohmen et al. 2011 ; Yesuf & Bluffstone, 2009). But the most frequently observed empirical result is the absence of a significant effect of age, a result already present in the work of Binswanger (1980). More recent studies have confirmed those obtained by Binswanger (1980), in particular Henrich and McElreath (2002), Galarza (2009), Charness and Villeval (2009) and Tanaka et al. (2010).

### **Gender, experience and risk taking**

Gender has been identified as a key variable in understanding adolescent risk-taking. Indeed, most studies (Coppens & Gentry, 1991 ; Rosen & Peterson, 1990) show that boys engage in more risky behaviour than girls. In addition, boys compared to girls tend to identify situations as less risky (Hiller & Morrongiello, 1998).

In terms of accidents, the results of Ragot and Munduteguy's (2005) work show that a two-wheeler driver with ten years of driving experience has a 38% lower probability of accident than a two-wheeler driver of the same age but with only one year of driving experience. Other work (Tiffin & Mc Cormick, 1958) shows a lower accident rate for more experienced operators compared to less experienced operators. Bauge and Vigneron (1983) note a progressive decrease in the risk of being injured as the individual acquires seniority at the workstation (Rousseau & Monteau, 1991).

### **Level of education and risk-taking**

Since the problem of non-application of road safety measures in the motorbike transport sector is partly due to the low level of education of motorbike drivers, we admit that road safety education must be an integral part of the education provided to children in and out of school. Although the youngest children are not yet able to adapt to complex traffic problems, and may have spontaneous dangerous behaviours, education will prepare them for the task of future road users and help them develop the necessary skills (Ndjiepmo, 2008). Although occupational choice is a risky decision, it is also closely interdependent with the level of education that improves managerial ability (Antunes & Cavalcanti, 2002 ; Hartog et al., 2003). An individual with a high level of education will be a better manager and will be more likely to move from self-employment to paid employment.

For Savolainen and Mannering (2005), the persistent increase in motorbike fatalities and injuries in recent years has raised safety awareness and drawn attention to the role that rider training and education can play in reducing crash rates. In this study, a sample of motorcyclists was selected to be used for the analysis of the impact of motorcycling on the environment and on the health of the population. In this study, a sample of Indiana motorcyclists was used to estimate statistics on the effectiveness of existing training programmes in reducing crash probability. Statistical models for motorcyclists' speed choice and helmet use behaviour were also estimated. The results showed that those who started motorcycle training courses were less likely to be involved in a crash than those who did not, and that those who took the course from start to finish and more than once were significantly less likely to be involved in a crash.

### **Religious affiliation and risk taking**

God's perceived control over life events is studied in terms of religious beliefs in the belief literature, with reference to conventional religious doctrines. The literature on the effect of religious beliefs is extensive. There is work that shows the beneficial effects of religious beliefs in the health field. They show that patients' religious beliefs can improve their adaptation to therapy, especially in the case of serious illnesses. For example, Howsepian and Merluzzi's (2009) study shows the positive effect of adherence to religious beliefs on cancer adaptation. In their study, they collect data from 164 cancer patients undergoing treatment and find a strong correlation between religious beliefs and social support, two variables that promote patients' adaptation to their therapy. They show that perceived self-efficacy mediates the positive effect of social support on cancer adaptation.

Seirmarco et al (2012) conducted a study of 607 people more than two years after the September 11, 2001 attacks in the United States of America. They find that after the attacks, there is little variation in participants' religious beliefs. However, the participants who believe less in God after the attacks are those who present the most psychopathological disorders (post-traumatic stress, deep depression). These participants were recruited from among those who had lost relatives in the attacks. These two examples illustrate the studies that show the positive effects of religious beliefs or beliefs in the control of God on health (Carpenter et al., 2012; Rosmarin et al., 2009). Thus, religious beliefs would allow individuals to manage stress due to various ailments they may experience in their daily lives. The results appear rather scattered when it comes to studies that deal with the effect of religious beliefs on engagement in risky behaviours. A study by Poulson et al (2008) shows that adherence to



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religious beliefs does not reduce alcohol use and engagement in risky sexual behaviour among adolescents, but the authors find a significant negative correlation between religious beliefs and drug use. In other words, the stronger the adolescents' religious beliefs, the less they engage in drug use. Other studies show that religious beliefs can have an effect on health behaviours when they interact with beliefs in moral values (Desmond et al., 2009).

The disparity of results in these studies can probably be explained by the fact that these studies address religious beliefs in their entirety without emphasising the power of God's control over life events among believers. This is indeed the idea that emerges from a study by Goggin et al (2007). These authors believe that, beyond religious beliefs (particularly in a religious doctrine), belief in God's control over behaviour and life events is a factor in engaging in protective behaviour. They develop and validate a scale to measure perceived God-control over adolescent risky sexual behaviour. They find strong negative correlations between scores on this scale and scores on intention to engage in risky sexual behaviour. In particular, participants who believe that God has control over their risky sexual behaviours have lower intentions to engage in such behaviours. This new line of research seems to show that the perception of God as an entity that regulates individual behaviours seems to favour the intention to engage in protective behaviours among adolescents. Thus, it appears from the literature that the controversy surrounding the effects of religious beliefs, or rather, beliefs in divine control, remains relevant. However, there is still not enough work that has addressed this factor in the field of road risk prevention.

Ngueutsa and kouabenan (2014) in an attempt to understand road users' behaviours in Cameroon, examine socio-instrumental control beliefs by looking at two control instances: the cultural group and God. They hypothesise a tendency to adopt less safe behaviours when road users believe in certain cultural practices or God as 'protectors'. 525 road users completed a face-to-face questionnaire measuring perceived ability to cope with dangerous situations without being worried, belief in God's control in risky situations, beliefs in the control of cultural practices supposed to protect life and safety behaviours. The results confirm the hypotheses in this case ; participants feel able to face dangerous situations without being worried when they adhere to cultural practices supposed to protect life and divine protection over dangerous traffic situations; this explains their less safe behaviours. These findings suggest that the beliefs of the target population should be taken into account when designing and communicating prevention messages to drive strong adherence to prevention messages and safer behaviours on the road.

Ngah Essomba (2017) proposes to study the influence of religious beliefs on life events. To speak of the power of religious beliefs over life events is to speak of the control over events that individuals attribute to God, gods or other higher forces. Certainly, belief in a Supreme Being is surrounded by multiple beliefs in invisible lower powers and recourse to these is more frequent than prayers to the one (Masson, 1990, p. 237). Belief in God does not exclude the need to appeal to other forces that are inferior to him but just as effective. In the western regions of Cameroon, families often appeal to their ancestors through ancestor cults (Fouellefak, 2005). Speaking of religious practices, apart from the practices of traditional religions (ancestor worship, belief in reincarnation, etc.).

The Bantu worship God when they celebrate a birth, a death, a marriage, an epidemic or a disaster, that is to say at the crucial stages, when our dependence on the Supreme Living One, the Source, is most apparent. It is indeed to him that we must address ourselves in this matter, it may be the rituals that are practised in religions stemming from the old testament, we have cults, masses, prayers, meetings, etc. Not all religions have the same way of worshipping the Supreme Being. Three main beliefs about the causes of accidents were identified in the overall discourse of the participants (n =292): natural accidents, mystical accidents and accidents caused by God the creator. With regard to the results obtained, Ngah Essomba (2017) observes that the French speak of natural accidents, i.e. accidents that have a natural cause (human, mechanical and infrastructural), whereas the Cameroonians resort more to beliefs to explain accidents to which they attribute mystical, divine, supernatural causes, etc.

Nkelzok and Djebi (2018) proposed to study the influence of irrational beliefs on risk behaviour among motorbike taxi drivers in Yaoundé. Specifically, the aim was to analyse the link between magic-religious, alogical or illusory beliefs and risk behaviour in urban motorbike taxi transport. Data were collected using a questionnaire from 250 motorbike taxis (Bend-skiners) selected using accidental and snowball sampling techniques. The questionnaire was structured as a Likert-type scale to assess the level of perception of irrational beliefs and their influence on risk behaviour. The results show that irrational beliefs have an influence on the risk behaviour of Bend-skiners.

## METHODS

Our study is quantitative, more precisely quasi-experimental. It was conducted in the city of Yaoundé. Indeed, the choice of Yaoundé as the site was motivated by the following five reasons: firstly, Yaoundé is a cosmopolitan city with several openings, it includes two state universities (University of Yaoundé I and University of Yaoundé II) which attract young people. Secondly, Yaoundé is our home town which limits the cost of transport for the survey. Thirdly, it is one of the cities in Cameroon where the road network linking several other cities (Douala, Bertoua, Bafoussam, etc.) is particularly dense. Fourthly, it is one of the cities in

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Cameroon with a large number of motorbike taxis (600,000) according to the Ministry of Transport's 2017 statistics and finally fifthly, it is the city in the Central Region with the highest motorbike taxi accident rate of about 14% (GN, 2010). As for the districts of Yaoundé, where we selected the participants, we chose the districts of Yaoundé IV, VI and VII because of their size, the largest district and the last of the districts in terms of creation respectively. Knowledge of the research site in any scientific investigation is an asset for the researcher. It makes it easier to monitor and understand the influences of the environment on the behaviour of the participants.

### Participants

Using the purposive sampling technique, 300 motorbike taximen aged between 14 and 50 years in the city of Yaoundé were selected. They were randomly divided into three groups: the experimental group (n=100), the control group (n= 100) and the neutral group (n= 100). To get the participants, we met with the presidents of the motorbike taxi associations who introduced us to their weekly general assembly meeting and introduced us as a researcher interested in the motorbike taxi accident problem. They allowed us to select those voluntary participants who met the criteria of our study (motorbike driver, working area, age). Before filling in the forms, we gave them a pencil, an eraser and a desk pad. At the end of this stage, we realised that the participants had answered all the questions in accordance with the various instructions. However, they mentioned that the questionnaire was too long and that they felt that the questions were repetitive. To address this concern of the motorbike taximen, we told them that the theory and methodology of our study dictated this. A debriefing session was held with the participants. In this study, the questionnaire was designed to collect information from motorbike taxi drivers in order to study the effect of Christian beliefs on risk taking. The questionnaire consists of four parts : an introductory note for the participants, a priming text (for the experimental groups), items from the Goggin scale (2007), items from the Theory of Planned Behaviour dimensions of road risk taking and socio-demographic factors. Our data analysis plan is based on quantitative analysis methods with the following variables: age, years of experience, level of education and religious affiliation correlated with risk taking among Cameroonian motorbike taxi drivers. The ANOVA used in this study is the one-factor ANOVA because our study has a single independent variable or factor and the objective is to test whether variations or different levels of our independent variable have a measurable effect on our dependent variable. As this test is robust due to the calculations to be performed, we processed the data collected by the SPSS (Statistical Package for Social Sciences) version 20.0 software.

## RESULTS

In this article, we have the results obtained from the different statistical treatments carried out as follows:

### Age and risk-taking among motorbike taxi drivers

**Table 1 .Variation of risk-taking dimensions according to age**

	Age					
	[14-24 years]		[25- 35 years]		[36-50 years]	
	M	SD	M	SD	M	SD
Attitudes	4.44	0.633	4.36	0.696	4.36	0.920
Injunctive norms	4.35	0.454	4.20	0.604	4.26	0.769
Descriptive norms	4.29	0.477	4.22	0.609	4.05	1.063
Perceived behavioural control	4.24	0.930	4.01	1.473	3.63	1.322
Intention	4.47	1.469	4.29	0.899	4.06	0.969
Overall averages	<b>4.35</b>	<b>0.796</b>	<b>4.21</b>	<b>0.856</b>	<b>4.07</b>	<b>1.00</b>

Note : M= Mean ; SD= Standard Deviation

Table 1 presents the means on the five dimensions (measuring risk-taking among motorbike taxi drivers). In general, participants as a whole tend to comply with road safety measures (M> 2.5) that suggest wearing a helmet and not drinking alcohol while driving. However, this tendency varies according to age. Specifically, participants aged 14-24 (M=4.35 ; SD=0.796) and those aged 25-35 (M=4.21 ; SD=0.856) were less likely to do so than participants aged 36-50 (M=4.07 ; SD=1.00). Indeed, in terms of attitudes towards helmet use and not drinking and driving, participants aged 36-50 (M=4.36 ; SD=0.920) and those aged 25-35 (M=4.36 ;

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SD=0.693) appear to have less favourable attitudes towards helmet use and not drinking and driving compared to participants aged 14-24 (M=4.44 ; SD=0.633). In terms of injunctive norms, it appears that participants aged 25-35 (M=4.20 ; SD=0.604) and those aged 36-50 (M=4.26 ; SD=0.769) appear to have lower levels of approval of helmet use and not drinking compared to participants aged 14-24 (M=4.35 ; SD=0.454).

Indeed, in terms of attitudes towards helmet use and not drinking and driving, participants aged 36-50 (M=4.36 ; SD=0.920) and those aged 25-35 (M=4.36 ; SD=0.693) appear to have less favourable attitudes towards helmet use and not drinking and driving compared to participants aged 14-24 (M=4.44 ; SD=0.633). In terms of injunctive norms, it appears that participants aged 25-35 (M=4.20 ; SD=0.604) and those aged 36-50 (M=4.26 ; SD=0.769) appear to have lower levels of approval of helmet use and not drinking compared to participants aged 14-24 (M=4.35 ; SD=0.454). In terms of descriptive norms, participants aged 25-35 (M=4.22 ; SD=0.609) and those aged 36-50 (M=4.05 ; SD=1.063) appear to feel that their significant others (colleagues, friends and relatives) do not always respect helmet use and the ban on drinking and driving, whereas participants aged 14-24 (M=4.29 ; SD=0.477) do. The results on perceived control related to wearing a helmet and not drinking and driving show that participants aged 24-35 (M=4.01 ; SD=1.473) and those aged 36-50 (M=3.63 ; SD=1.422) appear to perceive that it is difficult for them to wear a helmet and not drink and drive compared to participants aged 14-24 (M=4.24 ; SD=0.930). At the level of intention, participants aged 25-35 (M= 4.29; SD= 0.899) and those aged 36-50 (M= 4.06; SD=0.969) appear to be less willing to wear helmets and not drink alcohol while driving compared to participants aged 14-24 (M= 4.47; SD= 1.469). These results show that the means between the age categories are different, but they do not show whether these differences are statistically real.

**Table 2. Comparison of means of risk-taking dimensions among participants according to age**

Source	Dependent variable	Sum of Type III squares	Ddl	Mean of squares	F	Significance
Age	Attitudes	12,746	3	5,698	8,424	,057
	Injunctive norms	10,900	3	3,633	12,871	,010
	Descriptive norms	21,26	3	7,087	12,087	,014
	Intention	28,621	3	9,540	6,918	,007
	Perceived behavioural control	51,23	3	12,754	12,754	,000

Note : Ddl= Degree of freedom

Table 2 presents the results of the comparisons of the means obtained by the participants belonging to the three age groups. These results show a significant difference in injunctive norms ( $F(3,96) = 12.871; p=010$ ), descriptive norms ( $F(3,96) = 12.087; p=014$ ), perceived behavioural control ( $F(3,96) = 12.754; p=000$ ) and intention ( $F(3,96) = 6.918; p=007$ ). This means that firstly, participants aged 25-35 and 36-50 felt that their colleagues, friends and relatives were less supportive of wearing helmets and not drinking and driving than participants aged 14-24. Secondly, participants aged 25-35 and 36-50 felt that their colleagues, friends and relatives did not respect wearing helmets and not drinking and driving compared to participants aged 14-24. Thirdly, participants aged 25-35 and 36-50 are less likely to intend to wear a helmet and not drink and drive on their next trip compared to participants aged 14-24.

### Educational level and risk-taking among motorbike taxi drivers

**Table 3. Variation in risk-taking dimensions according to educational level**

	Educational level							
	Primary		Secondary		Higher		No schooling	
	M	SD	M	SD	M	SD	M	SD
Attitudes	4,46	0,399	4,40	0,700	4,12	0,781	4,50	0,754
Injunctives norms	4,18	0,368	4,38	0,720	4,24	0,553	4,20	0,797
Descriptives norms	4,15	0,357	4,40	0,699	3,81	0,938	4,38	0,863
Perceived behavioural Control	4,73	0,432	4,04	1,078	3,72	1,335	4,30	1,026

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Intention	4,43	0,568	4,50	1,631	3,68	0,846	4,16	0,846
Overall averages	<b>4,39</b>	<b>0,424</b>	<b>4,34</b>	<b>0,965</b>	<b>3,91</b>	<b>0,890</b>	<b>4,30</b>	<b>0,857</b>

Note : M= Mean ; SD=Standard Deviation

Table 3 presents the means on the five dimensions (measuring risk-taking among motorbike taxi drivers). In general, participants as a whole tend to comply with road safety measures ( $M > 2.5$ ) that suggest wearing a helmet and not drinking and driving. Specifically, participants with higher education ( $M = 3.91$ ,  $SD = 0.890$ ) and those with no education ( $M = 4.30$ ,  $SD = 0.857$ ) tend to be less likely to comply with them compared to those with primary education ( $M = 4.39$  ;  $SD = 0.424$ ) and those with secondary education ( $M = 4.34$  ;  $SD = 0.965$ ). Indeed, with regard to the injunctive norms of wearing a helmet and not drinking and driving, participants with a primary level ( $M = 4.18$  ;  $SD = 0.368$ ) seem to feel that the people important to them (colleagues, friends and relatives) approve less of wearing a helmet and not drinking and driving.

In terms of descriptive norms, participants with a high school education ( $M = 4.38$  ;  $SD = .720$ ), those with a higher education ( $M = 4.24$  ;  $SD = .553$ ) and those with no education ( $M = 4.20$  ;  $SD = .797$ ) appear to feel that important people (colleagues, friends and relatives) do not always do the same. Similarly, in terms of descriptive norms, participants with higher education ( $M = 3.81$  ;  $SD = 0.938$ ) seem to feel that people important to them (colleagues, friends and relatives) do not always use helmets and drink alcohol while driving, in contrast to participants with secondary education ( $M = 4.40$  ;  $SD = 0.699$ ), those with no education ( $M = 4.38$  ;  $SD = 0.863$ ) and those with primary education ( $M = 4.15$  ;  $SD = 0.357$ ). However, in terms of attitudes towards helmet use, participants with higher education ( $M = 4.12$  ;  $SD = 0.781$ ), those with secondary education ( $M = 4.40$  ;  $SD = 0.700$ ) and those with primary education ( $M = 4.46$  ;  $SD = 0.399$ ) seem to find it less important to wear a helmet and not drink alcohol while driving compared to participants with no education ( $M = 4.50$  ;  $SD = 0.754$ ) who find it essential to wear a helmet and not drink alcohol while driving. On the perceived behavioural control dimension, participants with higher education ( $M = 3.72$  ;  $SD = 1.335$ ) ; those with secondary education ( $M = 4.04$  ;  $SD = 0.699$ ) and those with no education ( $M = 4.30$  ;  $SD = 1.026$ ) appear to perceive that it is difficult to wear a helmet and not drink while driving compared to those with primary education ( $M = 4.73$  ;  $SD = 0.432$ ). Participants with secondary education ( $M = 4.50$  ;  $SD = 1.631$ ), those with primary education ( $M = 4.43$  ;  $SD = 0.568$ ) and those with no education ( $M = 4.16$  ;  $SD = 0.846$ ) appear to have a greater intention to wear a helmet and not to drink on future trips compared to those with higher education ( $M = 3.68$  ;  $SD = 0.846$ ). These results show that the averages obtained by the participants according to their level of education are different, but they do not show whether these differences are real in statistical terms.

**Table 4. Comparison of means of risk-taking dimensions among participants according to educational level**

Source	Dependent variable	Sum of squares	Ddl	Mean squares	F	Significance
Education level	Attitudes	26,015	3	8,672	14,841	,096
	Injonctives norms	17,719	3	5,906	19,795	,079
	Descriptives norms	39,046	3	13,405	24,030	,087
	Intention	78,472	3	26,157	30,292	,159
	Perceived behavioural control	259,733	3	86,577	91,287	,000

Note : Ddl= Degree of freedom

Table 4 presents the results of the comparisons of the means obtained by the participants on the dimensions measuring risk-taking among motorbike taxi drivers. These results suggest that there is a significant difference only in intention ( $F(3,96) = 30.292$ ;  $p = 0.159$ ). This means that participants with a higher level of education do not intend to wear a helmet and respect the ban on drinking and driving compared to participants with a high school education; those with a primary education and those with no education.

### Year of experience and risk-taking among motorbike taxi drivers

**Table 5. Variation in risk-taking dimensions according to years of experience**

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	Years of experience					
	[0-5 years]		[6- 10 years]		[11-15 years]	
	M	SD	M	SD	M	SD
Attitudes	4,36	0,695	4,44	0,713	4,30	0,669
Injonctives norms	4,37	0,540	4,34	0,527	4,08	0,889
Descriptives norms	4,37	0,619	4,26	0,699	4,04	1,023
Perceived behavioural control	4,00	1,321	4,08	1,248	3,79	1,468
Intention	4,27	0,840	4,37	0,861	4,15	1,967
Overall averages	<b>4,27</b>	<b>0,803</b>	<b>4,29</b>	<b>0,809</b>	<b>4,06</b>	<b>1,203</b>

Note : M= Mean ; SD= Standard Deviation

Table 5 presents the means on the five dimensions (measuring risk-taking among motorbike taxi drivers). In general, participants as a whole tend to respect road safety measures ( $M > 2.5$ ) that suggest wearing a helmet and not drinking and driving. This tendency varies according to the participants' years of experience. Specifically, participants with 11 to 15 years of experience ( $M=4.06$  ;  $SD=1.203$ ) tend to be less likely to comply with them than those with 0 to 5 years of experience ( $M=4.27$  ;  $SD=0.803$ ) and those with 6 to 10 years of experience ( $M=4.29$ ,  $SD=0.809$ ). In terms of injunctive and descriptive norms, participants with 11 to 15 years of experience ( $M=4.08$  ;  $SD=0.889$ ) not only seem to feel that their significant others (colleagues, friends and relatives) are less supportive of wearing helmets and complying with the drinking ban while driving, but also drive without always wearing helmets and complying with the drinking ban ( $M=4.04$  ;  $SD=1.023$ ). ( $M=4.04$  ;  $SD=1.023$ ) compared to those with 6-10 years experience ( $M=4.34$  ;  $SD=0.527$ ) and those with 0-5 years experience ( $M=4.37$  ;  $SD=0.540$ ), who not only seem to feel that their colleagues approve of wearing helmets and respecting the ban on drinking and driving more, but also very often use helmets and do not drink and drive ( $M=4.26$  ;  $SD=0.699$  ;  $M=4.37$  ;  $SD=0.619$ ). On the intention dimension, participants with 11 to 15 years of experience ( $M=4.15$  ;  $SD=1.967$ ) appear to have less intention to wear a helmet and to respect the prohibition of drinking and driving compared to participants with 0 to 5 years of experience ( $M=4.27$  ;  $SD=0.840$ ) and those with 6 to 10 years of experience ( $M=4.37$  ;  $SD=0.861$ )

However, participants with 11-15 years of experience ( $M=4.30$  ;  $SD=0.669$ ) and those with 0-5 years of experience ( $M=4.36$  ;  $SD=0.695$ ) seem to find it less essential to wear a helmet and to respect the ban on drinking and driving compared to participants with 6-10 years of experience ( $M=4.44$  ;  $SD=0.713$ ). On the perceived behavioural control dimension, the results show instead that participants with 11 to 15 years of experience ( $M=3.79$  ;  $SD=1.468$ ) appear to perceive that it is difficult to wear a helmet and obey the alcohol ban while driving compared to participants with 0 to 5 years of experience ( $M=4.00$  ;  $SD=1.321$ ) and those with 6 to 10 years of experience ( $M=4.08$  ;  $SD=1.248$ ). These results show that the averages obtained by participants according to their years of experience are different, but they do not show whether these differences are statistically real.

**Table 6. Comparison of means of risk-taking dimensions among participants according to years of experience**

Source	Dependent variable	Sum of squares	Type III Df	Mean squares	F	Significance
Years of experience	Attitudes	2,272	2	1,136	3,063	,368
	Injonctives norms	3,791	2	1,895	4,459	,089
	Descriptives norms	2,470	2	1,235	2,437	,404
	Intention	9,496	2	4,748	3,576	,180
	Perceived behavioural control	7,279	2	3,64	1,684	,651

Note : Ddf= Degree of freedom

Table 6 presents the results of the comparisons of the means obtained by the participants on the dimensions measuring risk-taking among motorbike taxi drivers. These results show that the differences are significant only at the level of injunctive norms ( $F(2,97) = 4.459$ ;  $p=.089$ ). This means that participants with 11-15 years of experience seem to feel that people important to them

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(colleagues, friends and relatives) are less supportive of wearing helmets and not drinking and driving than participants with 6-10 years of experience and those with 0-5 years of experience.

### Religious affiliation and risk-taking among motorbike taxi drivers

**Table 7. Variation in risk-taking dimensions according to religious affiliation**

	Religious affiliation							
	Catholic		Protestant		Muslim		Traditional	
	M	ET	M	ET	M	ET	M	ET
Attitudes	4,44	0,662	4,49	0,500	4,24	0,856	4,35	0,522
Injonctives norms	4,42	0,459	4,31	0,523	4,11	0,740	4,13	0,441
Descriptives norms	4,41	0,501	4,20	0,559	4,22	0,665	4,18	0,696
Perceived behavioural control	4,28	0,998	4,35	0,602	3,23	1,814	4,72	0,820
Intention	4,41	1,472	4,22	0,732	4,13	0,946	4,49	0,696
Overall averages	<b>4,39</b>	<b>0,818</b>	<b>4,31</b>	<b>0,599</b>	<b>3,98</b>	<b>1,004</b>	<b>4,37</b>	<b>0,857</b>

Note : M= Mean ; SD= Standard Deviation

Table 7 presents the means on the five dimensions (measuring risk-taking among motorbike taxi drivers). In general, participants as a whole tend to follow road safety measures ( $M > 2.5$ ) that suggest wearing a helmet and not drinking and driving. This tendency varies according to the religious affiliation of the participants. Specifically, participants of Muslim religious affiliation ( $M=3.98$  ;  $SD=1.004$ ) tend to respect them less than those of Protestant religious affiliation ( $M=4.31$  ;  $SD=0.599$ ) ; those of traditional religious affiliation ( $M=4.37$  ;  $SD=0.857$ ) and those of Catholic religious affiliation. In terms of injunctive norms, participants of Muslim faith ( $M=4.11$  ;  $SD=0.740$ ) appear to feel that people important to them (colleagues, friends and relatives) are less supportive of wearing helmets and respecting the ban on drinking and driving than those of traditional faith ( $M=4.13$  ;  $SD=0.441$ ) ; those of Catholic faith ( $M=4.31$  ;  $SD=0.857$ ) and those of Catholic faith ( $M=4.37$  ;  $SD=0.857$ ) ;  $SD=0.441$ ) ; those of Protestant faith ( $M=4.20$  ;  $SD=0.559$ ) and those of Catholic faith ( $M=4.42$  ;  $SD=0.459$ ). In terms of descriptive norms, participants of traditional religious affiliation ( $M=4.18$  ;  $SD=0.696$ ) appear to feel that people important to them (colleagues, friends and relatives) drive without wearing helmets and drink alcohol while driving compared to those of Protestant religious affiliation ( $M=4.20$  . ( $M=4.20$  ;  $SD=0.559$ ) ; those of Muslim faith ( $M=4.22$  ;  $SD=0.665$ ) and those of Catholic faith ( $M=4.41$  ;  $SD=0.501$ ). On the perceived behavioural control dimension, participants of Muslim faith ( $M=3.23$  .  $SD=1.814$ ) appeared to perceive that 2856tw as difficult to wear a helmet and to respect the ban on alcohol while driving compared to those of Catholic faith ( $M=4.28$  ;  $SD=0.998$ ) ; those of Protestant faith ( $M=4.35$  ;  $SD=0.602$ ) and those of traditional faith ( $M=4.75$  ;  $SD=0.820$ ). On the intention dimension, participants of Muslim faith ( $M=4.13$  ;  $SD=0.946$ ) appear to have less intention to wear a helmet and to respect the ban on drinking and driving compared to participants of Protestant faith ( $M=4.22$  ;  $SD=0.732$ ) ; those of Catholic faith ( $M=4.41$  ;  $SD=1.472$ ) and those of traditional faith ( $M=4.49$  ;  $SD= 0.696$ ). These results show that the averages obtained by the participants according to their religious affiliation are different, but they do not show whether these differences are real from a statistical point of view.

**Table 8. Comparison of means of risk-taking dimensions among participants according to religious affiliation**

Source	Dependant variable	Sum of squares	Type III Ddl	Mean squares	ofF	Significance
Religious affiliation	Attitudes	16,717	3	4,179	8,287	,181
	Injonctives norms	15,338	3	3,834	11,10	,049
	Descriptives norms	41,451	3	10,352	18,90	,079
	Intention	44,589	3	11,147	8,45	,083
	Perceived behavioural control	131,993	3	33,003	47,22_	,000

Note : Ddl= Degree of freedom

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Table 8 presents the results of the comparisons of the means obtained by the participants on the dimensions measuring risk-taking among motorbike taxi drivers. These results show that the differences are only significant at the level of attitudes ( $F(2,97) = 8.287$ ;  $p=.181$ ). This means that participants of Muslim religious affiliation do not respect the wearing of helmets and the prohibition of alcohol consumption while driving.

### DISCUSSION

Four secondary factors were analysed in this study. These factors include: age, education, years of experience and religious affiliation. This first section of our work is devoted to discussing and explaining the results obtained between these factors and risk-taking among motorbike taxi drivers (non-use of helmets and alcohol consumption while driving).

#### Age and risk-taking among motorbike taxi drivers in relation to helmet use and drinking and driving

Age had an effect on risk-taking among motorbike taxi drivers ( $F(3,96) = 11.158$ ;  $p=.007$ ). These results show that the older motorbike taxi drivers are, the more likely they are to take risks on the road, i.e. to wear helmets less and to respect the prohibition on drinking and driving less. This trend was observed in injunctive norms ( $F(3,96) = 12.871$ ;  $p=.010$ ), descriptive norms ( $F(3,96) = 12.087$ ;  $p=.014$ ), perceived behavioural control ( $F(3,96) = 12.754$ ;  $p=.000$ ) and intention ( $F(3,96) = 6.918$ ;  $p=.007$ ). These results are different from the results of the work mentioned in the theoretical reflection, which rather suggest that young people overestimate their skills (in all areas), particularly in the face of critical situations, and underestimate the dangerousness of these situations. This tendency (over-evaluation of their skills and under-evaluation of the dangerousness of situations) leads them to adopt behaviours whose purpose is the accident (Ragot & Munduteguy, 2005). Another explanation for risk-taking among young people seems to lie in the involvement of dopamine, a hormone involved in motivation and emotions. It seems to be secreted more in young people than in adults, reflecting an increase in risk-taking at this time (Mvessomba et al., 2017). The results of this work are different from ours because the oldest motorbike drivers are the most experienced, they master the roads and driving in dangerous situations (Delhomme, 1991), The feeling of self-superiority of these drivers is related to the perceived acquisition of knowledge and motor skills and because, in the final analysis, the oldest motorbike taxi drivers in our research are relatively young, being between 25 and 50 years old.

#### Educational level and risk-taking among motorbike taxi drivers in relation to helmet use and alcohol prohibition while driving

Education level has an effect on risk-taking among motorbike drivers. Our results suggest that there is a significant difference only in intention ( $F(3,96) = 30.292$ ;  $p= 0.159$ ). These results show that the higher the level of education of motorbike taxi drivers, the more likely they are to take road risks, i.e. wear helmets less and respect the prohibition of drinking and driving less. These results are contrary to research that has shown that the lower the level of education, the more risk-taking motorbike drivers are, and the higher their level of education, the less risk-taking they are (Antunes & Cavalcanti, 2002 ; Ndjiepmo, 2008 ; Plug et al., 2003). This difference in results could be due to the fact that the high level mototaxi drivers in our research claim to be more experienced due to their level of education because they know the traffic rules and can therefore easily go against them, in addition to the fact that they master dangerous driving situations (Delhomme, 1991).

#### Years of experience and risk-taking among motorbike taxi drivers in relation to helmet use and alcohol prohibition while driving

Years of experience had an effect on risk-taking among motorbike taxi drivers, but our results show that the differences are significant only at the level of injunctive norms ( $F(2,97) = 4.459$ ;  $p=.089$ ). This means that participants with 11-15 years of experience seem to feel that people important to them (colleagues, friends and relatives) are less supportive of wearing helmets and respecting the prohibition of drinking and driving than participants with 6-10 years of experience and those with 0-5 years of experience. These results indicate that the more experienced motorbike taxi drivers are, the more they take risks on the road, i.e. they wear helmets less and respect the prohibition of alcohol consumption while driving less. These results can be justified by the fact that the most experienced motorbike taxi drivers have a greater mastery of dangerous driving situations and are therefore more inclined to take risks (Delhomme, 1991). This self-superiority refers to a feeling of mastery of the road environment and their feeling of self-superiority is related to the perception of acquiring knowledge and motor skills. It is also worth noting that experienced motorbike drivers have either been involved in an accident or witnessed an accident. This leads them to have a lower probability of an accident than less experienced drivers. Several studies have shown this (Ragot & Munduteguy, 2005 ; Rousseau & Monteau, 1991).

#### Religious affiliation and risk-taking among motorbike taxi drivers in relation to helmet use and alcohol-free driving

Religious affiliation has an effect on risk-taking among motorbike taxi drivers, the results of our research show that the differences are only significant at the attitudinal level ( $F(2,97) = 8.287$ ;  $p=.181$ ). This means that participants with a Muslim religious background do not respect the wearing of helmets and the prohibition of drinking and driving. These results are in line with those

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of Ngah essomba, 2017 ; Nguetsa, 2012 ; Nkelzok and Djebi, 2018. However, this research has some limitations. The first is the use of both the priming texts (activating Christian beliefs and not activating them) and Goggin's (2007) belief scale. This joint use of the priming texts and the belief scale may have led to the effect of the priming texts being attenuated among motorbike taxi drivers. Another limitation is that we activated Christian beliefs and non-Christian beliefs in a global way. To overcome all these difficulties, in future investigations we will be able to examine the effect of priming texts on the one hand, and the joint effect of Christian beliefs and other contextual factors in explaining the behaviour of motorbike taxi drivers on the other. Nonetheless, the results of this work can be used to design prevention and education programmes that take into account the effect of perceptual biases in general and Christian beliefs in particular on the behaviour of Cameroonian motorbike taxi drivers.

In this paper, which focused on risk-taking among Cameroonian motorbike taxi drivers, we applied a quantitative data analysis method through the one-factor ANOVA test and presented our results and discussed the results of the analysis of the four socio-demographic factors (age, level of education, years of experience and religious affiliation) and risk-taking in relation to helmet use and the prohibition of alcohol consumption while driving. These results showed that these four factors influence the behaviour of Cameroonian motorbike taxi drivers in their workplace. For future research we will combine other psychological factors related to risk taking.

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## Learning Management as Soft Skills in Enhancing Teacher Professionalism



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**ABSTRACT:** The purpose of this study was to determine the role of learning management as a soft skill in enhancing the professionalism of teachers in Central Maluku, Indonesia. We conducted a descriptive quantitative approach. Selected participants ( $N=40$ ) involved filling out a closed-questionnaire (35 favorable questions). Then, we examined our hypotheses using the Wald-Wolfowitz run test. We found that learning management as a soft skill has a role in enhancing teacher professionalism. Particular measures of indicators had a greater impact than others, such as self-management and learning preparation. However, all indicators' proportions remain in the high to very high category.

**KEYWORDS:** Learning management, soft skills, teacher professionalism

### INTRODUCTION

The credentials of teachers are not the sole measure of their competency. In addition, soft skills affect a teacher's level of competency (Mislia et al., 2021; Said et al., 2020). Soft skills are among the remaining talents that must be addressed (Asbari et al., 2020; Mailool et al., 2020). Some educators need to recognize the importance of soft skills in the classroom. It may be taught alongside or ingrained in hard skills. However, several teachers reported that improving and evaluating the development of soft skills was difficult. This circumstance undermines teachers' sense of professional duty (De Pietro & Altomari, 2019).

In order to achieve school and educational goals in general, it is anticipated that learning would go easily, methodically, and effectively, teachers must construct learning management in order to control how learning takes place, what is learned, and the results of learning in order to attain the intended educational objectives (Hanafi & Setiyani, 2021; Korbuakaew et al., 2022). Learning management encompasses all attempts to develop an effective and efficient teaching and learning process by regulating the teaching and learning process (Azman, 2020; Hediandah & Surjono, 2020).

Learning management is the organizing of all activities classed as core and supplementary curricula according to a predefined curriculum (Sulaiman, 2018). It aims to supervise student activities so that they have a good effect on the school. The aforementioned principles demonstrate that every educator must be able to handle active, imaginative, creative, practical, and enjoyable learning activities by using a variety of tactics and approaches and adapting them according to the specifics of each situation.

Widespread research on teacher competency has encouraged the strengthening of certain soft skills among educators (AlHouli & Al-Khayatt, 2020; Fernandes et al., 2021). Training was conducted by targeting certain competence components, such as the creation of creative learning media and the use of ICT for learning (Tang, 2020). There are no studies that particularly cover the management of soft skills for high school teachers. The educational process at one of the high schools in the Salahutu District (Central Maluku, Indonesia) is based exclusively on the technical capabilities of the teacher, according to the facts (hard skills). In contrast, soft skills are not a priority, therefore the success of creating school quality is based only on quantity rather than quality.

The purpose of this study was to determine the role of learning management as a soft skill in enhancing the professionalism of teachers in Central Maluku, Indonesia. By analyzing empirical data, we elucidated how learning management might assist the professionalism of teachers in the form of soft skills. The study was led by the following research questions: how does learning management as a soft skill enhance teacher professionalism?

## Learning Management as Soft Skills in Enhancing Teacher Professionalism

### METHODS

We conducted a descriptive quantitative approach to test our suggested study hypotheses. This section describes the sample and procedures, instruments, and data analysis techniques.

This study was conducted at a high school in Central Maluku, Eastern Indonesia. A saturated sampling strategy was adopted to select participants. The methods we conducted involved filling out a closed-questionnaire. 40 teachers contacted to participate. The questionnaire was submitted to 40 teachers, from whom we obtained 40 valid questionnaires. The response rate was 100%. Using scales from existing questionnaires and adapted items from previous research, the study model's principles were assessed. There are 35 favorable elements in the questions. Items written in English were properly translated and altered for the Indonesian secondary school environment. The correctness of the translation was verified using back-translation. The instruments were field-tested with teachers to ensure the content validity of the instrument items.

To get the average proportion of each indicator, we used a quantitative descriptive approach. Determined the interpretation based on a set of criteria (see Table 1). Then, we examined our hypotheses using the Wald-Wolfowitz run test.

**Table 1. Interpretation Criteria**

Percentage Range (%)	Criteria
89-100	Very high
60-88	High
41-59	Moderate
12-40	Low
<12	Very low

### RESULTS AND DISCUSSION

The objective of this research is to determine the role of learning management as a soft skill in enhancing teacher professionalism. We discovered that particular measures of learning management had a greater impact on enhancing teacher professionalism. In this section, we give the results and explore the consequences of our results. We begin with a description of each indicator's data, followed by a presentation of the study hypothesis's substantial findings.

The composite measure of learning management in this study has a mean of 4.76 ( $SD = 0.34$ ) for self-management, 4.67 ( $SD = 0.38$ ) for lesson planning, 4.58 ( $SD = 0.38$ ) for implementation of learning. The mean score for learning evaluation was 4.59 ( $SD = 0.41$ ) and for follow-up planning was 4.65 ( $SD = 0.42$ ) (see Table 2).

**Table 2. Percentage, means, standard deviations and confidence level among indicators.**

Indicator	%	M	SD	CL (95.00%)
<b>Self-management</b>	<b>95.15</b>	<b>4.76</b>	<b>0.34</b>	<b>0.11</b>
Obey school's rules	97.50**	4.88**	0.33	0.11*
Honest and trustworthy	96.50	4.83	0.38	0.12
Have high innovation	95.00	4.75	0.44	0.14
Be polite and courteous	96.50	4.83	0.38	0.12
Communicate well with students	96.00	4.80	0.41	0.13
Communicate well with headmaster	94.50	4.73	0.45	0.14
Communicate well with colleagues and parents	94.50	4.73	0.45	0.14
Put forward creative ideas	93.50	4.68	0.47	0.15
Foster enthusiasm for learning	95.50	4.78	0.42	0.14
Critical thinking skills	92.00*	4.60*	0.50	0.16**
<b>Lesson preparation</b>	<b>93.33</b>	<b>4.67</b>	<b>0.38</b>	<b>0.12</b>
Arrange a syllabus according to the curriculum	96.50**	4.83**	0.38	0.12*
Make lesson plan every new academic year according to the guidelines	94.50	4.73	0.45	0.14

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Formulate learning objectives	93.00	4.65	0.48	0.15
Plan effective learning activities	92.50	4.63	0.49	0.16**
Follow the sequence of learning materials according to learning objectives	91.50*	4.58*	0.50	0.16**
Choose learning resources/learning media according to the material and learning strategies	92.00	4.60	0.50	0.16**
<b>Learning implementation</b>	<b>91.69</b>	<b>4.58</b>	<b>0.38</b>	<b>0.12</b>
Start learning effectively	94.50	4.73	0.45	0.14
Carry out learning activities in accordance with the design that has been prepared	95.50**	4.78**	0.42	0.14
Carry out learning activities according to the contents of the curriculum	94.00	4.70	0.46	0.15
Carry out various learning activities with sufficient time	90.50	4.53	0.51	0.16**
Manage classes effectively	91.50	4.58	0.50	0.16**
Adapting learning activities designed to class conditions	91.00	4.55	0.50	0.16**
Provide many opportunities for students to ask questions, practice and interact with other students	89.50	4.48	0.51	0.16**
Using teaching aids and/or audio-visual (including ICT) to increase student learning motivation	87.00*	4.35*	0.48	0.15
<b>Learning evaluation</b>	<b>91.70</b>	<b>4.59</b>	<b>0.41</b>	<b>0.13</b>
Compile the assessment tool	94.00**	4.70**	0.46	0.15*
Carry out assessments with various techniques and types of assessment	91.50	4.58	0.50	0.16**
Analyze the results of the assessment to identify difficult basic topics/competencies	90.00*	4.50*	0.51	0.16**
Utilize input from students and reflect on it to improve further learning	91.00	4.55	0.50	0.16**
Utilize the results of the assessment	92.00	4.60	0.50	0.16**
<b>Follow-up planning</b>	<b>92.92</b>	<b>4.65</b>	<b>0.42</b>	<b>0.14</b>
Revisit subject matter that students have not mastered	92.00	4,60	0.50	0.16**
Provide motivation or study guidance	94.00	4,70	0.46	0.15
Read material from other sources	95.00**	4,75**	0.44	0.14*
Give assignments or exercises that students must do at home	94.00	4,70	0.46	0.15
Inform the topic to be discussed at the next meeting	92.50	4,63	0.49	0.16**
Conduct remedial work	90.00*	4,50*	0.51	0.16**
Average	92.96			
General category interpretation	Very high			
Asymp. Sig. (2-tailed)	<b>(0.838)</b>			

Note: N=40; CL= Confidence Level; \* = min. score of the indicator; \*\* = max. score of the indicator

Self-management has the highest proportion (20.47%) of learning management indicators function by teachers (see Fig. 1). Compared to other sub-indicators, a greater proportion of teachers (97.50%) (see Table 2) obey school rules. Our findings show that as the highest proportion of learning management indicators, obeying school's rules has the greatest function that teachers

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have on enhancing their professionalism. This part was shown more by teachers before preparing lessons. In contrast, teachers possess at least critical thinking abilities (92.00%).

Learning preparation came next after self-management (20.08%) (see Fig. 1), whereby a greater proportion of teachers organized a syllabus according to the curriculum (96.50%) (see Table 2) than those who followed the order of learning materials according to learning goals (91.50%). Learning preparation is a decision-making process that results from logically considering particular learning goals and objectives, namely behavioral changes and a sequence of actions that must be carried out to reach these goals by employing all available learning resources (Kobayashi, 2021). The final outcome of the decision-making process is the creation of papers including the aforementioned topics, so that these documents may be utilized as references and guides for the learning procedure (Ndiokubwayo et al., 2020; Nurtanto et al., 2021). The process of a plan must begin with the establishment of goals to be accomplished via a requirements analysis and full documentation, followed by the determination of the measures necessary to attain these objectives. When we plan, we consider how this objective might be attained most effectively and efficiently. While learning can be interpreted as a process of cooperation between teachers and students in utilizing all existing potential and sources, both potential originating from within the students themselves, such as their interests, talents, and basic abilities, as well as learning styles and potential that exist outside the students, such as the environment, facilities, and learning resources, in order to achieve certain learning goals, learning can also be viewed as a process of utilizing all existing potential and sources (Sudrajat, 2018; Yonkaitis, 2020).

More teachers (19.99%) were engaged in planning for follow-up in third place, since this should be at the last place by order. More of them read content from other sources (95.00%) than conduct remedial work (90.00%). As a follow-up to the results of the evaluation, the teachers have made an effort to find out the success of the assistance that has been given to students. The follow-up based on the evaluation results of the actions taken in an effort to provide guidance. However, our finding shows that 10% of teachers have not taken any real follow-up steps in providing remedial work for students, although more of them always read material from other sources for the follow-up preparation.

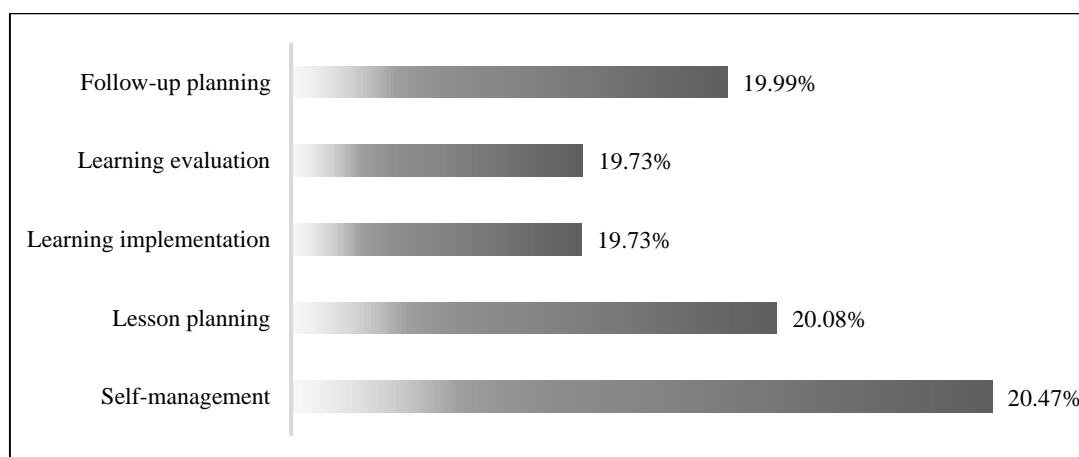


Figure 1. Percentage obtained between indicators.

The lowest percentage (19.73%) is shared between learning assessment and learning implementation. In terms of learning implementation, a greater proportion of teachers carry out learning activities in accordance with the plan (95.50%) than those who use teaching aids and/or audio-visual (including ICT) to boost student learning motivation (87.00%). Implementation of learning is the application of the interaction process of students with educators and learning resources in a learning environment, learning interaction is a process exchange information (Gunawan et al., 2020; Macqual et al., 2021). Meanwhile, the implementation of learning is an act or implementation of a plan that is arranged in a mature and detailed learning process. Based on some of the definitions above, it can be concluded that the implementation of learning is a process of carrying out ideas and plans that have been prepared in carrying out interactions between students, educators and learning resources in the learning environment.

In learning assessments, more teachers (94.00%) create the assessment instrument than (90.00%) study the assessment data to identify challenging fundamental topics/competencies. Evaluation of learning is a process of obtaining data and information needed to determine the extent to which and how learning has taken place. Evaluation of education includes all components, the implementation process and educational products in total, and includes at least three concepts. Evaluation is an important factor which is one of the benchmarks for the success of the learning process (Awidi & Cooper, 2015; JH & Baderiah, 2020). Therefore, it

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is very important to really know the purpose of the evaluation, so that what you want to achieve in the evaluation process can occur.

Nonetheless, all these proportions remain in the high to very high category.

If  $p < 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted, whereas if the value is  $p > 0.05$  then  $H_0$  is accepted and  $H_a$  is rejected. Obtained  $p = 0.84$ , which means  $p > 0.05$ , so that  $H_0$  is accepted and  $H_a$  is rejected. We assume that learning management as a soft skill has a role in enhancing teacher professionalism. Currently, hard skills are no longer the only major benchmark that is assessed by the world in various fields, including in the field of education. Currently, soft skills are taken into consideration as a counterbalance to the hard skills possessed by everyone, including teachers. A soft skill development management model is offered to improve teacher competency (Cahyadiana, 2020). Development of soft skills to improve the quality of teacher performance can be identified from the implementation of learning. This is because the implementation of learning is the main task of a professional teacher.

### CONCLUSION

Learning management as a soft skill has a role in enhancing teacher professionalism including five indicators, namely self-management, learning preparation, learning implementation, learning evaluation, and follow-up planning. Particular measures of learning management had a greater impact than others, such as self-management and learning preparation. However, all indicators' proportions remain in the high to very high category.

Limitation of the study

Regarding limitation, it should be noted that the school sample was not randomly selected from the population. This limitation restricts our ability to generalize the results outside the sample. Moreover, the sample size of teachers was modest. It precluded us from using more complex conceptual models and statistical tools, such as structural equation modeling methodologies, which would have supplied us with useful information regarding direct and indirect impacts. To study the role of learning management in teacher professionalism, more research with a bigger and more varied sample of Central Maluku schools is necessary.

Next, the descriptive nature of our work is a potential restriction. As the research provides a snapshot of the problem, it may provide interim functional solutions. More experimental and quasi-experimental investigations must be undertaken in the future. Also, the present research focuses on teacher professionalism as the distal dependent variable, as opposed to student learning. It does not indicate a more plausible connection between learning management functions and the potential shrinking of learning implementation gaps in selected schools' classrooms. When high-quality accomplishment data is available, it might be interesting to further investigate its impact on student learning.

### Declaration of conflicting interests

We declared no potential conflicts of interest with respect to research, authorship and/or publication of this article.

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## Expanding Voluntary Social Insurance Coverage in Vietnam



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**ABSTRACT:** Expanding voluntary social insurance coverage is one of the important goals of the social insurance system in Vietnam and many developing countries around the world. This study uses a combination of document research methods, traditional statistical analysis methods; synthesize, compare, contrast, and clarify the theoretical basis for the expansion of voluntary social insurance coverage, the legal provisions on voluntary social insurance policies and the current status of voluntary social insurance coverage in Vietnam. Based on the research results, the authors propose some recommendations to improve the policy and organize the implementation of social insurance, aiming to expand the coverage of voluntary social insurance. Recommendations include: financial incentives through participation and support from the Government, adding short-term benefits to the voluntary social insurance program, reforming administrative procedures and boosting investment application of information technology in the management of the social insurance system, and strengthening communication on voluntary social insurance.

**KEYWORDS:** voluntary social insurance, voluntary social insurance coverage, expanded coverage, Vietnam

### 1. INTRODUCTION

Social insurance is one of the important policy pillars in the social security system in many countries around the world. In Vietnam, social insurance is considered a basic pillar of social security policy, because it has wide coverage and a stable fund based on the mechanism of creating funds from the contributions of the participants. Resolution No. 28-NQ/TW issued on May 23, 2018, of the 7th Conference of the 12th Central Committee of the Communist Party of Vietnam on reforming social insurance policies stated: "Political reform social insurance policy so that social insurance is really a main pillar of the social security system, gradually expanding the coverage of social insurance firmly, towards the goal of social insurance for the entire population. According to the International Social Security Administration (ISSA, 2018), workers in informal employment in Asia-Pacific countries account for about 60% of their workforce, but the majority not yet participating in social insurance programs. This is the target group that voluntary social insurance programs in many countries have been aiming to expand the coverage of the social insurance system. In Vietnam, voluntary social insurance has been officially applied since January 1, 2008, according to the provisions of the Law on Social Insurance No. 71/2006/QH11 issued on June 29, 2006. The voluntary social insurance program has initially achieved remarkable results in increasing the coverage of social insurance, especially for a part of informal workers. However, so far, the rate of participation in voluntary social insurance is still very limited. According to statistics of Vietnam Social Insurance, by the end of 2021, only about 1,449,820 employees participate in voluntary social insurance, equivalent to about 2.1 percent of the workforce. Expanding voluntary social insurance coverage is one of the important goals in policies to ensure social security in Vietnam as well as in many developing countries around the world. In this study, the authors clarify the theoretical basis for the expansion of voluntary social insurance coverage, the legal provisions of voluntary social insurance policy, and the current status of voluntary social insurance coverage in Vietnam. Based on the research results, the authors propose some recommendations to improve the policy and organize the implementation of social insurance, aiming to expand the coverage of voluntary social insurance.

### 2. THEORETICAL BASIS

#### The concept of voluntary social insurance

In many countries around the world, social insurance is considered the basic pillar of social security policy, because social insurance has a wide coverage and stable fund source, based on the mechanism of creating funds from contributions of the parties involved. According to the Social Protection Floor (SPF) model of the International Labor Organization (ILO), social insurance includes a compulsory social insurance program and a voluntary social insurance program. Voluntary social insurance has been applied in many countries around the world (such as the US, Poland, Finland, China, Thailand...); at the same time, many countries have



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succeeded in expanding social insurance coverage through the development of voluntary social insurance programs (such as Indonesia, Malaysia, Mongolia, Australia, China, Japan...). The concept of voluntary social insurance and the regulations on the payment/benefit regime have certain differences in different countries. However, in general, voluntary social insurance is a social insurance program based on the voluntary contributions of employees, voluntary social insurance is the social insurance policy of the State in order to realize the common social security goals of each employee nation. The voluntary social insurance scheme in each country can include many different regimes, of which the most basic is the retirement system; In addition, it may include other social insurance benefits such as sickness, maternity, and occupational accident...

In Vietnam today, according to the provisions of Law on Social Insurance No. 58/2014/QH13 promulgated on November 20, 2014, the social insurance system includes three programs: compulsory social insurance, voluntary social insurance and supplemental pension insurance. The concept of voluntary social insurance according to Law on Social Insurance No. 58/2014/QH13 is as follows: "Voluntary social insurance is a type of social insurance organized by the State in which participants can choose the payment rate and payment method suitable to their income and The State has the policy to support social insurance contributions for participants to enjoy retirement and survivorship regimes".

### The concept of voluntary social insurance coverage

The concept of coverage is a multidimensional concept, which can be applied to social security in general and to specific areas in the social security system such as social insurance, health insurance, etc. Approaching from the ILO point of view, Long, G. T., & Thu, D. T. (2020) have introduced the concept of coverage which includes three elements: scope, extent of participation and benefit level. Accordingly, the concept of social insurance coverage can be approached from two aspects, that is (i) statutory social insurance coverage (legal coverage/statutory coverage: is the concept to determine the scope of coverage protection, size of participation and benefit level as provided in the current law on social insurance) and (ii) effective social insurance coverage or effective social insurance coverage: is a concept to determine the scope of protection, participation scale and benefit level achieved by the social insurance system according to reality). Applied in this article, the concept of voluntary social insurance coverage is approached from two aspects: statutory voluntary social insurance coverage and effective voluntary social insurance coverage or coverage actual voluntary social insurance.

### Expanding voluntary social insurance coverage

According to Schmitt, V., & De, L. (2013), there are two methods to expand social insurance coverage, namely: (i) expanding horizontal coverage is expanding the participants social insurance and (ii) extending coverage vertically increases the level of protection for participants.

In Vietnam, the Vietnam Social Insurance Agency has determined a reasonable goal and roadmap, taken specific steps and appropriate solutions to implement the guidelines and guidelines of the Party and State in opening Expanding the target audience of social insurance has achieved the goal of social insurance for the entire population. These goals are clearly expressed in Resolution No. 28-NQ/TW of the 7th Conference of the Central Committee of the Communist Party of Vietnam, term XII on reform of social insurance policies, issued on 23rd of May 5 in 2018: by 2021, strive to reach about 35% of the labor force of the age group to participate in social insurance, of which farmers and informal sector workers participating in voluntary social insurance account for about 1% of the labor force in the age group; by 2025, strive to reach about 45% of the labor force of age to participate in social insurance, of which farmers and informal sector workers participating in voluntary social insurance account for about 2.5% labor force in age; by 2030, strive to reach the rate of 60% of the labor force of age participating in social insurance, of which farmers and informal sector workers participating in voluntary social insurance account for about 5% of the workforce number of workers in the age group.

## 3. METHODS

The authors used the method of researching documents to systematize the theoretical basis of the research topic, using the method of collecting data from secondary sources of documents from other agencies and organizations. The main sources are Data from the General Statistics Office on the labor and employment situation, annual reports of Vietnam Social Insurance on the management and use of social insurance funds; the system of legal documents on social insurance being applied in Vietnam, and other sources to the research topic. To clarify the legal provisions on voluntary social insurance policy and the status of voluntary social insurance coverage in Vietnam, the authors use a combination of traditional statistical analysis methods to synthesize and compare, compare, and draw conclusions. From secondary data, the authors use basic mathematical methods to calculate several indicators reflecting statutory and actual coverage of voluntary social insurance, such as the number of regimes/benefits that participants of voluntary social insurance are entitled to, the rate of participation in voluntary social insurance (calculated as a percentage of the number of participants of voluntary social insurance over the total number of subjects eligible to participate),

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Social insurance coverage (calculated as a percentage of the number of people participating in voluntary social insurance over the total workforce).

### **4. RESULTS**

In Vietnam, the form of voluntary social insurance was prescribed for the first time in the Law on Social Insurance No. 71/2006/QH11 issued on June 29, 2006, officially implemented in 2008, in order to create opportunities for all workers in the informal sector are entitled to participate in social insurance. From January 1, 2016, the voluntary social insurance policy is implemented by the provisions of the Law on Social Insurance No. 58/2014/QH13 issued on November 20, 2014. The implementation of the voluntary social insurance policy in Vietnam is as follows:

#### **Regulations on subjects participating in voluntary social insurance**

According to the provisions of Article 2 of the Law on Social Insurance No. 58/2014/QH13 and guiding documents, participants in voluntary social insurance are Vietnamese citizens aged full 15 years or older and are not eligible for participation in social insurance compulsory social insurance by the law on social insurance. Thus, the subjects participating in voluntary social insurance according to the provisions of the Law on Social Insurance No. 58/2014/QH13 have been expanded more than the provisions of the Law on Social Insurance No. 71/2006/QH11 (previously, the subjects participating in the voluntary social insurance) volunteer to be Vietnamese citizens of working age, not subject to compulsory social insurance).

#### **Regulations on voluntary social insurance contributions**

According to the provisions of Article 87 of the Law on Social Insurance No. 58/2014/QH13, from January 1, 2016, the monthly voluntary social insurance premium payment rate is equal to 22% of the monthly income selected by the employee to contribute to the retirement and death funds; the lowest monthly income used as a basis for payment of voluntary social insurance premiums is equal to the poverty line in rural areas and the highest is 20 times the basic salary. This regulation has been adjusted compared with the previous provisions of the Law on Social Insurance No. 71/2006/QH11 (This Law stipulates that the monthly income as the basis for payment of voluntary social insurance is at least equal to the general minimum salary, the highest monthly income as the basis for payment of voluntary social insurance is equal to 20 months of the general minimum salary; according to this regulation, the voluntary social insurance premium is still quite high compared to the majority of people in rural areas and self-employed people with low and unstable monthly income).

#### **Regulations on support levels for voluntary social insurance contributions**

Since 2018, the State has had the policy to support voluntary social insurance contributions for voluntary social insurance participants, as specified in Article 87, Law on Social Insurance No. 58/2014/QH13 (previously, according to regulations of the Law on Social Insurance No. 71/2006/QH1, there is no state support policy for participants of voluntary social insurance). Accordingly, participants of voluntary social insurance are supported by the State with a percentage (%) of the monthly social insurance payment according to the poverty line of rural areas, specifically: 30% of the payment rate for voluntary social insurance participants belonging to poor households; support 25% of the payment rate for voluntary social insurance participants from near-poor households; support 10% of the contribution rate for other subjects. The support period depends on the actual time of participating in voluntary social insurance of each person, but must not exceed 10 years. Regulations on supporting voluntary social insurance contributions for voluntary social insurance participants along with the adjustment of monthly income as the basis for paying voluntary social insurance to the lowest level equal to the regional poverty line in rural areas in order to expand the participants and increase the coverage of social insurance.

#### **Regulations on voluntary social insurance benefits**

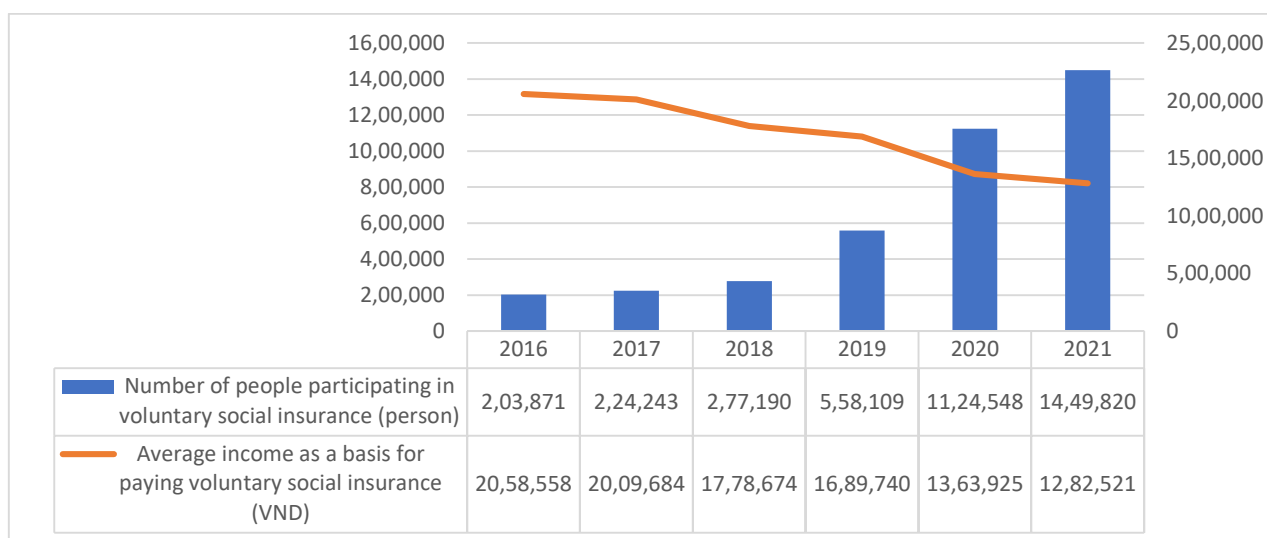
According to the provisions of Article 4, Law on Social Insurance No. 58/2014/QH13, voluntary social insurance has the following regimes: retirement, survivorship and voluntary supplementary retirement. In particular, the voluntary supplementary retirement program is a voluntary social insurance policy aimed at supplementing income for fund participants when reaching retirement age in the form of individual retirement accounts, invested and accumulated in accordance with the law. Within the scope of this study, the authors only focus on researching voluntary social insurance schemes based on the contribution mechanism to the general social insurance fund, not mentioning the voluntary supplementary pension scheme. Thus, compared with the compulsory social insurance program in Vietnam being implemented for five regimes (sickness insurance; maternity insurance; occupational accident-occupational disease insurance; retirement insurance, and death insurance), the voluntary social insurance program has only implemented two long-term regimes, without short-term benefits (sickness insurance; maternity insurance; occupational accident and occupational disease insurance). Compared with the system of social insurance regimes mentioned in Convention 102 of the International Labor Organization ILO, the voluntary social insurance program in Vietnam only covers two regimes,

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retirement and survivorship, and lacks sickness, maternity, occupational accident, occupational disease, disability, unemployment and family benefits.

### Status of participating in voluntary social insurance

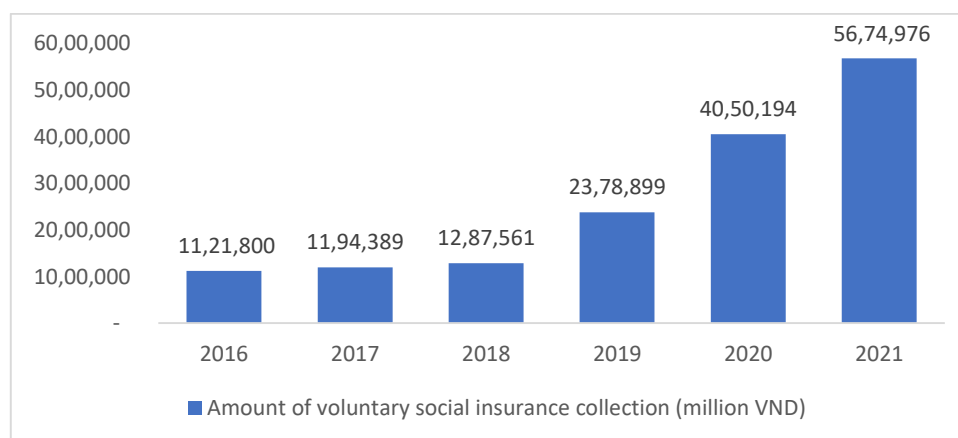
Statistics of Vietnam Social Insurance (Figure 1) show that, after 6 years of implementing the Law on Social Insurance No. 58/2014/QH13, from 2016 to 2021, the number of employees participating in voluntary social insurance increased by 1,245,949 people; Especially, from 2018 to now, the number of people participating in voluntary social insurance has increased rapidly. As of 2021, 1,449,820 people were participating in voluntary social insurance, an increase of 7.1 times compared to 2016; coverage reached about 2.1% of the labor force, exceeding the target set out in Resolution No. 28-NQ/TW (by 2021, striving to reach about 35% of the labor force in the age of insurance participation in which farmers and informal sector workers participating in voluntary social insurance account for about 1% of the working-age workforce). This shows that the policy of voluntary social insurance has been gradually improved, especially the policy of supporting voluntary social insurance contributions for employees has created conditions for many employees to participate in social insurance.



**Figure 1. Status of participation in voluntary social insurance in Vietnam**

Source: Vietnam Social Security

Along with the increase in the number of people participating in voluntary social insurance, the amount of contributions to the voluntary social insurance fund also increased (Figure 2). In 2021, the voluntary social insurance revenue is 5,674,976 million VND, more than 5 times higher than the voluntary social insurance revenue in 2016.



**Figure 2. Voluntary social insurance revenues in Vietnam**

Source: Vietnam Social Security

Besides the achieved results, the expansion of voluntary social insurance coverage still has many difficulties and limitations. Although the provisions of the current social insurance law in Vietnam have expanded the statutory coverage for informal workers, the actual number of people participating in voluntary social insurance is still very low, and not commensurate with the potential.

## Expanding Voluntary Social Insurance Coverage in Vietnam

After 13 years of implementing voluntary social insurance (from 2008 to present), by the end of 2021, there are only 1,449,820 participants, only accounting for about 3.7% of the number of insured subjects in a statutory voluntary society, this is a very small number compared to the workforce in the informal sector (which is the main target of voluntary social insurance). This is due to several reasons, some of the main ones being as follows:

First of all, the current voluntary social insurance policy in Vietnam is not attractive, and not flexible, the design of the social insurance policy still has many shortcomings, and has not attracted employees to participate in voluntary social insurance. It can be seen that the object of protection that the voluntary social insurance policy is aimed at is informal workers, who are vulnerable to socio-economic shocks due to unsafe working conditions, income low income, and high working intensity (General Statistics Office of Vietnam and International Labor Organization, 2018). The regulation on voluntary social insurance contribution rate equal to 22% of the selected income is quite high compared to the income level of the vast majority of workers in the informal sector. Although the State has a policy to support voluntary social insurance contributions, the level of support is still low (10% for people other than poor and near-poor households). Meanwhile, in order to enjoy the retirement regime, they must maintain a long contribution period (according to current regulations, participants of voluntary social insurance must pay the full 20 years to receive a pension). On the other hand, the benefits of voluntary social insurance are still inadequate compared to the type of compulsory social insurance (compared to compulsory social insurance, voluntary social insurance participants are not entitled to maternity, sickness, occupational disease and occupational accident benefits), this reduces the benefits of employees participating in voluntary social insurance.

At the same time, the knowledge and awareness of employees about social insurance are still limited. Currently, there is still a large part of employees who are not fully aware of their rights when participating in social insurance to receive pensions and ensure long-term social security. Meanwhile, state management agencies and implementing agencies still lack an overall communication strategy to direct public opinion and provide complete and accurate information. This leads to the situation of disseminating information and explaining policies at the wrong time, lacking information selection, negatively affecting the psychology of employees, and reducing people's confidence in the social insurance system. In the media, communication has not been focused on the role and benefits of participating in social insurance, so many employees lack an understanding of social insurance policies and laws. An inadequate explanation of the meaning and purpose of the new regulations when there are policy changes affects the employees' confidence in the social insurance system. In the condition that the ability to access official information is still limited, unofficial sources on social networking sites have been affecting the psychology of employees.

## 5. RECOMMENDATIONS

From the above analysis, the authors propose some recommendations for designing, planning and organizing the implementation of voluntary social insurance policies in Vietnam in order to realize the goal of expanding voluntary social insurance coverage.

**Firstly**, financial incentives through participation and support from the Government. In Vietnam currently, the highest level of support is only 30% of the minimum contribution, so it does not seem to create an incentive for informal workers to participate. Therefore, it is necessary to study and increase the level of support for voluntary social insurance contributions for participants. The experience of some countries in the region (Thailand, China) shows the effectiveness of increasing the coverage of voluntary social insurance of the premium subsidy program. For example, in Thailand, the support levels are 50%, 80% and 100% of the contribution rate for informal workers, respectively, for the age groups under 30 years old, from 30 to 50 years old and over 50 years old (however, this support does not exceed 100 Bath per month); This form of financial support is considered effective for low- and middle-income workers. In addition to policies to support contributions, it is necessary to study additional policies on supporting benefits for special target groups, groups of workers vulnerable to socio-economic shocks.

**Second**, add short-term benefits to the voluntary social insurance program. The voluntary social insurance program in Vietnam only covers two benefits (retirement and survivorship), compared with the compulsory social insurance program in Vietnam, the voluntary social insurance program lacks three benefits: namely sickness insurance, maternity insurance, labor accident insurance - occupational disease. Informal workers are vulnerable groups to socio-economic shocks due to unsafe working conditions, low income, and high work intensity (General Statistics Office of Vietnam and International Labor Organization, 2018). Therefore, short-term benefits should be added to the voluntary social insurance program to help workers overcome such financial shocks. This adjustment increases the benefits of voluntary social insurance participants, attracting employees to participate in voluntary social insurance.

**Third**, continue to reform administrative procedures and promote investment in information technology applications in the management of the social insurance system. International practice shows that simplifying the procedure for paying social

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insurance premiums is also a reform orientation to increase the attractiveness as well as improve the compliance level of employees in participating in social insurance. Promote the application of information and communication technology (ICT) in the management of the social insurance system, creating a premise to ensure publicity and transparency in the management of the social insurance fund, creating favorable conditions for employees to access and register, collection and payment of social insurance benefits. The application of information technology in the construction and development of the social security system is a trend in many countries around the world (developed countries such as Germany, France, the United States, Japan, Australia...; developing countries such as the Philippines, Indonesia, Brazil, China, etc.). Vietnam needs to continue promoting investment in information technology applications in social insurance activities, gradually modernizing the social insurance management system; complete the online public service system on the Internet. Using a variety of information channels such as phone, email, social networks, to help employees easily access, more convenient in learning the participation procedures, answering questions... Continue to upgrade the industry's website in a modern and diversified manner, creating conditions for individuals and organizations to easily access information on social insurance and related information.

**Fourth**, strengthen communication and propaganda on voluntary social insurance. Limited awareness and lack of understanding about social insurance are one of important barriers to the participation in voluntary social insurance of informal sector workers. The practice has shown that disinformation and social marketing have indeed played an important role in expanding coverage of contribution-based social security schemes (Liang and Langenbrunner, 2013). Communication plays an important role in conveying the messages of the social insurance policy to the affected people. To ensure that all citizens can receive information about social insurance, especially informal workers, it is necessary to implement groups of solutions on organizational consolidation, capacity building, presentation of the level of communication staff; effective use of facilities and investment resources for communication work; raising awareness and responsibility of collectives and individuals across the social insurance industry for social insurance policy communication; strengthening direct communication coordination among target groups; improve the quality of effective communication of social insurance policies on the mass media, promote the role of the press agency and the electronic information system of the social insurance industry; promote participation and effective organization of social media activities. Propaganda content should emphasize the superiority of social insurance policies, participating in social insurance is a right but also a responsibility of employees (responsibility to themselves and the community). In propaganda activities, it is necessary to focus on improving employees' understanding of social insurance policies, because this is an important factor in deciding participation in social insurance. At the same time, it is necessary to diversify forms of propaganda, suitable to different characteristics of different groups of workers; combine traditional forms of communication such as issuing impressive, easy-to-understand publications and leaflets about social insurance that can illustrate contribution responsibilities and specific benefits; paste propaganda publications on voluntary social insurance at cultural houses of villages, communes, wards, and townships; increase radio and broadcast time on mass media; at the same time using propaganda channels through popular social networking tools.

## 6. CONCLUSION

In Vietnam, social insurance is considered the basic pillar of social security policy. Gradually expanding the coverage of social insurance firmly, towards the goal of universal social insurance is one of the important goals that the Vietnamese social insurance system is aiming for; especially expanding voluntary social insurance coverage to the informal economy. This study uses a combination of documentary research methods, data collection methods from secondary data sources, and traditional statistical analysis methods to clarify the system of rationale for expanding coverage. Government of voluntary social insurance, clarifying the legal provisions on voluntary social insurance policy and the current situation of voluntary social insurance coverage in Vietnam. Based on the research results, the authors propose some recommendations to improve the policy and organize the implementation of social insurance, aiming to expand the coverage of voluntary social insurance.

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## Relationship between Age, Employment Status, and Availability of Sports Infrastructure on Motivation to Exercise in Yogyakarta State University Education Personnel



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**ABSTRACT:** This research aims to determine: (1) the correlation between age and motivation for doing sports, (2) the correlation between the employment status and motivation for doing sports, (3) the correlation between the availability of sports facilities and motivation for doing sports, and (4) the correlation between age, employment status, and availability of sports facilities towards the motivation for doing sports. The type of this research was a correlational study with an ex post facto approach. The research population was the faculty staff (tendik) of Yogyakarta State University who were still actively working with a total of 775 people with a total sample of 194 people taken using the random sampling technique. The research instrument was a closed questionnaire for data collection on the availability of sports facilities with a total of 20 items and a Sport Motivation Scale with a total of 27 items. The instrument validity technique referred to the product moment correlation formula and reliability based on Cronbach's Alpha. The data analysis technique used multiple regression at a significant level of 0.05. The results show that: (1) there is no correlation between age and motivation for doing sports, (2) there is a correlation between employment status and motivation for doing sports, (3) there is a correlation between the availability of sports facilities and motivation for doing sports, and (4) there is a correlation between age, employment status, and the availability of sports facilities towards the motivation for doing sports.

**KEYWORDS:** Age, Employment Status, Availability of Sports Facilities, Motivation for Doing Sports, UNY's Faculty Staff.

### INTRODUCTION

Sport is all systematic activities to encourage, foster and develop physical, spiritual and social potential. Exercise is a necessity that every individual needs to increase body immunity. Besides that, there are many benefits that can be felt when doing sports, including exercise can prevent heart disease, diabetes, osteoporosis, cancer, obesity, and injury (Suandiana et al., 2021). Sports can also improve the quality of life that is planned with various healthy lifestyles (Zhou et al., 2020). Some of the functions of sports according to Wilkwerson and Dodder (Harsuki, 2003) namely emotional release, determining identity, social control, socialization, agent of change, collective spirit, and success. Exercise can also reduce anxiety and increase self-confidence and increase the ability to concentrate (Suandiana et al., 2021).

Sports activity can be defined as body movement produced by skeletal muscles and requires energy, besides that low physical activity is the main factor triggering the risk of chronic disease which is predicted to cause high mortality (Kamaruddin, 2020). Various physical activities such as running, walking, working, playing, lifting weights and various other physical exercises. Physical activity is any body movement that increases energy and energy expenditure or burns calories (Pranata, 2020). Physical activity, the most popular health promotion strategy, shows great potential in reducing stress and mental health problems (Zhang et al., 2022). Involvement in sports activities has many benefits (such as improved physical health and reduced symptoms of depression or anxiety) and is associated with a variety of positive personality traits (Greitemeyer, 2022).

The COVID-19 pandemic in 2020 brought many changes to people's lives. All activities including study, work, worship, even sports are recommended at home, sports can be done outside the home or inside the home. The COVID-19 virus emphasizes everyone to keep their distance or comply with health protocols so that the impact can not occur directly (Suandiana et al., 2021). The COVID-19 pandemic that has occurred in several countries will continue until 2021 for an indefinite time limit. Vaccine injections have been carried out by almost all countries, including Indonesia, but people still have to comply with health protocols (Lasanas et al., 2021). Regular physical activity is a major health behavior from a public health perspective, because it has a tremendous impact

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on health. Sports activities during the COVID-19 pandemic have increased because sport is considered to drive away boredom at home, increase immunity, fill free time, and increase energy in carrying out daily routines.

In the results of a preliminary study conducted by researchers in early 2021, which was still during the Covid-19 pandemic, it showed that most UNY employees rarely carried out sports activities either at home or in the workplace environment. This is due to the adaptation of new living habits with health protocols that must be obeyed. The successful implementation of education cannot be separated from the physical and spiritual health of its human resources. Taking into account the heavy duty of UNY officials/employees who demand prime health conditions, every UNY official/employee needs to maintain health, including by exercising regularly. Based on the Chancellor's Circular No. 10/SE/2021 concerning sports hours, Yogyakarta State University (UNY) has implemented a Physical Fitness Gymnastics program which is held every Friday morning before working hours. The main purpose of these activities is to maintain and improve the quality of health and endurance in order to support the productivity of the performance of UNY officials/employees.

In the preliminary study data through a questionnaire conducted on FIKK UNY students showed that less than 50% of FIKK students took part in gymnastics on Friday morning every Friday morning. This is what then makes the author want to know the motivation to exercise in FIKK students. In addition, according to FIKK staffing statistics, it can be seen that the age range of FIKK staff members is 25 to 53 years; FIKK staff work status is divided into two, namely PNS and Non-PNS with each number being 34 PNS and 38 Non-PNS; The average working hours of FIKK Tendik Employees for 5 days is 42 hours, with standard working hours of 8.5 hours per day.

Performance is one of the issues that is still the center of attention for organizational leaders and stakeholders. This is because performance affects the achievement of organizational goals that have been set. Performance is an achievement or result of an action taken by an employee based on the expertise he has in a particular situation (Wardoyo Putro & Nanda, 2021). Employee performance can be measured at high or low or good or bad. The result of an employee's performance depends on the factors that influence the person's performance. One of the factors considered to affect performance is age and employment status. Job status as the position of worker/employee in the organization (Julindrastuti & Karyadi, 2022). Furthermore, the position in question is whether the employee in the organization has a position as a PNS or a non-PNS employee.

The relationship between employee status and performance was also studied by (Permana & Wahyuni, 2020) who found a significant relationship. Adedeji J conducted research on government employees in Nigeria and found evidence that employee status has a significant effect on performance (Wardoyo Putro & Nanda, 2021). According to the theory of justice motivation presented by J. Stacy Adam states that a person will maintain a balance between what they contribute to the organization and what they get from the organization. (Diel et al., 2021). This means that non-PNS employees whose rights are lower than PNS employees will contribute less than PNS employees in an effort to maintain the balance of justice they receive.

According to Widiyatun (Moray et al., 2016) factors that influence human motivation to do work or activities are: 1) Physical factors and mental processes; 2) heredity, environment, and maturity or age factors; 3) One's intrinsic factor; 4) Facilities and infrastructure; 5) Situations and conditions; 6) Programs and activities; 7) Audio visual (media), etc. Motivation to exercise is influenced by internal factors and external factors (Bayupeace et al., 2022). Internal factors include the desire to grow and develop, express oneself, and hope. External factors include available facilities, facilities and infrastructure, training methods, training programs and the environment.

Moving on from the availability of sports facilities in an area, it is easier for people to use and utilize them in carrying out various sports activities according to their respective hobbies, needs and desires with the available sports facilities. However, if sports facilities are available in limited areas, the opportunity for people to perform or use sports facilities will also be limited, which will reduce their interest in and participation in sports activities. Thus the availability of sports facilities and infrastructure is very influential on a person's motivation in doing sports.

### **METHODS**

This type of research is correlational research with an ex post facto approach with survey methods. Ex post facto research is research that aims to find causes that allow changes in behavior, symptoms or phenomena caused by an event, behavior or things that cause changes in the independent variables that have occurred as a whole. (Siyoto & Sodik, 2015). The type of data in this study is quantitative data. In this study, age, employment status, and the availability of sports infrastructure are the independent variables and the motivation to exercise is the dependent variable.

The population in this study were educational staff (tendik) at Yogyakarta State University who were still actively working with a total of 775 people. The sampling technique used Random Sampling with a total sample of 194 people. The working age range in this study was 17-65 years consisting of the categories of late adolescence, early adulthood, late adulthood, early elderly and late



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elderly.(Arisandi, 2018). Meanwhile, the employment status variable is divided into two, namely PNS and Non PNS. The instrument for the availability of sports infrastructure was adopted from PP No. 16 of 2007 concerning Organizing Sports, article 89 paragraphs 2 and 3. The sports motivation instrument adapted the Sport Motivation Scale instrument from the Journal of Sport & Exercise Psychology, 17, 35-53 with the title Toward a New Measure of Intrinsic Motivation, Extrinsic Motivation, and Amotivation in Sports written by Luc G. Pelletier, Michelle Fortier, Robert J. Vallerand, Nathalie M. Briere, Kim M. Tuson and Marc R. Blais, 2016 by translating the original instrument into Indonesian(Pelletier et al., 2016).

### FINDINGS

The analysis in this study is to use multiple regression analysis which aims to test the hypotheses that have been made, namely to find out the relationship of the independent variables (age, employment status and availability of sports infrastructure) to the dependent variable (exercise motivation) in a partial way (relationship between one independent variable and the dependent variable) and simultaneous (the relationship between all independent variables on the dependent variable). The following research hypotheses will be tested:

1. Ho: There is no relationship between age and motivation to exercise  
Ha: There is a relationship between age and motivation to exercise
2. Ho: There is no relationship between work status and motivation to exercise  
Ha: There is a relationship between work status and motivation to exercise
3. Ho: There is no relationship between the availability of sports facilities and the motivation to exercise  
Ha: There is a relationship between the availability of sports equipment and the motivation to exercise
4. Ho: There is no relationship between age, working hours, and the availability of sports infrastructure on the motivation to exercise.

Ha: There is a relationship between age, working hours, and the availability of sports infrastructure on the motivation to exercise. Data processing and calculation of partial and simultaneous test statistics using the SPSS program with a significance level of 0.05 ( $\alpha = 0.05$ ) and a 95% confidence level with a total of 194 respondents.

The t test is used to see whether the independent variable has a significant effect on the dependent variable and to make a decision whether Ho or Ha is selected by calculating the significance value of the statistical results.(Sugiyono, 2012).

**Table 1. Partial Multiple Regression Test Results**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	std. Error	Betas		
1	(Constant)	54,416	5,399		10,078	0.000
	AGE	-0.134	0.073	-0.125	-1,823	0.070
	JOB STATUS	6,000	1.426	0.282	4,209	0.000
	SARPRAS OR	1,296	0.178	0.457	7,286	0.000

Based on the table above, the independent variable age has a significance value above 0.05, which means that hypothesis 1 has an answer that Ho is accepted and Ha is rejected. Then the variables of employment status and sports infrastructure have a significance value of less than 0.05, which means that hypotheses 2 and 3 have answers Ho is accepted and Ha is rejected.

The F test is used to see the effect of the independent variables simultaneously on the dependent variable and to make a decision whether H0 or Ha is selected through calculations and the significance value(Sugiyono, 2012).

**Table 2. Simultaneous Multiple Regression Test Results**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	MeanSquare	F	Sig.
1	Regression	6275,630	3	2091,877	25,453	.000b
	residual	15615,117	190	82,185		
	Total	21890,747	193			

a. Dependent Variable: MOTIVATION OR

b. Predictors: (Constant), SARPRAS OR, EMPLOYMENT STATUS, AGE

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Based on the table above, it can be seen that the significance value of the simultaneous test or test to find out the relationship between the independent variables simultaneously (age, employment status and availability of sports infrastructure) on the dependent variable (exercise motivation) is worth 0.000 or smaller than 0.05 . This means that there is a relationship between the variables of age, employment status and the availability of sports infrastructure simultaneously on the motivation to exercise. Therefore, hypothesis 4 states that Ho is accepted and Ha is rejected.

To see the level of influence between the two variables, namely the independent variables (age, employment status and availability of sports infrastructure) on the dependent variable (exercise motivation) can be seen in the coefficient of determination table.

**Table 3. The coefficient of determination R<sup>2</sup>**

Summary models					Change Statistics				
Model	R	R Square	Adjusted R Square	std. Error of the Estimate	R Square Change	FChange	df1	df2	Sig. FChange
1	.535a	0.287	0.275	9,066	0.287	25,453	3	190	0.000

a. Predictors: (Constant), SARPRAS OR, EMPLOYMENT STATUS, AGE

Based on the table above, it can be seen that the coefficient of determination is based on the adjusted R square value of 0.287, which means that the value of the relationship between the independent variables (age, employment status and availability of sports infrastructure) to the dependent variable (exercise motivation) is 28%.

**Table 4. Effective Contribution and Relative Contribution**

VARIABLE	Effective Contribution	Relative Contribution
Age	1%	5%
Job status	6%	20%
Sarpras OR	21%	75%
AMOUNT	29%	100%

Based on the table above, it is known that the total effective contribution of all independent variables to the dependent variable is 29% with details of the variables age and motivation to exercise by 1%, employment status and motivation to exercise by 6%, and the availability of sports infrastructure and motivation to exercise by 21%. . While the remaining 71% of the three variables above are influenced by other factors.

## DISCUSSION

Age as a factor influencing physical activity can be seen from the results of research by Muzamil et al. regarding age in terms of the sport of choice. Selection of the type of sport is influenced by a person's ability to age. As age increases, physical activity will also decrease (Muzamil & Martini, 2020). Regular physical exercise and sports activities with the right dose besides being beneficial physiologically increase muscle mass, help maintain the elasticity of blood vessels and blood pressure and reduce the work of the heart, increase the diffusion of oxygen from the lungs into the blood and maintain hormonal and reproductive functions (Antoni & Suharjana, 2019) (Juniarto & Subandi, 2022). Physical exercise activities can also reach mental aspects including being more confident, happy, feeling refreshed, more creative, reducing stress and tension, being more sociable and increasing spontaneity. (Mammen & Faulkner, 2013). Thus physical exercise activities have become a necessity for the purpose of improving one's health status and physical fitness.

Physical fitness is the body's ability to carry out activities without experiencing significant fatigue (November & Sugiyama, 2022). Someone will get a good level of fitness if they regularly do physical activity or exercise (Rauner et al., 2013). Physical activity carried out by humans will be closely related to quality of life, health, and well-being (Zhao & Chen, 2018). Conversely, if humans do not carry out physical activity according to their needs, they are likely to be easily infected with diseases due to sedentary (hypokinetic) conditions such as type 2 diabetes. (Taylor et al., 2013). Low levels of physical activity will increase the risk of obesity and many other chronic diseases including coronary heart disease, diabetes and colon cancer (Ogilvie et al., 2011). However, it cannot be avoided that a decrease in physical activity in general will occur in the elderly along with decreased muscle ability, the appearance of stiffness, and pain in the joints. (Oktriani et al., 2020).

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Decreased health parameters such as decreased physical fitness, increased physical complaints, and increased BMI scores as a result of increasing age in the age range of 33-77 years (Tittlbach et al., 2017). The effect of age on physical fitness will be seen when a person is aged 11-18 years or during adolescence (Gakhar & Malik, 2017). From the discussion above, it means that the results of this study make new findings because they show a reality that is different from the results of previous studies. This can be influenced by other factors that are directly related to physical fitness such as an active lifestyle, a healthy lifestyle, and the type of physical activity carried out. (Ogilvie et al., 2011).

The influencing factor is employment status accompanied by a high income level which has a positive relationship/correlation with sedentary work. Financial conditions greatly affect sports participation (Zeng et al., 2019). Households with greater availability of financial resources will be able to spend their money on recreational needs, including the need to exercise. In contrast, families of low socio-economic status often neglect participation in sports, as they face a heavier financial burden (In Bartolomeo & Papa, 2019). Economic factors can play a role as one of the influential factors, for example when an economic crisis occurs it tends to increase a person's economic burden and increase psychological stress. This led to a more sedentary lifestyle. The economic crisis also affected the quality of a person's nutrition accompanied by a decrease in physical activity. Even so, various studies have shown different results.

One of the factors that influence sports motivation is environmental factors (*Participation in physical activity* Ty, 2009). Environmental factors, namely the existence of sports facilities and safety, are important factors that can affect sports activities (Abd-latif et al., 2012). The more sports facilities available, the easier it is for the community to use and utilize them for sports activities but conversely, the more limited the available sports facilities, the more limited the opportunities for the community to use and utilize for sports activities (Ferdinand et al., 2012). Other research states that the existence of sports facilities is believed to be related to motivation in exercising (Eriksson et al., 2012; Halonen et al., 2015; Limstrand & Rehrer, 2008; Ranchod et al., 2014) In particular, closer proximity to sports facilities was associated with high levels of physical activity and exercise (Addy et al., 2004).

In addition to the age factor, employment status and the availability of infrastructure that can support a person's success in carrying out exercise movements is the level of motivation he has. The amount of motivation that exists in a person will be influenced by the motives that exist in a person himself. This motive by itself will build great strength to carry out an activity that is being practiced, one of the motivations that is needed is the motivation to be healthy. If it is related to human life today, there is motivation in living a healthy lifestyle. It is known that an increasingly modern human life results in less physical activity being carried out. The large use of electronic and motorized devices adds to the lack of human activity at this time.

Exercising is believed to have several physiological benefits by doing it regularly and regularly, so that it can improve the working power of the heart, lungs, blood circulation, muscles and joints. (Di et al., 2013). By doing regular and regular sports activities can improve one's fitness and health level. When doing sports activities, it is necessary to pay attention to the duration and intensity of the exercise so that there are no mistakes when carrying out sports activities, core exercises ranging from 15 to 60 minutes aim to increase the functional capacity of the body, while high intensity exercises and short duration of exercises result in the body's response being the same as the intensity low training with a longer duration. Exercising regularly will certainly play a role in increasing bone mass and density so that the risk of joint disease can decrease (Lesmana, 2017).

The role of sports in human life is very important because through sports is part of an effort to improve the quality of life that is directed at physical, spiritual and mental fitness. This is also aimed at the formation of character, personality, discipline and high sportsmanship as well as increasing achievements that can generate national pride. At this time sports are not only used as a way to achievement, but sport has become a lifestyle. Awareness of a healthy lifestyle today is often found by people exercising in the morning and evening. The busyness that people have been through from early morning until late at night requires a new energy to carry out activities the next day. Besides that, they are susceptible to disease, so exercising is one way out to stay healthy and fit. In fact, it is often found that by exercising the body will return to health, fit, and gain ideal body weight.

### CONCLUSION

Based on the results of the research that has been done, it can be concluded that

1. There is no relationship between age and motivation to exercise in Yogyakarta State University educational staff with a p value of 0.070.
2. There is a relationship between employment status and motivation to exercise in Yogyakarta State University educational staff with a p value of 0.000.
3. There is a relationship between the availability of sports infrastructure and the motivation to exercise in Yogyakarta State University educational staff with a p value of 0.000.

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4. There is a relationship between age, employment status, and the availability of sports infrastructure on the motivation to exercise in Yogyakarta State University educational staff with a p value of 0.000.

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## Women's Resilience during the Pandemic Era in 'Perempuan Dalam Kotak' Short Story by Aziz Athar



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**ABSTRACT:** During the pandemic, women occupied a core position and role in maintaining the family in various dimensions. Women (mothers) perform roles in various fields at the family and community levels. This study aimed to describe the roles and strategies for women's resilience in dealing with problems during the pandemic, expressed in literary works. The research method used in this study was a descriptive qualitative approach, with the data source coming from the short story "*Perempuan dalam Kotak/Women in a Box*", which is included in the selected collection of short stories #ProsaDiRumahAja Pandemi. The collected data were in the form of a linguistic unit that described the focus of the research problem and analyzed using a feminist literary criticism approach. The results of the study reveal, first, the problems faced by women include economic, family, and cultural problems. Second, in dealing with these problems, women base themselves on several aspects, involving spirituality, self-efficacy, and self-assessment. The roles played, the problems faced, and the efforts made to survive during the pandemic in substance were real manifestations of women's resilience when dealing with the pandemic. In conclusion, women were the most severely affected during the pandemic as they are taking on broader roles and positions in efforts to prevent, overcome and maintain the continuity of family and community life during the pandemic. Women have resilience or resilience in dealing with the pandemic with all the problems that surround it.

**KEYWORDS:** Self-efficacy, self-assessment, the role of women, and resilience

### I. INTRODUCTION

During the pandemic, women occupied a core position and role in maintaining the family in various dimensions. Women (mothers) perform roles in various fields at the family level. For example, in the health sector, women remind family members to comply with health protocols and educate them on applying 5M. In education, women or mothers are important figures in the online learning process. In the economic field, women actively provide healthier and more nutritious food intake. In the social field, facts show that women are more active in mobilizing food security solidarity activities (Werdiningsih & Senowarsito, 2021).

During the pandemic, various terms were often presented that substantively described the dynamics and changes experienced by society. Nursalam, Sulaeman, & Mustafa (2021) specifically examines the term discourse on the Covid-19 social restriction policy. The results of the study found several terms that appeared during the pandemic, namely lockdown, social distancing, physical distancing, regional quarantine, large-scale social restrictions, and civil emergency. Text or discourse is part of efforts to prevent Covid-19.

Data from the Indonesian National Commission of Women show that during the Covid-19 pandemic, women experienced a manifold increase in workload, especially in the domestic sphere or household chores. The increased burden was even greater for women who run a double border. Apart from being responsible in the domestic sphere as housewives, women also carry out roles in the public sphere as workers who are responsible for the economic stability of the family (Afrizal, Legiani, & Rahmawati, 2020). Women are not only required to adapt to new habits but also have to be responsible for carrying out multiple roles in the domestic sphere and the public sphere.

Many studies have shown that women are resilient when dealing with the pandemic and all the problems surrounding it. Resilience is overcoming and adapting to difficult events and returning to living a decent life. This ability can be seen in courage, tenacity, sensitivity, leadership, negotiation skills, initiation skills, and consistency of action in dealing with serious problems, such as the Covid-19 pandemic (The National Commission of Women, 2021).

Over time, the Covid-19 pandemic, with all its problems, will become a historical record and collective memory for humankind worldwide. The Covid-19 virus is not the first and likely not the last type of outbreak. In the history of human civilization, several plagues have hit the world, including the Antonine Plague (165-180 AD), the Japanese smallpox epidemic (735-

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737 AD), the Justinian Plague (541-542), the Black Death epidemic (1347-1351), new world smallpox epidemic (1520), great London Plague (1665), Italian Plague (1629-1631), Cholera pandemic 1-6 (1817-1923), Third Plague (1885), Russian flu (1889 – 1890), Spain flu (1918-1919), Asian flu (1957-1958), Hong Kong flu (1968-1970), HIV/AIDS (1981-present), swine flu (2009-2010), SARS (2002-2003), Ebola (2014) -2016), MERS (2015-present) and Covid-19 (2019-present). In a broader context, historical records and collective memory of the epidemic can be realized in factual scientific documents and imaginative creative works. Both scientific and imaginative document forms can be used as learning materials for future generations (Kompas, 2020; Rosyid, 2021). The events of the Covid-19 pandemic can also be expressed through humorous discourse on various social media with various character values (Pangesti, Markhamah, & Rahmawati, 2022).

One of the forms of imaginative creative documentation that records and perpetuates pandemic events is in the form of literary works. Social reality, including outbreaks or pandemics, is a wealth that remains to be explored as material for inspiration for the creation of literary works (Firdaus, 2022). One of the literary works inspired by the Covid-19 outbreak is a short story entitled "Woman in a Box", which is included in the selected collection of short stories #ProsaDiRumahAja Pandemi.

The short story "*Perempuan dalam Kotak*"/Women in a Box" tells about the character 'I', a woman who had to carry out her duties as a wife and, at the same time, a mother of a child. The little family lived in a small two-room apartment. The pandemic that hit caused everyone to work from home, including the character's husband. The husband was Japanese and was an "office person" who did not want to and had never done any housework, including taking care of the children. The husband was only busy with office work, unaware of the time, and even often felt disturbed when he heard his child's cry. Sometimes there were attempts to resist from 'I' to rebuke the husband so that he took part in taking care of the house and his child. However, what was received was a form of anger and physical violence from her husband.

When the character 'I' experienced violence from her husband, she remembered that when she was a child, she often heard about the fights and violence her father did to his mother. His father and mother's families experienced failures that led to separation. She decided to go with her mother while her younger sister followed her father. This condition made her reluctant to complain and tell her mother about her household problems. Another fact revealed in this short story was that her younger sister also had a similar problem. Her sister's husband was forced to be laid off and stayed at home as unemployed. This condition caused her sister's husband being unstable and often got angry and committed violence.

As described in the initial section, women were the most severely affected during the pandemic. On the other hand, women took on a wider role and position in efforts to prevent, overcome and maintain the continuity of family and community life during the pandemic. For this reason, it was interesting to study what roles women played during the pandemic, as described in the short story "*Perempuan dalam Kotak*." What problems did women face during the pandemic described in the short story "*Perempuan dalam Kotak*." What efforts were made by women to sustain life during the pandemic described in the short story "*Perempuan dalam Kotak*." The roles played, the problems faced, and the efforts made to survive during the pandemic substantially manifested women's resilience in dealing with a pandemic.

## II. METHODOLOGY

This study applied a descriptive qualitative approach. The data in this study were linguistic units in the form of words, phrases, sentences, and paragraphs that contained ideas/messages that described women's resilience in dealing with the Covid-19 pandemic. The research data source is a short story entitled "*Perempuan dalam Kotak*" in the Collection of Selected Short Stories #ProsaDiRumahAja Pandemi. Based on the focus of the problem, the short story was chosen as a data source with the following considerations: (a) raising the theme of women dealing with a pandemic, (b) presenting the main female character, (c) presenting the problems, roles, and efforts made by women in dealing with pandemic.

The researchers collected the data using documentation study techniques or literature review with the consideration that the data sources were phenomenological and idiographic: exposure to verbal texts in literary works. Data collection activities were carried out by, first, the researcher reading carefully and thoroughly all data sources based on their knowledge and insights possessed. In reading data sources, researchers based on a critical attitude, accuracy, and thoroughness to live and understand the meaning in depth, adequate, and sufficient (verstehen and Erlebnis principles). Second, after completing the first activity, the researcher read the data source again to mark certain parts that would be raised into data by coding according to the focus of the problem. The second step was followed by recording the selected data to be analyzed.

Data analysis activities were carried out with the following steps. First, the researchers read the short story to appreciate and understand in depth all data sources, then selected and marked words, phrases, sentences, paragraphs, and discourses that contained information related to the roles, problems, and efforts made by women in dealing with the pandemic. Second, identified and classified all data as a whole and thoroughly based on the problem points that had been formulated, not looking at section

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by section. Identification and classification of data related to the research focus that involved (a) the role of women, (b) the problems faced by women, and the efforts made by women in dealing with the Covid-19 pandemic. Third, made a semiotic reinterpretation of all identified and classified data to find coherence, unity, and relationships between data. In this way, a complete and comprehensive understanding of women's resilience in dealing with the pandemic was obtained.

The data analysis was carried out by applying the principles of feminist studies and was carried out together with data collection. The data collection and analysis related to the role of women from a gender perspective and the impact of the pandemic on the position and role of women in the domestic and public spheres. Using qualitative data analysis techniques from Miles, Huberman, & Saldana (2020), data analysis was also carried out through data condensation, data presentation, and making inferences in the form of meanings and conclusions.

The validity of the research data was checked in two ways. First, by reading and reviewing research data sources many times to obtain adequate appreciation and understanding of the meaning. Repeated reading and review were also carried out on various reference sources relevant to the research, focusing on obtaining a sufficient understanding. Second, by checking with colleagues who were considered to have competence related to the research focus and having discussions and exchanging ideas about the focus of research problems.

### III. RESEARCH RESULTS AND DISCUSSION

In accordance with the focus of the problems studied, the research results were related to three aspects, namely the role of women, the problems faced by women, and strategies for women's resilience in dealing with problems. Complete research results are presented in Table 1 below.

**Tabel 1. Wpmen's Roles, Problems, and Strategies of Resilience**

No.	Focuses	Aspects	Description
1	Women's roles in family	1. Household wives 2. Public workers	Manage and take care of the household Company workers who quit because their health was weak
2	Problems daced by women	1. Economic issues 2. Family issues 3. Cultural issues	a. Forced to quit work due to pregnancy and childbirth b. The relationship between wife and husband in domestic life c. Duties and responsibilities to take care for children d. Victims of unharmonious and divorced parents e. Cultural and national differences between husband and wife
3	Women's Resilience Strategies in facing problems	1. Spirituality attitude 2. Self Efficacy 3. Self Esteem	Attitude and awareness of spirituality in dealing with problems. Confidence in facing problems. Self-assessment as a capital to face problems.

In line with the presentation of research results, the discussion of research results is also related to three aspects, namely the role of women, the problems faced by women, and strategies for women's resilience in facing problems. A complete discussion of research results is presented in the following sub-sections.

#### a) Women's Roles in Family

Gender as an analytical tool is generally used by adherents of the social sciences who focus on structural and systemic injustices caused by gender. Gender, as stated by Oakley (Fakih, 2000, p. 45), is a difference that is not biological and not God's nature. Biological differences are natural such as sex, which is God's nature because they are permanently different. Meanwhile, gender is the behavioural difference between men and women due to social construction. Gender is not a difference that is God's nature or creation, but is created by both men and women through a long social and cultural process. Therefore, gender changes from time to time, place to place, and even from class to class, while sex will remain unchanged (Fakih, 2000:46).

Gender differences will give birth to gender roles that do not cause problems, so there is no need to be sued. Biologically (natural) women with their reproductive organs can get pregnant, give birth and breastfeed, so they have gender roles as nurses, caregivers, and educators of children. However, what is a problem and needs to be sued by those who use 'gender analysis' is the structure of "injustice" caused by these "gender roles" and "gender differences."



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Subordination to one sex generally occurs in women. Many policies are made without "considering" women important in the household, society, and the state. For example, the notion that eventually, women have to go to the kitchen so they do not need to go to high school. Another example is because of the notion that women are "emotional," it is not right to become party leaders or managers. For centuries, for religious reasons, women were not allowed to lead anything, including worldly matters, were not trusted to give testimony, and did not even receive an inheritance. It is the emergence of religious interpretations that result in the subordination and marginalization of women that needs to be questioned (Fakih, 2000:47).

Negative labelling (stereotype) of gender generally affects women (Fakih, 2000, p. 49). This labelling ultimately causes discrimination and various other injustices. In society, many stereotypes are labelled for women, limiting, complicating, impoverishing, and harming women. There is also a belief that men are the breadwinners of the family, so any work done by women is only considered 'additional' and can be paid less.

Because women's gender role is managing the household, many women bear more and longer domestic workloads (double burden) (Fakih, 2000, p. 49). The gender role of women who have to maintain tidiness results in the growth of traditions and the belief of the community that they must be responsible for the implementation of all domestic work. The workload has doubled, especially for women working outside the home. Apart from working outside the home, they still have to be responsible for all domestic work.

In the "Perempuan dalam Kotak" short story the character 'I' plays a role as befits a woman in a family. At first, she was managing the household. Considering maintaining her health due to pregnancy, she resigned from her office (Sari & Zufar, 2021). The decision received support from her husband with the consideration for temporarily preparing and caring for the child.

*To be honest, I miss going to work. Going to the office, sitting in the cubicle, enjoying the gossip from colleagues. I resigned from the last office since my body weakened due to pregnancy. Tormented already, even companies do not want to be burdened by less productive employees. My husband said I am just a housewife. Meanwhile, he also said to reassure me. When Ryo is old enough, I can return to the world of work and continue my career, he continued. Then, he told me about career women in Japan. There, the company provides full salary while the women are on maternity leave, but their workload is reduced slowly when they return to work. A smooth way to cast out. Atarimae. For my husband, women should just stay at home (Azthar, 2020: 221).*

### b) Problems Faced by Women

One of the women's main roles in the family is as a wife in her relationship with her husband. In family life, husband and wife have equality and alignment about rights, obligations, and responsibilities (Nurfitriani, 2022). From a legal perspective, husband and wife have equal rights and positions in domestic life. Law Number 16 of 2019 concerning Amendments to Law Number 1 of 1974 concerning Marriage, Article 30 emphasizes that husband and wife have a noble obligation to uphold the household, which is the basis of the structure of society. Furthermore, Article 31, Paragraph 1 emphasizes that the rights and position of the wife are in balance with the rights and position of the husband in domestic life and social life together in society.

The fact is that equality and equality are not always experienced, especially for women. This was the case with the character 'I' in the short story "Perempuan dalam Kotak" in her relationship with her husband in a family (Muyassaroh, 2021). The husband considered himself an office person without obligation to be involved in household affairs. The real problem arose when the husband, who usually spent his daily time at the office, now had to be at home all day when he had to work from home because of the pandemic.

*Then the pandemic reached Jakarta. My husband had to work at home, and we laid off the maid. My husband was a born office man, so he was not good at doing any housework. I had to do everything alone. Even though being with him day and night just eats up my energy. While I finished all the housework, my husband just sat on the living room floor, near our son's bed. His eyes could not leave the laptop when Ryo was crying. He called my name many times until I held our baby, and there was no more crying. Whereas he always had important emails to reply to or Yamada-Sachou's calls to answer.*

The character 'I' also experienced physical acts of violence committed by her husband. Even her husband's actions reached the form of a dangerous threat. In certain situations, due to fatigue and being burdened with various household matters, the character 'I' tried to take action to remind her husband to pay attention to his child. This action was taken not as a form of resistance but merely as an attempt to divert the husband's attention from work affairs, which never stopped, thus neglecting his child.

*We argued. I brought up every mistake he made while working at home. Pointing at the papers scattered on the floor along with wires that looked like snake corpses. The carpet was stained with drops of the ice cream he had enjoyed this afternoon. Spill the water dispenser that he just let go of. I was so annoyed that I kicked the laptop screen until it toppled. My husband took my arm and twisted it. I groaned in pain, trying my best to release his grip. He forced me to apologize.*

*... I left the room while Ryo was asleep. I saw my husband sitting on the couch, watching television.*

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"Sit," he said, touching the couch beside him. I obediently approached and sat down. His hand motioned for me to come closer. He hugged me and stroked my hair. "Luckily my laptop is fine. Otherwise, you definitely won't survive." I winced in pain as he tightened his grip even more.

From a gender perspective, the relationship between husband and wife has equality, similarity, and equality. On the other hand, in a natural perspective associated with basic aspects based on gender, there are fundamental differences. For example, giving birth and breastfeeding are only naturally attached to women. However, caring for and caring for children in all its dimensions is a shared responsibility and obligation between husband and wife.

Events and life experiences experienced by the character 'I' in the short story "Perempuan dalam Kotak" correlate directly with her past events. Relationships and family ties between her father and mother experience disharmony. Her parents lived separately because of the divorce. The less harmonious relationship between her father and mother became part of her life journey. She often heard verbal and physical arguments between her father and mother as a child. The memory came back when she also received harsh and rough treatment from her husband.

*Scenes from the past played in my memory. Papa ignored my screams. He was so focused on venting his anger on Mama. Raised hand. Reddening cheeks. Memories are like moss on a rock. I scrape it repeatedly, it pops up again and again.*

As in Japanese culture, her husband's country of origin, women should stay at home. That is the husband's consideration for her to stop working and stay at home. This condition was long before the pandemic hit, so the husband was still busy all day and had not been home for a long time. When the pandemic hit, and her husband had to work from home, the cultural differences between her husband and herself often became the cause of fights. Her husband was a hard worker who placed obedience and obedience to his chief. Regarding work and office leadership, the husband thought that household affairs and caring for children were trivial matters that were the full responsibility of the woman (wife).

*In Japanese, I replied, "Ryo has been crying for a long time, you were just in the room. Can't hear it?"*

*"I heard, but Yamada-Sacho called."*

*"More important boss than child!"*

*"Don't scream! I'm dizzy with office work, you better not need trivial things."*

Overall, the problem faced by the character 'I' relates to her position and existence as a woman, wife and mother in the family. This position and existence must deal with and even conflict with domination and unequal relations with her husband.

### c) Women's Resilience Strategies in Facing Problems

In principle, everyone has the resilience to face life's problems. With their respective capacities, everyone can bounce back from adversity due to serious problems. The individual's ability to rise in the face of and overcome risky and stressful situations is the general concept of resilience.

In line with this opinion, psychologists conclude that each individual has the seeds of resilience (Mashudi, 2016). Every individual can be resilient naturally (Dewi, Djoenaina, & Melisa, 2004). Individuals will be able to rise from the trauma they face if they can manage potential resilience well (Nasution, 2011).

Resilience is an individual's effort to adapt well to stressful situations so that they can recover and function optimally and try their best to overcome difficulties (Missasi & Izzati, 2019). Waxman, Gray, & Pardon (2003) further explain that resilience is related to efforts to limit negative behaviors due to pressure from problems or difficulties. Resilience is related to adaptive ability in the face of adversity. Resilience also relates to the ability to overcome and adapt to severe events or problems that cause pressure and stress.

Santelli & Crosby (in Missasi & Izzati, 2019) emphasize that resilience is related to stressful conditions (pressure) experienced by individuals. Resilience and stress are conditions of individual psychological construction that cannot be separated. The potential for resilience in a person can only be explained and described if conditions of pressure (difficulties) are encountered. In certain positions, it is the pressure conditions that lead to stress. Efforts to manage stressful conditions that lead to positive adaptation are a form or manifestation of one's potential for resilience in dealing with problems (Missasi & Izzati, 2019). Resilience describes how individuals recover from trauma or setbacks and can overcome life challenges (Eley et al., 2013). The main activity of resilience is a good adaptation process that is carried out by someone in dealing with trauma or events that cause pressure or stress (Mahmood & Ghaffar, 2014).

Resilience is also interpreted as a person's ability to get back up after experiencing difficulties to continue life with the hope that it will improve. In subsequent developments, resilience potential is influenced not only by genetic and individual factors but also by societal and environmental cultural factors surrounding each individual (Rutter, 2006). Genetic factors influence resilience as an individual behavior, but in its manifestation in concrete actions, it is also influenced by culture. In this case, the

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influence of culture can be positive, which can increase resilience. On the other hand, it can also be negative, which reduces the level of resilience (Wong & Wong, 2006).

As previously described, basically every individual has a natural resilience ability. Factors that influence and condition the potential for resilience include spiritual attitudes, self-efficacy, and self-assessment. First, spirituality is a feeling of attachment or connection to something bigger than ourselves. This condition is accompanied by an effort to find universal meaning in life (Ardian, 2016). Spirituality is illustrated as an experience or feeling of serenity and peace in a holy place because of a transcendental relationship. Second, self-efficacy is an individual's belief in one's ability to carry out an activity. Self-efficacy appears in the ability to organize, carry out tasks, achieve a goal, produce something, and implement actions to display certain skills (Zagoto, 2019). Third, self-assessment is a condition of one's feelings about oneself about the importance of achievement, positive interpersonal relationships, and psychological well-being. Self-assessment is related to the belief that he can act and face life's challenges (Lawrence in Sufrimansyah, 2015).

The character 'I' in the short story "Perempuan dalam Kotak" can be identified as having resilience in dealing with life's problems. Toughness in facing life's problems as a form of potential resilience is related to the attitude of spirituality one has. Spirituality is an aspect of humanity that refers to how individuals seek and capture explicit meaning from a series of events experienced. The spiritual dimension tries to be in harmony with the universe and seeks answers when facing emotional stress, physical illness, or death (Krentzman, 2013). The choice of thought and understanding so that it reaches the spiritual expression that no matter how great it is, a pandemic event will definitely come to an end is a form of the resilience of the 'I' character in dealing with life's problems.

*I realized I was like that little hamster. Even in a cage, the hamster still has choices. I still have a choice for myself and Ryo. In the meantime, I'll hang on in this box. I'm sure, even as bad as the pandemic, it will all end.*

The attitude of spirituality is also seen in the closeness of the character 'I' with her child. She believes that Ryo, her son, can bring the strength of the soul to survive problems in the family. Children become reinforcing factors in themselves so they do not get stuck in negative behavior when facing difficulties.

*Ryo stopped crying. His hands played with my hair. I put my finger closer and grabbed it. His mouth opened and closed like a person chewing and spit out foreign vocabulary. My baby is so adorable, his smile was the antidote to my heart. I hummed, responding to his babble.*

The statement of the 'I' character above confirms the existence of a spiritual attitude within her as a potential booster for resilience so that she can survive facing life's problems. This aligns with what Delgado states (in Ardian, 2016) regarding the four important characteristics of spirituality. First, spirituality requires a belief system (willingness to believe) and what is believed to be the truth (belief in a higher power or religion based on core beliefs). Second, spirituality involves individual conditions in the search for meaning and purpose of transcendent attachment or mission of individuals who feel called by destiny and shift from material to idealistic values. Third, spirituality includes awareness of attachment to others, obtained through self-introspection. Fourth, spirituality is the belief that one can transcend oneself in a higher dimension, the desire for truth and purity, and that one can resolve difficulties, loss, and pain with that belief (Ardian, 2016).

The second factor that supports resilience in dealing with problems is self-efficacy. Self-efficacy refers to a person's belief that she/he can regulate and carry out the behavior or actions necessary to manage the situation. Self-efficacy is the most influential aspect of self-knowledge in human life. This influence can be seen in the fact that self-efficacy also influences individuals in acting. These actions include what someone will do to achieve goals, including the possibility of predicting what things will happen (Surfimanyah, 2015).

Substantially, self-efficacy is not related to the skills possessed but is an individual's belief about what can be done with the skills, regardless of the conditions. Self-efficacy is more about efforts to emphasize components related to one's self-confidence. This belief is an asset to face future situations that are unclear, unpredictable, and have the possibility of creating pressure (stress) (Novariandhini & Latifah, 2012).

Someone with high self-efficacy also believes that he can do something to change the events around him. Conversely, someone with low self-efficacy often thinks he cannot do things around him. Under certain conditions full of difficulties, people with low efficacy will easily give up. Meanwhile, people with high self-efficacy will try harder to overcome the challenges and difficulties they face (Schunk & Pajares, 2005).

In the short story "Perempuan dalam Kotak," the aspect of self-efficacy, which is the driving force for resilience, appears in the attitudes and actions taken by the character 'I' in dealing with the behavior of a husband who ignores their child. The character 'I' used her local language, Minang language, as a form of attitude towards her husband. By using that language, she felt

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confident that she could take a form of resistance against her husband's domination. Minang's language, which is her mother tongue and is very well mastered by her, is a means of expressing her choice of attitude towards her husband.

*My husband came out of the room, looking down because his eyes were glued to the cell phone in his hand. I waited for him to realize that he had neglected the baby. My waiting was in vain. When Ryo calmed down, I put him into the swing again. "Labiah paralu maangkek telepon dari bos daripada manjawek tangih anak yo?" I am not facing my husband. I often speak Minang when I am angry. He definitely does not understand, he does not even understand Indonesian, let alone Minang language.*

The aspect that marks the self-efficacy of the 'I' character is also seen in her belief in maintaining the integrity of her household. This belief is motivated by her baby, who has strengthened her, and her love for her husband that has existed so far. She still has faith that her husband still loves her, with proof of his willingness to leave his country, Japan, and moved to follow her to Jakarta.

*I was silent, my mind wandering. My eyes watched Ryo playing on the carpet in the room. He was blabbing about whatever it meant. My tears flowed. I loved my husband, and I know he loved me too. The proof was that he was willing to move from Tokyo to Jakarta to marry me.*

The strength of love for her children and the belief that her husband still loves them is a form of self-efficacy in character 'I' so that she can face life's problems, especially problems in the family. Self-efficacy drives the development of tough power or resilience in character 'I'. Even though she faced violence from her husband, she felt capable and confident to face the problem. She was able to think and act clearly so that she did not make decisions that were detrimental to herself and her family, especially to her children.

The third factor that drives resilience potential is self-assessment. Self-assessment is one's feelings related to the importance of achievement, positive interpersonal relationships, and psychological well-being (Refnadi, 2018). Self-assessment is a belief in one's ability to act and face life's challenges. Self-assessment is also related to the beliefs instilled in oneself to achieve happiness, feelings of worth, and decent conditions. More specifically, self-assessment is related to self-acceptance oneself. Does she/he have the appropriate, valuable, capable, or useful to face things that will, are, and have happened.

From the perspective of Maslow's theory, the need for self-esteem is categorized into two. First, respect or self-esteem includes the desire to gain competence, self-confidence, personal strength, and independence or freedom. Second, recognition from other people with achievements (Mendari, 2013). Self-assessment is formed through the interaction of individuals with their environment.

The self-assessment that strengthens resilience in character 'I' in the short story "Perempuan dalam Kotak" is also seen in her responses to the household problems experienced by her younger sister. Since her parents' divorce, she has been separated from her younger sister. Her younger sister preferred to live with her father, while she preferred to live with her mother. She decided not to tell her mother about domestic violence cases in her household and her sister's. She was reminded of the past of her mothers, who actually did not agree with the continuation of the marriage that has been carried out to date. She emphasized that she was able to overcome the problem without burdening her mother.

*I wanted to mention my household fight last night to my mom, but I am embarrassed. In the past, my mother was not sure about my decision to marry that foreign man. Now I understand. Everyone has another hidden side. The other side of my husband emerged after my question about the "Karaoke Melawai" receipt, which apparently my husband often goes to with his office friends.*

This quote is one of the proofs of the self-assessment ability of the character 'I' in dealing with family problems. This attitude can motivate her to take a positive attitude to uphold her household. These decisions and choices are a manifestation of the resilience of female characters (Chow, Abdulah, & Lee, 2022).

In general, self-assessment can also be used as a research variable. The level of self-assessment influences individual behavior in a certain way. Someone with a high self-assessment can make her/him feel valuable, respect, look at others as equals, and always want to progress and develop. On the other hand, someone with low self-assessment will face various social and psychological problems. Low self-assessment will affect low self-esteem, making it vulnerable to negative environmental influences. There is a tendency for people with low self-esteem to seek status and recognition for deviant behavior or actions (Owens, Stryker, & Goodman, 2006).

## IV. CONCLUSION

Based on the research findings and discussion, it can be concluded as follows. First, women are the ones who have been most severely affected during the pandemic. On the other hand, women take on a wider role and position in efforts to prevent,

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overcome and maintain the continuity of family and community life during the pandemic. Second, the problems faced by women during a pandemic cover various area of life, including economic, family, and cultural problems. Third, women are resilient in dealing with a pandemic with all the problems surrounding it. Resilience is the ability to overcome and adapt to difficult events and bounce back to live a decent life. Fourth, resilience is influenced by spiritual aspects, self-efficacy, and self-assessment.

### RECOMMENDATIONS

The short story 'Perempuan dalam Kotak' by Aziz Azthar presents learning through the roles of women in caring for the family. Women (mothers) perform roles in various fields at the family and community levels. This study described the roles, problems faced, and strategies for women's resilience in dealing with problems during the pandemic, as expressed in literary works.

- a. The problems faced by women include economic, family, and cultural problems. In dealing with these problems, women base themselves on several aspects, namely spirituality, self-efficacy, and self-assessment.
- b. The roles played, the problems faced, and the efforts made to survive during the substance pandemic are concrete manifestations of women's resilience in dealing with a pandemic.
- c. Women are the ones who have been most severely affected during the pandemic. Women are also taking on broader roles and positions in efforts to prevent, overcome and maintain the continuity of family and community life during the pandemic. Women have resilience in dealing with a pandemic with all the problems that surround it.

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## The Contribution of Internal Audit to Credit Management in Financial Institutions in Mali



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**ABSTRACT:** The ultimate aim of this article is to present the role played by the internal auditor in the performance of decentralized financial systems (SFD). First of all, our reflections are directed towards a more in-depth literature review in order to better define the concepts and apprehend the nature of the binding relationship between internal audit and internal control, then we presented the research methodology followed in this case the qualitative methodology with exploratory aim, We then presented the results of an interview guide with seven auditors and a member of the management committee working in various Moroccan banks, who were of two types: the first considers that information and communication are the conditions for the success of an ICS, while the second emphasizes the importance of respecting the components of internal control. As with any study, our research was limited by the size of our sample, which we felt was limited due to the health crisis, which meant that managers were unavailable to carry out our interviews. The academic interest of this article lies in reinforcing the literature on the subject, while the managerial interest lies in detecting apparent gaps in the ICS to help managers in their decision-making. Our aim is to examine the contribution of internal audit to the effectiveness and efficiency of the internal control system. Our study is based on Moroccan banks. The interest of this report is to explore the ICS of the selected banks.

**KEYWORDS:** Internal Audit, Internal Control, Performance.

### I. INTRODUCTION

A microfinance institution is an organization that provides financial services to people who have little or no access to conventional financial services. It has existed for a long time in various forms, with mechanisms for lending to the poor having existed for millennia in Asia. The financial scandals that have taken place around the world in recent years have called into question the management processes and sustainability of banks in general, and their internal control systems in particular. The environment in which they operate has become extremely turbulent, and companies are faced with the need to improve their risk management processes. In this case, the function involved in understanding significant risks and reassessing them is internal auditing. This function, which is responsible for overseeing the organization's other functions, is an asset to the organization, since it supervises, evaluates and proposes solutions or even corrective actions to reduce the level of risk and reinforce the organization's immunity against them.

We feel it's vital to mention other factors that make the environment in perpetual motion, such as the development of technologies, new customer demands, and new risks that amplify uncertainty in decision-making. At this stage, to reduce the intensity of these factors, it is essential for managers to adopt a good internal control system, with the aim of successfully managing the company and then achieving the objectives set.

Assisting managers in fulfilling their responsibilities to the organization, providing in-depth analyses of the effectiveness of the tasks performed, contributing to the overall activities, and providing valuable advice on the activities supervised; be they administrative, IT, industrial, commercial or social, this sums up the role played by internal auditing in companies, making it a very important function within organizations. (Barbier. E, 1999).

In fact, for the internal audit function to be properly applied, practitioners and even auditors must adhere to a certain number of professional principles and standards, in order to carry out their mission successfully and contribute effectively to the improvement of internal control, and thus the achievement of corporate objectives. In order to overcome the consequences of an economic environment deemed unstable due to the unforeseen appearance of the pandemic, managers are expected to

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ensure the proper implementation of an internal control system, which is deemed essential to the successful organization of the company, and to the management of risks likely to hinder its continuity, including the internal audit function as a tool for steering the internal control system.

However, in most developing economies, only a minority of the population has access to financial services. Most people do not have savings accounts, nor do they take out loans with formal financial institutions. They rarely make withdrawals or deposits in financial institutions. Hence this limited access to financial services in developing countries has become an international concern.

Today, in both rural and urban areas, access to financial services is limited and reserved for the wealthy. Only a minority of the population is salaried, while the majority continue to carry out income-generating activities in the informal sector to meet their needs. One of the major problems they face is access to financing due to a lack of collateral.

However, microfinance practices in Africa are even older, especially those involving the collection of small savings. In countries such as Burkina-Faso, Togo and Cameroon, for example, the first savings and credit cooperatives were set up in the 1960s. These financial inclusion models proved insufficient to curb poverty. But microfinance developed in its modern form in the 1970s in Bangladesh, with Dr Muhammad Yunus, founder of the Grameen Bank and professor of economics at Chittagong University, making his mark. It is to him that we owe the current acceptance of microfinance as a tool for the economic and social development of the underprivileged.

This brilliant Bangladeshi economist used his practical work on investment theory with his students to discover the extreme financial indigence of his fellow bamboo stool manufacturers, who had no way of building up stocks of raw materials. Yet their need for credit is minute: a total of \$27 for 42 farmers who have no access to banks. Having lent them this sum out of his own pocket, he is able to discover how much their business increases, when they can buy the raw material in advance, thus escaping major price fluctuations. In this way, he paved the way for many other experiments around the world.

However, institutions are being created to provide the poor with the means to create their livelihoods and the tools to manage the associated risk. The success of the Grameen Bank, which now counts over 7 million poor Bangladeshis as customers, has been echoed around the world, but in practice, it has proved difficult to copy this experience. In countries where population density is low, it is much more difficult to create the conditions for profitability and local services and businesses. Nevertheless, the Grameen Bank has demonstrated that not only can poor people effectively manage and repay loans, but they can also pay high interest rates, enabling the institution to cover its own costs.

The microfinance sector has become a very important component of the financial architecture of developing countries, particularly in Africa and especially in the West African Economic and Monetary Union (UEMOA). UEMOA countries have implemented texts governing the work of decentralized financial systems in the union, notably the law regulating SFDs, adopted on April 06, 2007 by the Council of Ministers, and the decree implementing the law regulating SFDs, adopted on April 06, 2007 by the Council of Ministers.

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It mobilized more than 58.3 billion CFA francs of national savings and granted more than 70.444 billion CFA francs in loans, and the number of direct jobs created by SFDs represented 2,274 in 2014. At December 31, 2016, Mali had 127 SFDs with deposits of 68.912 billion CFA francs and 92.624 billion in outstanding loans with a customer base of 1042995 in 2016 (CCS/SFD,2017). Despite its economic and social weight, microfinance in Mali has continued to face difficulties that compromise its viability, its financial equilibrium and reduce its capacity to contribute to and reduce poverty in Mali. To correct these dysfunctions, the government has initiated the National Microfinance Development Policy and Action Plan (PNDMF/PA) for 2016 to 2020. This is built around the following strategic axes:

- ✓ Clean up and improve supervision of the microfinance sector;
- ✓ Promote broad and diversified access to financial services and protect customers' interests;
- ✓ Improve the environment and capacities of SFDs and strengthen the promotion and supervision of the microfinance sector.

By 2025, this national microfinance development policy aims to build a professional microfinance sector that contributes effectively to poverty reduction through the services provided by SFDs, and that is integrated into the global financial system. However, this explosion and growing professionalization of the sector has not gone hand in hand with high-quality managers who are fully aware of the ins and outs of the sector. The failure of many SFDs is due to their control environment.



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The main source of dysfunction in these institutions is poor management and weak internal control. This exposes them at some point in their existence to the risk of fraud and error. This is why good control and rigorous monitoring are imperative. SFDs therefore need to develop their own capacity in this area, by setting up an internal audit department to monitor the internal control systems in place.

The credit portfolio, and in particular loans in distress, is the main source of serious problems, which are not always immediately detectable and may even escape the attention of management, sometimes until it's too late to resolve them. Credit plays an important role in the business of SFDs. Poor credit management is the source of many dysfunctions in these establishments, hence the need to evaluate this item. Thus, auditing the management of loans in difficulty is an essential tool for managing the loan portfolio and maintaining the structure's long-term viability.

In fact, the various apparent variables led us to deem it appropriate to raise the following question: "What is the contribution of auditing to the management of loans in distress within SFDs in Mali?"

Based on this problematic, we formulated the following questions, which unpack all the elements to be studied in order to answer it properly:

At what level can we place responsibility for the phenomenon of non-payment within SFDs?

In other words, what are the main causes and consequences of unpaid debts at SFD level?

In this article, we first present the current state of the literature on internal audit and internal control, and the contribution of agency theory to the subject. Next, we set out the research methodology used to address our problem, a study of Moroccan banks to determine the extent to which internal audit contributes to the performance of decentralized financial systems. Finally, we presented the results obtained after administering a semi-directive interview guide.

## II. LITERATURE REVIEW

We have devoted this section to the conceptual framework to better define the concepts related to our research topic, present the impact of internal audit on internal control in the literature and finally the contribution of agency theory.

### 2.1. Definition of concepts

#### 2.1.1. Internal audit

The function of internal auditing is to provide assistance to the management of an organization. It has its origins in the accounting and financial control of companies, and has grown steadily to become a function with an abundant, if not richer, conception, which consists of responding to new requirements deemed to be increasingly complex, in this case; new management methods, intense competition, computerization of tools...etc.". (The Institute of Internal Auditors (IIA), 1999).

An official definition of the concept of "internal audit" was approved on March 21, 2000 by the Board of Directors of the Institut de l'Audit Interne (IFACI), following the translation of the above-mentioned definition adopted by the IIA in 1999. The definition is as follows: "The internal audit function is an activity carried out by its manager in an independent and objective manner, the purpose of which is to ensure the level of control of the company's operations, provide recommendations and contribute to the creation of value within the organization. The purpose of this function is to assess, using a methodical and systemic approach, the processes involved in risk management, internal control and corporate governance, and to provide advice on how to make them more effective".

#### 2.1.2. Internal control

Over the years, the notion of internal control has taken on a number of definitions, depending on the organization concerned. "Internal control rationally organizes the accounting department, with the aim of preventing or uncovering errors or fraud without delay". (B. Fain and V. Faure, 1948). Internal control is a set of safeguards contributing specifically to the control of company management. Its purpose is, on the one hand, to provide assurance in the protection of both assets and the quality of information, and on the other hand, to ensure the proper application of the instructions of the Board of Directors in order to maintain the entity's long-term viability". (Conseil de l'Ordre des Experts Comptables (COEC), 1977).

Internal control is a process based on a mass of methods and procedures adopted within the company to safeguard its assets, control accounting information to ensure its reliability, and promote the efficiency of operations carried out in compliance with policies predefined by management" (The American Institute of Certified Public Accountants (AICPA), 1990).

#### 2.1.3. Internal control system

The internal control system is a system consisting of an organization chart and a set of procedures adopted by an entity's management committee, the aim of which is to ensure the efficiency of all activities and the correct application of its policies, in this case to protect the company's assets, to detect and prevent as many errors and frauds as possible in the financial

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department, to ensure that the records produced by the accounting department are accurate and even exhaustive, and finally to prepare the so-called financial information in Zouhair ZARHLOUL & Sarra MRANI ZENTAR La contribution de l'audit interne dans la performance du système de contrôle interne : case of the Moroccan banking sector. 358 www.ijafame.org ensuring their reliability and timely availability". (International Federation of Accountants (IFAC), 1989).

### 2.1.4. Performance

In the field of management, performance has always been an ambiguous notion (Zineb Issor, 2017) rarely defined explicitly. The definition of this concept has been studied by a number of researchers since the 1980s (Bouquin, 1986; Bescos et al., 1993; Bourguignon, 1995; Lebas, 1995; Bessire, 1999...) and has recently been mobilized in management literature to assess the implementation of sustainable development strategies in companies (Capron and Quairel, 2005). This approach also promotes the notions of efficiency and effectiveness, which seem to be synonymous with performance, but are sometimes associated with results to be achieved. Consequently, the effectiveness of an internal control system can be assessed using efficiency and effectiveness indicators.

Effectiveness: is the ability to achieve a given result (Pigé, 2008). To be effective, an internal control system must be an important tool for improving a company's ability to achieve its objectives.

### 2.2. The impact of internal audit on the performance of the internal control system

The link between internal auditing and the ICS can be seen in the fact that a good internal audit can improve the efficiency and effectiveness of the ICS, whereas the absence of internal auditing can automatically deteriorate a good system and make it less effective, or even lead to its failure.

Yaich. M in 2010 states that the absence of internal auditing can, however, lead to ICS inefficiency, which can ultimately result in a deficient ICS. To better understand this, we can use an example to illustrate our point:

At the control level, procedures may be poorly executed because they are poorly designed; at the communication level, procedures may be poorly understood by the parties concerned; and at the control environment level, the importance of procedures may be poorly communicated.

Internal auditors play a key role in steering the ICS, as they are responsible for the ongoing assessment of the various elements of internal control. Internal audit must help the organization maintain an adequate ICS by assessing its effectiveness and efficiency, and encouraging continuous improvement (Ebondo Wa Mandzila, 2006).

An organization's ICS is designed to provide reasonable assurance that the organization's objectives are being achieved. Over time, this system may be affected by changes, e.g. changes in personnel, the introduction of new technologies...etc. The company should therefore update its ICS on the basis of recommendations and advice from the internal auditor, who is therefore responsible for identifying changes likely to affect the ICS, and helping staff to prepare for these changes by providing advice. As part of the fifth component of the internal control system, the chain of control itself includes the internal auditor. Effective internal auditing enhances the efficiency of the internal control system. In other words, the auditor must be convinced that the internal control system is on the right track to achieving the control objectives, i.e. that it is effective (COSO framework).

Schick.P & Lemant. O in 2001 distinguish the objectives of internal auditing by five areas of contribution:

Supporting and advising management: According to Larry Sawyer (the father of participative auditing), internal auditing should be a "problem-solving" partnership between management and the auditor. In other words, the internal auditor must persuade management to make the right decisions for the organization based on the results of his or her audit work.

Supporting change: Technological, economic and other environmental changes force organizations to evolve and adapt to their environment in a sustainable way. To this end, the internal auditor must help all employees to adapt to this new situation to ensure business continuity.

Promote the development of a control culture: Internal control involves all the company's employees. This is why the internal auditor must communicate this culture to all employees and encourage them to exercise restraint. Arguably, the internal auditor is the only person capable of instilling a sense of control within the company.

The auditor will identify areas for improvement: The aim is not to improve everything, but to ensure that the audited area is always in harmony with the external environment and is effectively fulfilling its mission.

Prevent difficulties that could endanger the company: The main objective of the internal auditor is to prevent threats to the company's activities in advance, by strengthening the internal control system.

### 2.3. Reasons for creating internal audit (agency theory)

In their book, Jensen and Meckling (1976) defined the firm as a contractual relationship (contract node) between management and stakeholders, but their analysis focused on the relationship between shareholders and management. It refers to the

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delegation of the owner's interests to a third party acting in the owner's interest, and is the subject of the same theory. The person who delegates decision-making power to another person is called the principal, while the person who acts on behalf of the principal is called the agent. From this perspective, a contractual relationship is established between the owner, called the principal, and the manager of the company, called the agent. The separation between "ownership" and "management and decision-making" can give rise to two problems:

### ✓ Divergent interests:

An executive often seeks personal advantages, and especially this search for advantage is amplified when he is geographically distant from shareholders, then, this position can provide opportunities for inappropriate behavior to the detriment of shareholders. These divergent interests can lead to conflict and cost the company dearly, and thus generate costs known as agency costs;

### ✓ Shareholder control difficulties concerning executives:

In this context, internal audit seems to be the best mechanism for controlling and monitoring the behavior of agents, in the interests of owners.

In recent years, agency theory has emphasized the importance of the internal audit function as a corporate governance mechanism for managing conflicts of interest between principals and agents resulting from information imbalances (information asymmetry).

The role of internal auditing in the company can be assessed at two levels: reducing information asymmetry and managing risk. At the first level, managers (agent) have more information about the company than shareholders (principal), who control the company. The existence of an audit committee gives confidence in the credibility of the information provided by the manager, as it acts as a mediator between the external auditor, the internal auditor and the board of directors. By linking the internal audit function to the audit committee, internal auditors can help reduce information asymmetries in corporate governance.

At another level of risk management, internal audit plays a key role in corporate risk management, notably in the preparation of internal control reports, which are mandatory for listed companies under the Financial Security Act. As such, the internal auditor must inform the management committee of any weaknesses in the ICS or any risks likely to affect the achievement of strategic, operational, regulatory or compliance objectives.

Based on agency theory, we know that internal audit plays a vital role in the company in general, and in internal control in particular, through the reduction of information asymmetry and risk management. We will therefore link ICS performance to these two elements, and in our discussion of the results obtained from the interviewees, we will explain this relationship brought about by agency theory.

### III. RESEARCH METHODOLOGY

The question of methodology naturally arises for the researcher, insofar as the scientific process aims to produce objective knowledge of the reality observed. Methodology is not set in stone, but methods come closer together according to the conventions that bind them. These conventions are known, which is why we call them epistemology. Epistemology is the knowledge of science. So, to answer or validate his founded or unfounded suppositions, the researcher can adopt methods specific to his subject. Similarly (Wacheux, 1996) has argued that "the researcher can construct his own methodology or freely opt to determine the one that suits his specific project to the theoretical and empirical object of research, it must meet his objectives and constraints" (Tounés).

Empirical methodology consists in linking the theoretical to the field. This requires a back-and-forth process to arrive at the goal, which is the application of data collection techniques. In empirical work, on the other hand, the researcher is faced with problems that have been solved by adopting a particular epistemological position. The choice depends on the researcher. We will therefore justify our epistemological positioning, as well as our choice of reasoning and methodological device.

Reflecting on the demands of science, it's very difficult at times to make statements about the scientific world. Supported by (Lecourt, 2003), who said "in order to anticipate what of the unknown is likely to be acquired to knowledge, scientific thought must tirelessly take the risk of questioning reality in terms of a possibility whose virtualities it solicits through thought and experimentation. And this questioning fervor is not satisfied with any given answer.

#### A. Epistemological paradigms and choice of epistemological posture

Epistemology is the study of science and knowledge. It studies the scientific validity of knowledge: "It questions what science is by discussing the nature, method and value of knowledge" (Seville & Perret, 2007). In management science, this translates into

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epistemological questioning of the foundations of management as a science. It raises questions about the nature of science, method and the value of knowledge. Research work is conceived in terms of methods, proposing results aimed at predicting, prescribing, understanding, constructing or explaining. At the outset of a research project, the stakeholder must engage in epistemological reflection to argue the legitimacy and relevance of his research, by asking the following questions:

What is the nature of the knowledge produced? Is it objective, reflecting a reality that exists independently of the researcher? Is it the researcher's interpretation of reality? Is it a construction of reality? This raises questions about the researcher's vision of the social world, the nature of the subject/object relationship, and the nature of the reality the researcher believes he can apprehend. How is scientific knowledge generated? Through a process of explanation? Of understanding? Of construction? This raises the question of the path of knowledge adopted.

What is the value and status of this knowledge? What are the criteria for validating the knowledge produced? The answers to these questions will lead us to the different paradigms known in management science: positivism, interpretativism and constructivism.

The positivist paradigm: if the researcher's aim is to discover laws that apply to actors. It is often presented as the dominant paradigm in organizational science, and claims a realist stance. It is characterized by two principles: ontology (reality is endowed with its own essence) and determinism (reality is subject to universal, immutable laws). In terms of methods, positivism is associated with hypothetico-deductiveness (laws are the result of tested and validated hypotheses) and objectivity (the observer's observation of the real object modifies neither the object nor the observer). Although criticized in Europe, this behaviourist trend is dominant in North America, and has produced important results and opened up new theoretical and empirical avenues. The contributions of institutional and incentive economics, evolutionism and resource economics illustrate some of the recent contributions of this current. The project of positivism is to explain reality, in order to (Madhar, 2016).

The interpretativism paradigm: if the aim is to explain the meaning given by actors to their actions. Interpretativism postulates that the world is made up of interpretations, and that these are constructed through interactions between individuals (Perret & Grod-Seville, 2002). The search for objectivity through method is not enough to understand a situation. According to (Gadamer, 1996), "The entry into play of free decisions, if any, does not interrupt the regularity of the unfolding; on the contrary, it takes its place within the generality and regularity that induction makes possible". Nevertheless, he points out that "any just interpretation must guard against the arbitrariness of ideas of encounters and against the narrowness that derives from imperceptible habits of thought" (p. 287). To interpret is to produce theoretical-empirical diagnoses of situations (Claveau & Tannery, 2002). For constructivism, it's essentially a matter of constructing it (Thiétart & Coll).

The constructivist paradigm: explaining how action is constructed and/or inventing new solutions. The development of knowledge from other knowledge through preconceived ideas. Constructivism is an epistemological position based on the relativity of the notion of truth or reality. Reality is defined by the representation of a subject's experience of reality. As (Morin, 1990) remarks, "subject and object are inseparable, but our way of thinking excludes one through the other". This is the "dialogical" principle, the maintenance of duality within unity. Constructivism is based on subject-object interaction, with research "no longer defined by its object, but by its project" (Moigne, 1995). Constructivist hypotheses are often expressed in methodological terms through the principle of induction (Charreire & Huault, 2002), which consists in bringing together a series of specific observations to arrive at a general conclusion. In summary, we can group the 3 paradigms:

Positivism; Interpretativism and Constructivism.

Epistemological questions

What is the status of knowledge?

Realist hypothesis: the object of knowledge has its own essence

Relativist hypothesis: the essence of the object cannot be attained (moderate constructivism or interpretativism) or does not exist (radical constructivism).

The nature of "reality"

Independence of subject and object

Deterministic hypothesis The world is made up of necessities

Dependence of subject and object

Intentionalist hypotheses

The world is made up of possibilities

How is knowledge generated?

The path to scientific knowledge Discovery

Research formulated in terms of "for what causes"?

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Privileged status of expression

Interpretation

Research formulated in terms of "what motivates the actors"?

Privileged status of understanding

Construction Research formulated in terms of "for what purposes...".

Privileged status of construction.

What is the value of knowledge?

validity criteria

Verifiability

Confirmability

Refutability

Idiography

Empathy "revealing the experience lived by the actors".

Suitability

Teachability

### B. The nature of knowledge in different paradigms

The production of any knowledge or new knowledge will always depend on how we perceive or imagine (apprehend) those we are interested in producing. This is the theme of the activity or behavior of a group of living beings or thoughts. It depends on the nature of the subject/object relationship and the nature of the social world. The following paradigms are then derived from the nature of knowledge. They are summarized in the table below.

According to (Marchesneay, 2005), management science knowledge is structured according to 3 contributions:

- ✓ A descriptive contribution (of practices and techniques) - the question of relevance;
- ✓ A contribution in terms of explanation with regard to a diversity of models and theories - question of rigor;
- ✓ A contribution in terms of prescription, if we consider that management sciences belong to the action sciences - the question of impact.
- ✓ In turn, (Lukka & Granlund, 2002) propose to classify the ways in which this actionable knowledge is conceptualized with reference to three research orientations:
- ✓ Consulting research (strong focus on practices, empirical evidence built on case studies and a prescriptive vocation with an emphasis on impact);
- ✓ Basic research (ex-post analysis, quantitative approaches with an explanatory vocation and an emphasis on rigor);
- ✓ And critical research (a mix of the other two, with empirical evidence based on more qualitative, comprehensive studies, with the emphasis on relevance).

Quantitative approaches are characterized by their narrow focus, while qualitative approaches are characterized by their broader, and therefore fuzzier but more comprehensible, focus, neither of which can dispense with rigor (Presqueux & Martinet, 2013).

## IV. THE PATH TO KNOWLEDGE ACCORDING TO PARADIGM

The positivist is largely guided by the idea that "knowable reality has a meaning in itself, and that this meaning does not necessarily depend on the personal preferences of the observers who strive to record it in the form of determinations (be they laws, principles, causes, conjectures or theories)" (Le Moigne, 1995). Analytical and positivist research prefers to confine itself to the realized, since it is given, and fragmentable, and from which it believes it can draw regularities, if not laws. At best, it ventures into the realm of potential through extrapolation or trend extension procedures. Constructivism and interpretativism support the same approaches, but the respective difference is that the former involves understanding the meaning that actors give to reality. In the second, the process of understanding is involved in constructing the reality of the actors studied.

### 4.1. Different criteria for knowledge validity

Criteria of validity vary according to the paradigm in question. They depend on the way in which each paradigm answers the question of the scientificity of knowledge.

- ✓ Positivist posture: scientific and non-scientific knowledge are clearly identified through the application of precise, universal validity criteria.

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- ✓ Constructivist stance: all truths are called into question (scientific, non-scientific and definitions of precise, universal criteria). Constructivism proposes an approach to knowledge in terms of ethical validity, i.e., based on criteria and methods that are open to discussion. These are new models to be validated. Validation involves checking, confirming and refuting knowledge.

According to Karl Popper, refutability means never asserting that a theory is true, but instead asserting that a theory is not true.

- ✓ For constructivism, the criteria for validity are still under discussion.
- ✓ Interpretativist position: from the same direction as the constructivist, this position questions the positivist position (deductive logic and the nature of validity criteria). For them, the criteria of validity are, on the one hand, the character of research and, on the other, the researcher's capacity for empathy.

The authors presented the criterion of adequacy (or suitability) proposed by (Glaserfeld, 1988), and the criterion of Teachability defended by (Le Moigne, 1995). The statement of these criteria does not lead constructivists to impose a single method of knowledge, but enables them to accept and defend a plurality of methods: deductive, analogical, metaphorical....

To respect these criteria, the only method recognized by positivism is that which respects deductive logic as the only logic that provides an objective reproduction of reality, as opposed to inductive logic, which allows us to move from particular observations to general statements.

### 4.2. Choosing the positivist posture

In the light of our discussion of the various paradigms, we adopt the mainstream positivist posture for our research work. For the positivist position serves to "discover the simple reasons by which observed facts are related to the causes that explain them" (Lapalle, 2012). It involves "putting forward hypotheses that are then tested against the facts" (Rivière, 2009).

In reference to Popper's quotation, the development of theory then comes from the surpassing it allows in relation to the facts from which it originates. An overview of all the research carried out on the mechanisms of governance, have all led to a supposedly positive acceptable result. In our case, however, it's the CG in the governance of industrial companies. Wirtz (2000, p.173) proposed the Positive Agency Theory (PAT), based on the methodological questions raised by Jensen (1983). The latter considers knowledge production to be a sequential and dynamic process. It is interesting to note that empirical reviews (Jensen, Murphy, Hall, Liebman, Lacker...), particularly in the same context of management control and governance, have had a positive impact on the contribution of mechanisms to governance.

It should be added that the researcher's epistemological posture, as a form of reflexivity, is a necessary step, as it helps to establish the validity and legitimacy of research. As our aim in this research is more to verify and explain than to explore and understand, we have placed our research within a positivist paradigm. This paradigm refers to a philosophical system emanating from the body of positive sciences, of which Auguste Comte is the founder. This philosopher particularly uses this expression in opposition to theological philosophy and metaphysical philosophy (Velmuradova, 2017). Positivism characterizes an epistemological attitude linked to the practice of various scientific methods that are both rational and experimental. Positivists admit, however, that reaching the truth and holding a perfect reflection of reality proves utopian and therefore propose to be content with noting that it is necessary to resort to scientific knowledge emphasizing experiments to verify the validity of any research. This constitutes the criteria of positivist scientificity, namely verifiability, confirmability and refutability (Velmuradova, 2017). The main assertions of epistemological positivism can be summed up in the need to stick to facts only as they are stated. By (Grégory, 2000), a positivist paradigm, proceeds to mechanical or biological metaphors. They use a systemic approach that (Bouquin, 1997) describes as "facade", because it is limited to fixed relationships. The metaphor of natural systems serves only as an alibi. In this way, deterministic research coexists with research that only recognizes individuals and assumes that they behave rationally, in search of the optimum. These authors have discovered the link between strategy and structure, but also the problems of technology or environmental uncertainty. Another form of contextual determinism was culture, under the influence of sociologists ( Ouchi, 1982); (Hofstede, 1978); (Iribane, 1989)). Then, more formalized frameworks imported from transaction cost economics (Ouchi, 1979) and agency theory (Baima, 1990) explained control systems by the search for efficiency at minimum cost, with the content and measurement of this notion of cost constituting the core of the problem.

We have chosen positivist epistemology because, from our perspective as researchers, it is difficult to access knowledge without resorting to scientific approaches by adopting a well-founded and rigorous method, more specifically that evidence such as statistical studies is needed to understand whether the research hypothesis proves to be correct or false. So, thanks to our choice of this epistemological posture, we can say that our choice of methodological approach will be based on a predominantly quantitative approach. Epistemological debates concerning the development of scientific knowledge require researchers to be

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able to choose the most appropriate methodological approach, depending on the research problem identified and in the light of the epistemological and theoretical foundations underpinning the approach.

From a post-positivist perspective, once the researcher has defined his or her research object, he or she must specify the approach chosen according to the objectives he or she has set (explore, verify, master, etc.). Two classic approaches can be used, depending on the nature of these objectives: induction and deduction. However, pure induction is not considered acceptable in the canons of science (Chalmers, 1982-1987). Depending on the uniqueness or plurality of the objectives pursued and the phase of the process, induction and deduction may alternate (Evrard, Pras, & Roux, 1997). The post-positivist approach considers that reality has an essence of its own. When researchers adopt this posture, they have a truth criterion at their disposal: a theory or model that effectively describes reality is "true". From this perspective, the object of research is essentially an interrogation of facts. The researcher elaborates the object of his research on the basis of inconsistencies between theories and facts, the identification of inadequacies and theoretical inconsistencies that reflect reality. Because the individual's social identity was insufficiently represented by the self or internalization of individual identity, (Zouaghi & Darpy, 2006) propose the concept of "We", which is designed to capture the internalization of individual psyches within the family group.

This reliance on the interactivity of management control tools is justified by the fact that researchers strongly believe in a strong positive correlation between management control systems and company performance. However, no firm conclusion has been reached on the nature of this relationship. The role played by management control in corporate governance has not been fully addressed, nor, to the best of our knowledge, has it been in Mali's industrial companies. As a result, we had the idea of developing a reflection on our dissertation topic. To study the role of management control in governance is to develop, on the basis of these analyses, a tool for the role of management control (the dashboard) in the strategic process and on performance.

"At the risk of oversimplification, the ideal process is to use the definitions of agency, the tautology of cost minimization... and a subset of actual contractual structures to develop propositions about important aspects of the control and implementation environment and technology-in other words, to derive a theory that is consistent with these contracts. If successful, this effort provides a framework that can be manipulated to produce additional positive non-obvious propositions, i.e. hypotheses. The confrontation of these propositions with previously unused or unknown data constitutes a test of the theory. If these data do not substantially agree with the predictions, then the theory is revised or replaced by an alternative, and the process thus continues the scientific process". Management control is a mechanism for improving the governance of large industrial companies. In its mission, it deploys tools, in empirical verifications, the proper implementation of these tools have always parried the difficulties that managers avoided in achieving their objectives.

## V. CONCLUSIONS

In conclusion, we have been able to report answers to our research problem, and especially the first research question relating to the contribution of internal audit to ICS effectiveness. In our theoretical framework, we have mobilized agency theory, which in turn explains the reasons for the creation of the internal audit function in companies. It also assumes that internal audit plays a key role in corporate risk management, particularly in the preparation of internal control reports. Schick.P & Lemant. O in their work in 2001 distinguish the objectives of internal auditing into five areas, including risk prevention and the establishment of a control culture within the organization. The first type of auditor confirms this contribution, believing that internal auditing is an important function for the company, since it plays a part in promoting a control culture among staff and preventing difficulties that could have a negative impact on the company. We also drew on the work of Anglade & P.B. Janichon, who state that internal control is considered effective if it meets the criteria for each of the three categories of objectives: operational, financial and compliance. The second type of auditor emphasizes the importance of respecting the components of internal control, especially risk management, which confirms the contribution of agency theory to the subject. The manager stipulated that internal control is said to be effective when senior management and the board reasonably realize that the bank is achieving its operational, reporting and compliance objectives, which confirms the contribution of Anglade & P.B. Janichon's work in 2002.

Broadly speaking, it is worth recalling the main lines of our research and their impact on the reality of banking. To achieve its objectives, a bank needs to control its operations and internal mechanisms. This in turn requires the foundation of a high-performance internal control system, i.e. one that is both effective and efficient. The bank, like any other organization, lives in uncertainty. Although it acquires a wealth of knowledge and maneuvers acquired throughout its immersion in its environment, it is always subject to the unforeseen and to change. The application of new communication and information technologies, the adaptation of strategic decisions and planned objectives in line with changes in the environment, the ever-changing economic situation, social and political issues - these are all elements of uncertainty that can at any moment call into question internal control, which is prone to precariousness. With this in mind, internal auditors need to be alert and reactive, adapting their tools

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to the changing environment. It goes without saying that the establishment of a robust and flexible internal control system serves to maintain and improve the entity's performance. Thus, we can say that the performance of the internal control system relies essentially on a well-founded internal audit function. In order to ensure a successful internal control system, internal auditing must transcend the examination of procedures and their compliance, and expand into other areas. The auditor will be able not only to challenge the existing system, but also to recommend ways of improving the company's strategy. Internal auditors are also increasingly called upon to act as consultants. This will make him or her a true internal consultant who favors a participative approach.

The internal control system is subject to limitations due to a number of factors, which means that internal auditors are obliged to remedy these limitations while identifying shortcomings in its design or implementation. Internal control is said to be effective when it achieves its objectives. Consequently, the internal auditor must ensure that the bank's operations are under control, by evaluating evidence and communicating it to those in charge. We're talking about the collaboration of all bodies - auditors, management and other staff - to establish the best working conditions for everyone: it's a whole chain of control, robust and coherent. Interviews show that internal auditors seem to focus on the effectiveness of ICS, provided that the internal audit function is well established and functions properly. In particular, there is a lack of support from management, internal auditors do not always receive the support they need in terms of information and communication, support to management is nuanced and the place of internal audit is therefore relatively marginalized in overall management. It should be remembered that the strength of the internal audit function depends on the integration and involvement of management. As with any study, our research had certain limitations, which can be summarized as follows; the first limitation was the size of the sample, which we felt was limited due to the health crisis, resulting in the unavailability of managers to properly conduct our interviews, and the second limitation related to the training of the participating auditors, who proved to be insufficiently trained in internal control, making it difficult to gather information. Our research prospects can be summed up in two points: the first is to conduct this subject as part of a quantitative study, so as to be able to understand the different variables in their entirety. The second is to deepen our research in the area of internal control, given the lack of existing information in the field.

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## Leadership of the School Principle in Fulfilling Facilities and Infrastructure Standards in Islamic Elementary Schools



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**ABSTRACT:** Educational institutions as executors of the educational process certainly have leadership that can manage everything well. To support an effective and efficient learning process, educational institutions or schools must have adequate and supportive facilities, one of which is facilities and infrastructure. This study aims to determine the leadership of the madrasa head in fulfilling the standard of facilities and infrastructure at MIN 1 Purbalingga. The method used in this research is qualitative research with a descriptive approach. In this study, the head of the madrasa was used as the key informant, Deputy Head of Facilities and Infrastructure as the first informant, and administrative staff as the second informant. This study used interview, observation, and documentation techniques in collecting data. The results of the study show that the leadership of the madrasa head is the most important figure in determining the progress or success of the school, one of which is in meeting the standards of facilities and infrastructure. The standard of facilities and infrastructure is a benchmark to support the success of the teaching and learning process in schools, facilities and infrastructure that are not in accordance with existing standards will result in the comfort of students and teachers in the teaching and learning process. The role of the madrasah head in the standards of facilities and infrastructure, starting from the process of planning, procurement, use, maintenance, supervision and inventory. The existing facilities and infrastructure at MIN 1 Purbalingga are said to be up to standard but there are still deficiencies, namely the limited area of school land in the form of fields/playgrounds and student prayer rooms so they cannot run optimally.

**KEYWORDS:** Leadership, Headmaster, facilities and infrastructure

### INTRODUCTION

Education is one aspect that is very important and cannot be eliminated because education is the main spear for human life. With the existence of human education can increase knowledge, creativity and abilities that can grow and develop through teaching provided by educators. In this way, education becomes a supporting factor for overcoming various problems both within the family, society, nation and state so that humans have a better life.

Educational institutions as executors of the educational process certainly have leadership that can manage everything well. Leadership is the effort of a leader to be able to realize goals both individually and organizationally so that leaders are needed who can influence, support and provide motivation so that their followers want to carry it out enthusiastically for the desired goals. (Sutarto Wijono, 2018: 4)

In managing school institutions, leaders have a very large role, namely as a center for determining policy directions towards the progress of a school and education in general. The leader in a school is the principal who plays a role in raising the quality of education. As stated in government regulation number 28 of 1990 article 12 paragraph 1 that: "the principal is responsible for organizing educational activities, school administration, training of other educational staff and utilization and maintenance of facilities and infrastructure. So that in managing schools, the principal has a very large role, the principal is the driving force that determines the direction of policy towards the success of the school and education in general (Djafri, 2017: 3).

Leaders are required to be able to manage professionally, therefore professional leadership can understand what is needed by schools and can produce quality graduates. Quality graduates are not only obtained from a good teaching and learning process but also from adequate facilities and infrastructure and are needed by the entire school community.

As stated in law number 20 of 2003 concerning the national education system, it states that each formal and non-formal education unit provides facilities and infrastructure that meet educational needs in accordance with the growth and development of the physical, intellectual, social, emotional and psychological potential of students. and provisions regarding the provision of educational facilities and infrastructure in all educational units (UU No. 20, 2003).

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To support an effective and efficient learning process, educational institutions or schools must have adequate and supportive facilities. One of them is the facilities and infrastructure. Educational facilities are equipment, accessories, materials and furnishings. Directly used as a support for the teaching and learning process both mobile and not so that it can achieve educational goals and run smoothly, orderly, effectively and efficiently such as: buildings, classrooms, desks and chairs as well as teaching media tools, libraries, school offices, places parking and laboratory space. The educational infrastructure is a facility that indirectly supports the course of the learning or teaching process such as: courtyards, gardens or school gardens, roads leading to schools, school rules and so on. The same as in government regulation No. 15 of 2005 concerning National Education Standards concerning national standards of facilities and infrastructure.

Educational institutions or schools that have facilities and infrastructure must also have facilities and infrastructure management. A planning activity must have management so that a plan is more organized and controlled in implementation and supervision so that the activity will be realized smoothly. With the management can be evaluated whether an activity is running well or not. That way the facilities and infrastructure must have good management so that what is implemented goes according to the rules. That way the management of facilities and infrastructure itself as a system of equipment and utilization indirectly as the course of the education system to achieve educational goals effectively and efficiently. Facilities and infrastructure in schools need to be managed properly for the common good in the learning process at school (Indrawan, 2015: 9-10).

In simple terms management as the activity of carrying out an organization to achieve predetermined goals. In terms of management as a systemic and systematic activity carried out by a manager to direct a group of people in achieving organizational goals with the capabilities they have. Management is a component that is interrelated and cooperates with one another in achieving organizational goals. Meanwhile, it is said to be a systematic activity because in management various activities are carried out according to predetermined rules (Wiyani, 2018).

Educational facilities and infrastructure are important equipment in education and as one of the eight national education standards. So that every education seeks to meet the standards of educational facilities and infrastructure in raising the quality of the learning system. The completeness of educational facilities and infrastructure is a special attraction for prospective students (Barnawi and Arifin, 2012: 7).

Completeness of school equipment to support educators in implementing the learning system. Sanjaya (2006) states that the completeness of facilities and infrastructure certainly has several benefits including the completeness of facilities and infrastructure can foster the enthusiasm and aspirations of educators in teaching and can encourage students in a more effective learning process. Complete facilities and infrastructure can provide convenience in each learning process for more varied students (Tanjung, et.al, 2006).

Standardization of facilities and infrastructure can be interpreted as adjusting the shape of specifications, quality, as well as school facilities and infrastructure with predetermined criteria to realize transparency and public accountability and improve the performance of school/madrasah administration. In detail, the standards for elementary school/Madrasah Ibtidaiyah education facilities and infrastructure can be seen in the Regulation of the Minister of National Education of the Republic of Indonesia No. 24 of 2007 concerning Standards of Facilities and Infrastructure for Elementary Schools/Madrasah Ibtidaiyah (SD/MI) (Barnawi and Arifin. 2012) .

That way every educational institution must cover all things. One of them is the Madrasah Ibtidaiyah Negeri 1 Purbalingga which is located in Krangean village, Kertanegara sub-district, Purbalingga Regency which is headed by Mrs. Siti Khoniah Mujiati. The standard of facilities and infrastructure at MI Negeri 1 Purbalingga has been said to be in accordance with standards such as buildings, classrooms, leadership rooms, office rooms, libraries, computer labs, UKS, student and teacher toilets, textbooks, sports equipment, LCD and 28 units of laptops but there is still a shortage of fields or playgrounds and student prayer rooms so that students cannot run optimally. Management of existing facilities and infrastructure at MI Negeri 1 Purbalingga starting from planning what is needed procurement, storage, maintenance, inventory and removal as well as land arrangement, buildings, school equipment and furniture appropriately.

### **METHOD**

This research uses a qualitative approach with a qualitative descriptive type. This research was conducted at one of the educational institutions in Purbalingga Regency, precisely at Madrasah Ibtidaiyah Negeri 1 Purbalingga which is located on Jl. Raya Krangean RT 01/1, Kertanegara District, Purbalingga Regency. Data collection in this study used three methods, namely observation, interviews and documentation. There are three data validation techniques, namely source triangulation, technical triangulation and time triangulation. Technique. Data analysis was performed using the Miles and Huberman (1984) interactive analysis model: data reduction, data display and clarification/conclusion.

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## RESULT AND DISCUSSION

Principal leadership has a very important role in determining the progress and success of madrasas. Therefore, the madrasa head must have a clear mission and vision and goals, have effective and efficient steps or strategies to achieve the goals that have been set together. Successful school principal leadership understands the existence of a school as a complex organization, and is able to carry out the roles and responsibilities of leading the school.

A leader is someone who has a program and who behaves together with group members by using a certain way or style, so that leadership has a role as a dynamic force that drives, motivates and coordinates the company in achieving the goals that have been set. Leadership style is the way a leader carries out his leadership function or carries out his management function in leading his subordinates.

So that the leadership style that is applied in the decision-making mechanism for the head of MI Negeri 1 Purbalingga which is related to meeting the standards of facilities and infrastructure uses a democratic leadership style because it is undeniable that a madrasah head must be able to consider all possibilities in making decisions related to madrasas and be fully responsible for the implementation of these decisions. , whether the decision was agreed upon by deliberation or by the head of the madrasah himself.

The duties and functions of the headmaster MI Negeri 1 Purbalingga in fulfilling the standard of facilities and infrastructure must be in line with the competencies and qualifications he has so that the principal is able to overcome various problems and answer the future challenges of education faced by madrasas, especially obstacles or challenges in the development of facilities and infrastructure. infrastructure.

### The role of the madrasah head of meeting the standards of facilities and infrastructure at MI Negeri 1 Purbalingga

#### a. Process of planning facilities and infrastructure

- a. planning educational facilities and infrastructure is used to compile a planning program that requires preparation, careful and thorough planning so that the program can run smoothly in accordance with the expectations of all parties involved directly or indirectly so that educational facilities and infrastructure are fulfilled in supporting education in school.
- b. Planning is the initial stage for designing something that has been agreed upon by the school in carrying out planning activities. Planning for facilities and infrastructure must be realistic in accordance with the reality of the budget and needs in supporting student achievement. In this case the planning of facilities and infrastructure in schools who are most responsible for the management of facilities and infrastructure is the deputy head of the school in the field of facilities and infrastructure.
- c. The planning process at MIN 1 Purbalingga Madrasa Head always involves the Wapsek in the field of facilities and infrastructure as the person in charge of operations, Administration in the field of Infrastructure Funds as the executor, and the Teacher in preparing plans for needs related to facilities and infrastructure that need to be made, repaired, added, or maintained to support the quality of learning in Madrasas.
- d. The needs of students at MIN 1 Purbalingga are not solely in terms of satisfaction in conveying the theory carried out by the class teacher using good learning facilities but also students also need an aspect called comfort in the learning process. This makes schools aware of the importance of properly implementing school facilities and infrastructure standards so that everything in schools regarding facilities and infrastructure can run more effectively and efficiently. For planning, look at the needs in madrasas, for example buildings, because every year the number of students continues to grow, so every year we make programs or plans related to buildings. Regarding infrastructure, we also schedule or include the madrasah budget or APBN, in this case, to the DIPA of the Purbalingga district ministry of religion, we enter the Regional Secretariat of the Purbalingga district ministry. So later we will arrange the budget after that and then we will submit it to the ministry of religion, then we will realize it next year.

#### b. Procurement process of facilities and infrastructure

Procurement of facilities and infrastructure is an important follow-up step that must be carried out after carrying out the planning process as a reference for the next steps. The process of procuring facilities and infrastructure is a challenging stage to carry out because what is already in the planning stage must work according to the provisions of the need. Procurement is carried out as a form of realization of plans that have been implemented previously. The goal is to help ensure that the educational process is carried out effectively and efficiently in accordance with the desired goals.

For the procurement process at MI Negeri 1 Purbalingga, the needs are enormous, while the available funds or budget sources are only from the school operational assistance fund (BOS), while the budget requirements from the school operational assistance fund (BOS) cover all operational needs in madrasas, not only for facilities and infrastructure. Funds for Sarpras itself are around

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50% - 60% due to budget constraints, we usually plan it by realizing a priority scale system, meaning which facilities and infrastructure are needed first, we prioritize them to be realized immediately.

Regarding the obstacles in procurement, namely the first is related to the needs of the madrasa, we currently have 3 buildings, namely the central building, the building on the west and south side, the maintenance automatically requires a large budget, while the available budget from the RAPBM is not comparable, as a result, sometimes the plans that have been programmed for maintenance, repair or the building sometimes stretches due to budget constraints. In the end, we choose a priority scale for the needs that are damaged, we prioritize first. The second is related to maintenance, in our madrasah actually every year related to our facilities and infrastructure we still have procurement of purchases but sometimes these treatments are of a continuous system or use only from time to time so the maintenance is not optimal as a result sometimes because it is not maintained it becomes damaged etc. So actually we need special staff to take care of these various facilities and infrastructure.

### **c. The process of using facilities and infrastructure**

In the use of educational facilities and infrastructure, there are two principles that must be considered, namely the principle of effectiveness and efficiency. With the principle of effectiveness, it means that all educational equipment in schools must be appointed solely in order to facilitate the achievement of school education goals, either directly or indirectly. Meanwhile, the principle of efficiency means the use of all educational equipment in schools sparingly and carefully so that all existing educational equipment does not run out easily. Broken, or lost.

In order to fulfill the two principles mentioned above, there are at least three main activities that need to be carried out by school personnel who will use educational equipment at school. Among others:

- a) Understand the instructions for using school supplies
- b) Arrange educational equipment
- c) Maintain both continuously and periodically all achievement equipment.

In the teaching and learning process the use of facilities and infrastructure at MIN 1 Purbalingga is very supportive because many teaching and learning activities cannot be separated from facilities and infrastructure. Of course, things that support learning activities must also adjust to the conditions of existing facilities and infrastructure. Utilization of existing facilities and infrastructure must also be used as fully and effectively as possible in teaching and learning activities by teachers and students.

Teachers and students at Min 1 Purbalingga take advantage of existing facilities and infrastructure because they support student learning, to make students understand learning. As a teacher, you must also pay attention to the effectiveness and efficiency of using existing infrastructure.

### **d. Maintenance process of facilities and infrastructure**

Maintenance is an effort or activity process to maintain the technical conditions, usability and efficiency of a working facility and infrastructure by maintaining, rehabilitating and perfecting it so that the facility and infrastructure can last longer in use.

In the maintenance process carried out on these facilities and infrastructure it greatly influences the process of learning activities. Where the learning process will run smoothly when the facilities and infrastructure owned are properly and properly maintained, these two elements are closely related to each other between good facilities and infrastructure that will help in the learning process at school.

Maintenance activities for MIN 1 Purbalingga equipment are carried out every day and periodically so that the items are always in good condition and ready to use. If these items need regular maintenance, for example the cleanliness of mosques and rooms, they will be cared for every day, but if these items can be maintained regularly, for example, painting buildings, they can be done regularly.

### **e. Monitoring process of facilities and infrastructure**

Supervision of educational facilities and infrastructure is carried out to optimize the use of educational facilities and infrastructure in order to avoid irregularities, embezzlement or misuse and to authorize that the implementation of the program is in accordance with the stated objectives. In the process of supervising facilities and infrastructure in schools is the most important thing in maintaining facilities and infrastructure so that they are well maintained.

At MIN 1 Purbalingga, of course, it participates in supervising educational activities related to the use of school facilities and infrastructure and implements a direct communication system where the school principal recommends that every school personnel, both teachers and employees, always try to report the condition of the educational facilities and infrastructure owned by the school.

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### f. Inventory process of facilities and infrastructure

At MIN 1 Purbalingga, every procurement of infrastructure is automatic, especially for goods that are included in capital expenditures, usually these goods are not consumable, meaning that the goods can last for at least 1 period or 5 years. Usually the goods directly enter the inventory at BMN (State Property). So every year we routinely. The backup is at the office of the ministry of religion because there is someone who handles the BMN, so state-owned goods procured through BOS funds are usually included in BMN.

### Standard condition of facilities and infrastructure at MI Negeri 1 Purbalingga

Standardization of facilities and infrastructure can be interpreted as adjusting the shape of specifications, quality, as well as school facilities and infrastructure with the minimum criteria that have been set to realize transparency and public accountability and improve the performance of school/madrasah administration. In detail, the standard of educational facilities and infrastructure for Elementary Schools/Madrasah Ibtidaiyah can be seen in the Regulation of the Minister of National Education of the Republic of Indonesia No. 24 of 2007 concerning standard of facilities and infrastructure for Elementary Schools/Madrasah Ibtidaiyah (SD/MI).

The standard of facilities and infrastructure is a benchmark to support the success of the teaching and learning process in schools, facilities and infrastructure that are not in accordance with existing standards will result in the comfort of students and teachers in the teaching and learning process. Because the standard of facilities and infrastructure is one of the eight school standards that must be met to support learning in schools.

Regarding the standards of educational facilities and infrastructure set by the government, they are very good. With the existence of standard facilities and infrastructure, it can align school infrastructure facilities according to existing needs. This standard is used as a guideline for schools to maintain the quality of the school concerned.

MIN 1 Purbalingga almost meets the standardization made by government policy, only the lack of a playing field and student prayer room which causes a lack of comfort or space for students to move, therefore the school needs careful planning in its implementation, especially in terms of facilities and infrastructure so that the goals of school education can be achieved.

### CONCLUSION

Each madrasa head must have a different leadership style in developing facilities and infrastructure to improve the quality of learning. The head of MI Negeri 1 Purbalingga in fulfilling the standard of facilities and infrastructure uses a democratic leadership style because it is undeniable that a madrasah head must be able to consider all possibilities in making decisions related to madrasas and be fully responsible for the implementation of the decision, whether the decision is agreed by deliberation or by the head. madrasa itself.

The duties and responsibilities of the madrasa head are not only towards programs and decisions but the madrasa head also has a role and responsibility for educational facilities and infrastructure that are used as a supporting tool in a learning activity. The duties and responsibilities that exist at MI Negeri 1 Purbalingga can be said to be good in fulfilling the standard of facilities and infrastructure. Head

Madrasas in fulfilling the standards of facilities and infrastructure work together with the deputy head of the madrasa in the field of infrastructure. And carry out various stages such as planning, procurement, use, maintenance, supervision and inventory. So that the facilities and infrastructure needed by schools can be realized properly to achieve goals.

Fulfillment of facility and infrastructure standards has a significant impact on teaching and learning activities at MI Negeri 1 Purbalingga. There are several things that have not met the standards, namely playing fields, places of worship as set by the government. This can be seen from the research results which are adjusted to the standards imposed by the government through Permendiknas Number 40 of 2008 concerning Standards for SD/MI Facilities and Infrastructure.

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## Basic Characteristics of Educators in Educating Children According to Islam



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**ABSTRACT:** The basic idea of this writing is from Abdullah Nasih Ulwan's view of "Basic Characteristics of Educators in Educating Children According to Islam." Abdullah Nasih Ulwan's views are based on the basic principles of education in Islam. The purpose of this writing is to find out the basic characteristics that must be possessed by educators in educating their students. Education is the main factor for social change. To form noble character, education is needed as a foundation in life so that it is directed in achieving life goals. An important factor that is very concerned about in Islam is the education of children, because the progress of a nation depends on how the nation educates its students. The basic qualities that must be possessed by the first educators are sincerity, piety, knowledge, patience, and a sense of responsibility. The greater the efforts of an educator in carrying out his responsibilities, the greater the fruit of his education.

**KEYWORDS:** Sincerity, Piety, Knowledge, Patience, Responsibility

### A. INTRODUCTION

Based on current developments in science and technology, education is the basis that shapes children's character. Education is the main factor for social change. To form noble character, education is needed as a foundation in life so that it is directed in achieving life goals. To achieve all of this requires a process that is not easy through parenting and education. Formal and informal education is one of the goals for maturing children. The behavior of an educator or parent greatly influences a child's behavior. In general, children will not behave well if their educators or parents behave badly. It is appropriate for educators or parents to carry out education with different nuances. In (HR. Muslim) explains that people who neglect people who are cared for will get sin.

A good educator always wants his students to have a noble personality, strong in faith, physically, mentally and socially. An important factor that is very concerned about in Islam is the education of children, because the progress of a nation depends on how the nation educates its students. The word of Allah SWT in the surah (ar-Rum: 4-5), the contents of the verse informing those who believe, Allah SWT will help whomever He wills, because Allah is Mighty, Most Merciful.

In general, an educator must have basic characteristics, including: sincerity, piety, knowledge, patience, and a sense of responsibility. Educational tasks such as orders and prohibitions, rewards and punishments, advice and attention, which are included in the didactic-methodical, pedagogical, and psychological aspects. For this reason, an educator must know the rules in educating so as to be able to shape the character of his students well. Children's education is an effort made by adults in developing, maintaining, and maintaining children's intelligence and morals to develop and become better. (Dede Darisman, 2014).

### B. LITERATURE REVIEW

#### 1. Sincerity

Ikhlas according to language means clean, holy, and protected from anything so that it is not dirty, meaning that those who are sincere in carrying out a worship, are clean from interests other than the pleasure of Allah SWT (Semiotika et al., 2022). To carry out these obligations, of course, parents must pay attention to things that can affect the physical and psychological growth and development of children. (April & Hamid, 2022). Being sincere and accepting the decree of Allah SWT is not easy, but we must accept gracefully the destiny given by Allah SWT. (Fandholi, 2016)

The Word of Allah SWT in the Surah (al-Kahf: 110), The contents of the verse are Anyone who wants to meet His Lord, he must do good deeds and may not associate partners with Allah SWT. When we do charity we should not hope for humans, but we hope



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only for Allah SWT.

### 2. Piety

Piety is the sure result and the natural fruit of a deep feeling of faith, connected with the supervision of Allah SWT, always remembering Him, fearing His wrath and punishment, and desperately hoping for His forgiveness and reward. In syar'i (religion) language, piety keeps oneself from everything that Allah SWT has forbidden, and carries out everything that He commands. (Mu'in, 2017). Waqa-wiqayah is the root word of piety which means to maintain and guard. (Saichon, 2017). In Surah (Ali Imran: 102), Allah SWT orders believers to fear Allah SWT truthfully and may not die but die in a state of being a Muslim. And in the sura (ath-Thalaaq: 2-3), it explains that anyone who fears Allah SWT, Allah SWT will provide a way out and provide unexpected sustenance.

### 3. Science

Knowledgeable, namely having knowledge or intelligence (Rizki et al., n.d.). The poet said: Do not take knowledge other than experts, with knowledge we live, and with our souls we save. According to scholars, knowledge is a steady belief in accordance with beliefs and is obtained from a proposition (Azka & Huda, 2012). In the Surah (az-Zumar: 9), there is a difference between knowledgeable people and people who are not knowledgeable. In the Surah (al-Mujadilah:11), Allah SWT will give knowledge and exalt those who believe. The Hadith of the Prophet SAW in (HR. Tirmidhi), suggests that someone who goes out to study knowledge until he returns, means he is on the path of Allah SWT. In (HR.Muslim), whoever seeks knowledge, then Allah SWT will make it easy for him to go to heaven. And in (HR. Tirmidzi), explaining about the World and its sides will not be cursed for people who remember Allah SWT and obey Him, as well as people who are knowledgeable or studying knowledge.

### 4. Patience

Patience according to Rasulullah SAW in the book Wasiyatul Musthofa has three signs: patience for obedience to Allah SWT, patience when you get a disaster, and patience to accept the destiny of Allah SWT. Aliah, also revealed that patience is the trait of being able to endure suffering or being tested in serving and following the commands of Allah SWT (Hasan & Aliah, 2008)(Saepulloh, 2020). The word of Allah SWT in surah (al-A'raaf: 199), calls to be a forgiving person, do what is right and not be with stupid people. In the surah (Fushshilat: 34), Allah SWT orders to reject evil in a better way. The hadith of the Prophet SAW in (HR. Bukhari and Muslim), a great person is someone who is able to control himself when angry, not someone who is able to fight. From Aisyah ra, the Prophet SAW said: in (HR. Bukhari and Muslim), Allah SWT is the Most Gentle Substance who loves tenderness.

### 5. Responsibility

Human awareness of behavior and actions is the meaning of responsibility. it can also be said the condition of being obliged to bear everything. The sense of responsibility is to understand humans as social beings and high and low morals. Morals in this case are divided into two types, namely commendable morals (mahmudah) or noble morals (karimah), and bad morals which are often known as madzmumah (disgraceful) morals. (Sanusi, 2020)

Every child born brings their own potential. The family is very influential on the formation of a child's personality. The obligation of parents or educators is to direct the nature that has been ingrained since birth (Maksum, 2016). Children's potential needs to be explored and developed. Exploring potential through children's education. Education has the meaning of processing one's potentials to become more humane (Mukodi, 2019). In education, three important aspects must be met, namely cognitive, psychomotor and affective aspects (Mansur, 2009). In other words, education is the main means of transportation throughout a child's life in the world. Through education, humans can develop rapidly according to the times. (Amaliati, 2020).

The importance of exemplary in educating is a message from the Qur'an, because exemplary is the most important part of character education. One good deed that is exemplified is better than a thousand words spoken, as Allah SWT gives examples of the deeds of the prophets and disobedient people complete with the consequences that occurred, so that we can take lessons from the examples given by Allah SWT. In Surah (at-Tahriim: 6), Allah SWT calls on believers to protect themselves and their families from the fires of hell. In Surah (ash-Shaffat: 24), Allah SWT will ask him in the afterlife at the place of rest. And in Surah (an-Nahl: 93), Allah SWT will ask you in the hereafter about what you did in this world.

## C. METHOD

This writing method is a Literature Review which is the main reference is a book by Abdullah Nasih Ulwan entitled Tarbiyatul Aulad fil Islam. The data collection method is from the Tarbiyatul Aulad fil Islam book which is translated into Indonesian. Writing techniques using descriptive techniques.

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### D. RESULT AND DISCUSSION

The national education system aspires to the formation of complete Muslim women, namely quality Indonesian Muslims while maintaining the nation's noble culture. (Rizal & Lutfi, 2021). An educator as a teacher at school or as a parent at home must have the basic qualities that must be possessed by educators, so that children form individuals who have good and strong characters. When an educator is able to have basic characteristics in children's education, whether he realizes it or not he has made a major contribution to the development of a nation and state that has good and strong character. The basic qualities that must be possessed by the first educators are sincerity, piety, knowledge, patience, and a sense of responsibility.

#### 1. Sincere

Sincerity is the secret of the heart only Allah SWT knows. Ikhlas means sincere. A sincere person has signs, namely: not giving up easily, kind and gentle, istiqomah and likes to help others who are more in need. Sincere people, people who carry out worship, are clean from interests other than the pleasure of Allah SWT, they do it only because of Allah SWT.

To carry out the task of educating, an educator begins with sincere intentions only because of Allah SWT. That way, educators can carry out educational methods on an ongoing basis, following step by step the development of children's education. Sincerity is emphasized in the Qur'an and the Hadith of the Prophet SAW. In Surah (Al-Bayyinah: 5), Allah SWT commands to worship Allah SWT and obey Him in practicing the straight religion by establishing prayer, and paying zakat. The hadith of the Prophet SAW narrated by Abu Daud and Nasa'i Rasulullah SAW also said that Allah SWT will not accept any charity except those who are sincere only because of Allah SWT. In (HR. Bukhari and Muslim), every deed depends on its intention, and everyone will get what is intended. Ikhlas is the main condition for acceptance of deeds of worship by Allah SWT.

Examples of the application of sincerity in everyday life: helping friends, cleaning the house or school, giving assistance, helping disaster victims.

#### 2. Piety

We often hear the word piety in everyday life. In the world of education, piety has a very important position. Piety is carrying out His commands and staying away from His prohibitions. According to some scholars, Allah SWT will not see you in a place where He has forbidden you to be there, and He will not lose you in a place where He has ordered you to be there. According to some other scholars, piety also means preventing the punishment of Allah SWT by doing good deeds and fearing Allah SWT both physically and mentally. Taqwa is maintaining and guarding. Piety means keeping oneself from everything that is forbidden by Allah SWT, and carrying out everything that is ordered by Allah SWT.

All of these opinions lead to one understanding, namely preventing the punishment of Allah SWT by always feeling that Allah SWT is watching him, being committed to the rabbani system both physically and mentally, and always exerting all one's abilities to achieve what is lawful and avoid what is unlawful. The fear is the most important part. Fear arises from having faith in Allah SWT, so that awareness grows to glorify His position and obey Him. People who fear Allah SWT, will be very observant of their movements and behavior, because they are aware of His supervision. In the surah (Al-Ahzaab: 70), Allah SWT orders believers to fear Allah SWT and orders them to speak the truth.

In Q.S Al-Hajj verse 1 which means: "O people, fear your Lord; Indeed, the shock of the Day of Judgment is a very big (dreadful) event" (Kamaliyah & Arifin, 2021). In (HR. Thabrani) From Nu'man bin Basyir the content of the hadith is that Rasulullah SAW ordered to fear Allah SWT and to treat their children fairly, like children who are devoted to their parents.

Educators belong to the main group addressed by the contents of the orders and directions of the Prophet SAW, so that they can become role models for their students. Educators are the main person in charge of children's education which is founded on the foundation of faith and signs in Islam. If educators do not embody the value of piety and commitment to the Islamic system in their behavior and association, children will undoubtedly grow above deviations and fall into error and ignorance, because those who guide and give directions have been contaminated with various acts of evil. Thus the child will grow up without feeling that there are obstacles from Allah SWT and supervision from Allah SWT, and there is no commitment in his heart, the child will be tarnished and deviated.

Therefore educators must understand the nature of educating children, if they want goodness, guidance and improvement for their children and students, as well as cleanliness and purity for the world, and become role models for their students.

Examples of the application of piety in everyday life: praying 5 times a day, carrying out habits related to worship and many more.

#### 3. Science

In addition to sincerity and piety, an educator must be knowledgeable, so that he can know the basics of education applied by Islamic law. With knowledge, an educator can master lawful and unlawful matters, understand moral principles, Islamic order in general, and legal principles. All of this is the provision of an educator to put things in their place, educate children with the basics

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and consequences, so that they walk on the path of improvement and on the basis of strong Islamic teachings, according to the instructions of the Prophet Muhammad SAW as a noble example from the history of the first generation, which consists of the companions of Rasulullah SAW and the tabi'in. Knowledgeable, namely having knowledge or intelligence, a person with knowledge means someone who has knowledge and intelligence. (Rizki et al., n.d.)

If educators do not have knowledge, especially knowledge regarding the basic principles of children's education, then the child will stagnate in spirit, deviate from his morals, and have a weak social sense. He will lose something valuable, so he can't give it to others. Like the words of a dry lake that makes it impossible to provide water to those who need it, and he also loses a guiding lamp so that it is impossible to illuminate his surroundings. In fact, the existence of disputes and contradictions between fathers and mothers can have a large negative impact, such as causing suffering, psychological problems and complications in children (Al Vice, 2020)

Exemplary in education is the most effective and quite successful way of preparing children in terms of morals, forming them mentally and socially. This is because educators are role models and idols in the eyes of children and good examples in the eyes of children. (Qurrota, 2016). Parents are obliged to educate well in the hope that children will benefit the family, religion and country (Khotimah, 2022). The main tasks of parents in education are to instill faith, equip children with knowledge, teach good morals, and teach children to worship.

An appeal to seek knowledge is contained in the Qur'an, one of which is in the Surah (Al-Mujadilah: 11) which contains the verse that Allah SWT will exalt those who believe with knowledge to several degrees. In Surah (Thaha: 114), the content of the verse asks Allah SWT to add knowledge. While the hadith of the Prophet SAW in (HR. Muslim). the contents of the hadith are "Who seeks knowledge, then Allah SWT will make it easy for him to go to heaven." Hadith (HR.Ibnu Majah), the content of the hadith is "Every Muslim is obliged to seek knowledge."

Examples of the application of knowledge in everyday life: behaving nobly, not showing off, not arrogant.

### 4. Be patient

Patience can be interpreted as enduring. Patience can also be interpreted as calm and resistant in the face of trials, not giving up, or heartbreak. Patience is the most important virtue in the soul and morals, which makes humans have ethics and morals. A person can be said to be patient according to the Prophet in the book Wasiyatul Musthofa compiled by Imam Asy Syaran, if that person has three signs, namely: being patient in obedience to Allah SWT, being patient when you get a disaster, and patiently accepting the destiny of Allah SWT.

One form of being patient is to surrender a problem only to Allah SWT by getting closer to Allah SWT by doing worship. According to Aliah, patience is the trait of being able to stand the test of serving and following the commands of Allah SWT which encourages a careful attitude in dealing with something (Hasan & Aliah, 2008) (Saepulloh, 2020).

The motivation to have patience is found in the Qur'an, one of which is the Word of Allah in the Surah (Ali Imran: 134) the contents of which are "Allah SWT likes those who spend their wealth, and those who hold back their anger, and forgive those who who did wrong. In the hadith of the Prophet SAW (HR.Muslim), "Rasulullah saw, said to Asyaj Abdul Qays, "There are two things in you that are loved by Allah Ta'ala: patient and gentle."

Inside (HR. Bukhari and Muslim), "Make it easy, don't make it difficult! Have fun, don't make a run!"

Examples of the application of patience in everyday life: accept gracefully if his opinion is not accepted,

### 5. Sense of Responsibility

In addition to sincerity, piety, knowledge, and patience, an educator must also instill a sense of responsibility. Responsibility is a condition to be obliged to bear everything. The sense of responsibility is to understand humans as social beings and high and low morals. The potential of each child has been innate since birth. The potential of children needs to be developed through education so that they become children with noble character. If parents are less aware of and pay less attention to the development of their children, it will have an impact on the future of their children.

The sense of great responsibility in educating should be instilled in their feelings, by educating children's faith and behavior, as well as in shaping the physical and mental, as well as in preparing their social sense. His feelings will always be a driving force to always supervise and pay attention to children, as well as to direct, familiarize and educate them. If an educator underestimates the supervision, then the child will do damage little by little. Effective child education methods to be applied to children's education include exemplary methods, education with habits, giving advice, attention methods, and methods of giving punishment. The method of advice contains three elements, namely, a description of the good and the truth that must be done (for example regarding ethics), the motivation to do good, and a warning about sins, dangers, the consequences that will occur when doing forbidden things. Habits of noble character are cultivated from childhood, so that in the future they become human

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beings with good morals (Hodijah et al., 2019). The purpose of education is also to improve human beings as servants who serve and receive the blessing of Allah SWT.

A thorough understanding of the responsibilities of faith should be based on the instructions of Rasulullah SAW in conveying the basics of faith to his children, namely teachings that tend to the teachings of monotheism. Because the teachings of monotheism are in accordance with reason and lead them to sound thoughts. Humans were created by Allah in a state of monotheism, Islamic religion, and good and righteous nature. Faith education, moral education, social education starts from within the family (Sudiapermana & Introduction, 2009).

There are several verses in the Qur'an and the hadith of the Prophet SAW as instructions and motivation for educators to carry out their responsibilities to their students. All of this is intended so that educators know the magnitude of the responsibility they carry. In Surah (Thaaha: 132), Allah SWT commands your family to establish prayer and be patient in doing it. The hadith of the Prophet SAW which contains Allah SWT will ask every leader about his leadership and also ask about leadership in leading his family (HR. Ibnu Hibban).

Anyone who has the status of an educator, whether it's a teacher at a madrasa or a parent at home, must take responsibility as well as possible. If responsibility is belittled or ignored, it will be difficult for him to be accountable before Allah SWT. Parents and educators have a very big responsibility for children's education, the focus is character education. Character education is a very basic education to deal with current educational problems. Children's education is a heavy responsibility and a great mandate, and a human being, whoever he is, must fulfill the mandate to those who are entitled to receive it.

A thorough understanding of the responsibilities of faith should Educators have a great responsibility in educating children from childhood to always adhere to noble ethics and familiarize themselves with the principles of a strong soul that are born from the eternal Islamic creed and emanate from deep feelings. . So that in life have good morals and good behavior as well. The greater the efforts of an educator in carrying out his responsibilities, the greater the fruit of his education.

Islam has provided principles and methodologies to achieve the goal of forming and guiding a human child, by finding exemplary sides of his personality that can be developed in the next stages of life. (Atabik & Burhanuddin, 2016). Examples of implementing a sense of responsibility: doing the five daily prayers, doing homework, carrying out rules at home and at the madrasa and many more.

## E. CONCLUSION

Education of children is an important factor that is highly considered in Islam. Many rules or educational methods contained in Islam. Even though the principles in Islam have existed for a long time, these principles are still relevant to be applied in formal and non-formal education. The content in Islamic principles when applied in education, children will grow and develop into children with noble character.

Anyone who has the status of an educator, whether it's a teacher at a madrasa or a parent at home, must take responsibility as well as possible. If responsibility is belittled or ignored, it will be difficult for him to be accountable before Allah SWT. Therefore an educator must have the basic characteristics of an educator. These basic qualities include: sincerity, piety, knowledge, patience, and a sense of responsibility. The greater the efforts of an educator in carrying out his responsibilities, the greater the fruit of his education. Children's education is a heavy responsibility and a great mandate, and a human being, whoever he is, must fulfill the mandate to those who are entitled to receive it.

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## Impact of COVID-19 during and After On J.J. Clusters of Delhi



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**ABSTRACT:** This article discusses the impact of the COVID-19 pandemic on the residents of J.J. clusters, informal settlements in Delhi, India. The article highlights the challenges faced by the residents in terms of the economic crisis which were directly proportional to the architectural planning of these areas also discusses the stigma related to COVID-19 which was surrounded by it which further exacerbated the situation, causing discrimination against slum residents and creating fear and anxiety.

**KEYWORDS:** Economic Crisis, J.J.Clusters, Stigma

### INTRODUCTION

The recent Covid 19 pandemic was arguably the biggest horror faced by the collective human race around the globe. The COVID-19 pandemic has affected people around the world, and India is no exception. India's pandemic burden on lives across the world is among the highest which is dominated by the lower income groups. Most affected people were those living in the J.J. clusters due to their crowded living conditions across the nation which had the least number of utilities and facilities, to begin with. It spread rapidly in the early days of the pandemic, there was little awareness of the virus or how to prevent it, and many people in these communities continued to live and work as usual. This allowed the virus to spread rapidly, leading to high infection rates and deaths. Taking Delhi as an example, the areas that have been hit particularly hard are the J.J. clusters in Delhi, which are home to many of the city's poorest residents. With around 1.87 million cases, most come from these clusters only. Many other aspects contributed to the propagation of the virus which created a domino effect affecting the lives of people at the very grassroots level. The COVID-19 pandemic has significantly impacted the economic condition of people worldwide, and the J.J. clusters in Delhi had been no exception. These clusters are home to some of the city's poorest residents, and many of them have been hit hard by the pandemic, and even in 2023 they are still suffering. Most of the people were daily wagers from their local shops and other works which were shut down during the pandemic and people even who were suspected were associated with social stigma and were left without any way of earnings and depriving them of resources making them more dependent on the government.

### METHODOLOGY

Systematic qualitative research was performed along with observational research in the J.J. clusters of Delhi in the areas of Okhla Industrial Area and Jamia Nagar. Random sampling was performed in these areas for the extraction of the data along with discussions with associated professionals. The whole analysis was performed during and post-COVID-19 pandemic era.

### Architectural-Economic Scenario of J.J. Clusters

J.J. clusters comprise a large number of low-income residents who live in small dwelling units out of which many are shanties made of scrap materials. The architectural planning of the JJ Cluster is largely informal, with the residents themselves constructing their own dwellings as witnessed in many colonies like Sanjay Nagar, Majdoor Camp, etc. The shanties are built using a variety of materials, including corrugated metal sheets, plastic sheets, and bamboo poles. Over a period of time, Basic necessities have been introduced by the locals with the help of the government and many DU's many have been converted into permanent structures but the overall state of living conditions has not improved much. The government has earlier and also is promising and providing many schemes for the upliftment of the people but the overall planning and living conditions still remain the same. Closely grouped DU's and the local marketplaces with narrow streets along with the absence of basic facilities like sanitary and water are among the characteristics which directly provide the overview of the economic conditions of these colonies. It also exposed the densely populated pockets due to which social distancing measures were difficult to implement due to the lack of space.

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The lack of formal planning in the JJ Cluster has resulted in a number of challenges for the residents during the pandemic from which many are still being hit. For example, the shanties are often built very close together, which makes it difficult to access basic services such as water, sanitation, and even proper sunlight. Due to the lockdown during COVID-19, many were left suffering from these basic amenities. In addition, the lack of proper infrastructure like in the cases of Batla House and Shaheen Bagh means that these areas were prone to flooding during the monsoon season from which they suffered as basic aid from the government and different organizations were delayed in many such areas.

### **Economic Hardship**

The pandemic situation in J.J. clusters in Delhi has had a profound impact on the people who live there. Many slum residents in Delhi work in the informal sector, which has been hit hard by the pandemic. The pandemic has severely impacted the informal economy, which is a significant source of employment for people in J.J. clusters. Many families have lost loved ones to the virus, and many others have been left struggling to make ends meet as the pandemic has forced businesses to shut down. Children have been forced to drop out of school, and many families are now facing increased poverty and food insecurity. The loss of income and livelihoods led to economic hardship, making it difficult for residents to afford basic necessities like food and medicine.

People in these communities work as daily wage laborers or in the informal sector, such as street vendors, domestic workers, or construction workers. When the pandemic hit, these jobs were among the first to disappear as businesses closed down and people stayed at home. This has left many families struggling to make ends meet, with little or no income.

Another factor that has contributed to the economic hardship of J.J. cluster residents is the lack of government support. The government announced several relief measures, such as cash transfers, free food, and other forms of support, but many people in J.J. clusters did not receive these benefits. This is because they are often not registered with the government and therefore not eligible for these programs. The lack of government support has left many families without any means of support during the pandemic.

The closure of schools and educational institutions has also had a significant impact on the economic condition of J.J. cluster residents. Many parents in these communities were not in conditions to afford to provide their children with online education or home-schooling, which means that their children had been out of school since the start of the pandemic. This has meant that many children were missing out on education, which could have long-term implications for their future economic prospects.

In addition to these challenges, the pandemic has also led to increased food insecurity in J.J. clusters. Many families in these communities were already struggling to put food on the table before the pandemic, and the economic downturn has made the situation worse. The closure of markets and restrictions on movement has made it difficult for people to access food, leading to increased hunger and malnutrition.

### **Stigma**

The COVID-19 pandemic has not only affected people physically but has also had a significant impact on their mental and emotional well-being. One of the most distressing effects of the pandemic has been the stigma associated with the virus. In Delhi's J.J. clusters, stigma related to COVID-19 has been a significant issue, causing harm to people's lives and livelihoods.

The stigma associated with COVID-19 led to discrimination against slum residents. This made it difficult for them to access resources or services, further exacerbating their difficulties during the pandemic. The stigma related to COVID-19 in Delhi's J.J. clusters was primarily due to the fear and misinformation about the virus. From 675 registered Delhi's J.J. clusters, People who had tested positive for COVID-19 or were suspected of having the virus were often stigmatized and discriminated against. This stigma leads to social isolation, loss of income, and limited access to healthcare and other essential services. Furthermore, families of COVID-19-positive individuals were often ostracized and discriminated against, even though they may not be infected. People avoided any kind of direct trade with such people who were even rumored to be in contact with infected/symptomatic persons. Most suffered were local hawkers with many still suffering from the debt they owed mostly in unsecured loans from other people due to which their economic condition has deteriorated and is proving to be difficult for them to get back even to the scratch condition. Others included local vendors from small-scale grocery stores to textile stores, from local barbers to street food hawkers. These people lacked tremendously and some are not even got a bit stable even after the pandemic situation is over technically.

The stigma associated with COVID-19 has also led to fear and anxiety among people in J.J. clusters. They were afraid to report any symptoms or seek medical help because they feared being stigmatized. This reluctance to seek medical assistance leads to the spread of the virus and further exacerbates the situation. The situation was an interdependent situation but locals were left with no choice which created a common negligence towards the COVID-19 virus.

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### CONCLUSION

The slums in Delhi are densely populated, and social distancing measures were difficult to implement due to the lack of space which forced the government to enable lockdowns, and basic necessities were delayed. This led to a higher risk of transmission of the virus among the residents. Slums in Delhi often lack basic infrastructure like proper housing, ventilation, and adequate sunlight. These conditions lead to poor health outcomes which made residents more vulnerable to the virus. Overall, the poor living conditions in JJ clusters in Delhi had made the pandemic even more challenging for residents. To address these challenges, the government and other stakeholders started working without any coordination with each other but later started to align but now they must work to improve access to clean water, sanitation facilities, and healthcare so as to avoid or control any such situation quickly. Additionally, efforts were made to maintain social distancing and practice proper hygiene but residents were unable to do so because of the closely grouped planning of these societies.

Many slums in Delhi do not have access to proper sanitation facilities such as toilets, clean water, and hand washing stations. This made it difficult for residents to maintain basic hygiene, which was crucial in preventing the spread of the virus. This has been compounded by the fact that many people in these communities work in jobs that require close contact with others, such as street vendors or domestic workers, making it easy for the virus to spread.

Many slum residents do not have access to healthcare facilities or resources, one of the key challenges in preventing the spread of the virus in J.J clusters. This made it difficult for them to receive adequate medical attention or testing for COVID-19. Many residents cannot afford to visit a doctor or hospital, and the few facilities that are available is often overcrowded and understaffed. This meant that many people who have contracted the virus have been unable to receive proper medical care, leading to higher mortality rates.

The government and civil society organizations had tried to address the stigma related to COVID-19 in Delhi's J.J. clusters. They had launched awareness campaigns to educate people about the virus and its impact. The campaigns aimed to dispel myths and misconceptions about the virus and promote a more understanding and supportive attitude toward people infected with the virus. The government had also increased the availability of COVID-19 testing and treatment facilities in J.J. clusters to encourage people to get tested and seek treatment. The pandemic situation in J.J clusters in Delhi has highlighted the inequalities that exist in Indian society which directly impacted the local economy of these clusters from which people are still recovering.

Overall, while the architectural planning of the JJ Cluster is largely informal, the Delhi government is taking steps to improve the living conditions of the residents through the provision of permanent housing and other basic services which could help in uplifting and upgrading their living conditions. It is important to provide them with financial assistance, some scheme or more relaxations in relation to their living and working environment to help them in their present condition.

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## Private Sector Deposits and Performance of Deposit Money Banks in Nigeria



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**ABSTRACT:** This paper critically considered the relationship amid private sector deposits and the performance of deposit money banks in Nigeria for the period 1990-2019. Private Sector Deposits was proxied by demand deposits, Deposit Savings and time deposits, while Performance was proxied by Return on Assets of all deposit money banks in Nigeria for the period reviewed. Secondary data was obtained from the website of Central Bank of Nigeria statistical bulletin and the website of Nigerian Deposit Insurance Corporation (NDIC). We conducted Pretest using Augmented Dickey- fuller (ADF) test statistic to test for unit root. A mix order of integration was observed. The ARDL was thereafter used to estimate the equation, while the bounds test result showed the long run relationship. The short run result revealed negative relationship at some lag periods, and there was no significant relationship amid private sector deposits and Performance of deposit money banks in Nigeria. The bounds test results showed a weak long run relationship amid the variables. These results has so far exposed the fact that private sector funds such as demand deposits, savings deposits, time deposits with Deposit Money Banks in Nigeria do not significantly influence performance the performance of the DMBs except they are used for investment decisions. The study concludes and recommends that, (1) Demand deposits, Savings deposits and time deposits in the custody of DMBs should not be kept unutilized. (2) At long run period, demand deposits, savings deposits, and time deposits should be invested on investment options that would yield positive return on investments. (3) The Central Bank of Nigeria should regulate the level of depositories in the custody of DMBs in Nigeria to ensure sustained financial stability in Nigeria.

**KEYWORDS:** Private Sector deposits, Performance, Return on Assets, Demand Deposit, and Savings deposits, time deposits.

### 1. INTRODUCTION

Public and private sector deposits have been the main sources of deposit takings of most deposit money banks in Nigeria. These sources constitute the bulk of assets of the DMBs, which are either utilized or kept traditionally as just mere custodians for bank customers. With the introduction of the treasury single account (TSA) policy of the Nigerian government, all public sector funds are expected to be remitted to the treasury single account maintained by Central Bank of Nigeria (Ogbonna & Ojeaburu, 2015). With this development, deposit money banks (DMB) are only left with deposits, largely from the private sector, in the form of Demand, savings, time and or foreign deposits, which constitute part of the non-current assets of DMBs in Nigeria. Before the introduction of the TSA in 2003, most deposit money banks relied on deposits from government agencies, ministries and departments. The banks found it difficult to mobilize deposits; rather they did more of arm- chair banking (Ezinando, 2020).

The idea of banking practices, including deposits is as old as the oldest sources of legal knowledge. The basis for banking enterprises were, deposit activities and money trading, followed by the instruments of granting loans and lodgements are aimed at making earning returns. Entities engaged in primary forms of banking performed their services, including receiving and entrusting capital with compulsory returns, regardless of the form of capital. Banking activities started some centuries ago, its traces, can be found in Egyptian civilization (Morawski, 2002).

The argument of Miklinski (2021) was emphatic; he maintained that the wide acceptance of funds by modern banks, within the framework of legal relationship of bank account, was part of the historical forms of banking activities.

Kanu (2016) asserts that previously, public sector funds like the NNPC funds, deposited into different DMBs, thus formed high liquidity. However, with the current federal government policy on treasury single account (TSA), the total deposits of DMBs would be affected when such high revenue generating government agencies, pools its funds out of the banks. The banks would have to

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rely on only private sector deposits to earn returns on investments. From the forgoing it has become imperative to ascertain the relationship amid private sector deposits (assets) and performance.

The intermediation function of DMBs remains a strategic aspect of deposit mobilization from surplus unit to deficit units of the economy; this practice by banks is aimed at increasing the performance of banks (Mohammed, 2012). Okoye & Eze (2013) also decried that DMBs survives by mobilizing savings and extend loans to bank customers with the desire to increase performance. Note that, savings are source of funds with low-interest cost (Bass & Henderson, 2000).

In the words of Alexiou & Sofoklis (2009), there seems to be a consensus that bank profitability is directly related to the quality of assets in the financial position of an entity. Poor credit quality has a negative effect on bank profitability, while good credit quality would have a positive effect on bank profitability. These assertions show that demand deposits, time deposits and savings deposit which are all current asset items are related either positively or negatively. Demand deposits are deposits redeemable on notice; the main component of demand deposits is current accounts and are driven by low rates of interests. Demand deposits constitute a major source of stable funding for banks, especially current accounts. The fact that these deposits are redeemable on notice means that a client has an option to withdraw deposit on demand, and the legal duration is one day. The banks have option to change the demand deposit rate as it wishes, thus demand deposits, are subject to embedded options. These options make risk management of demand deposits difficult. Savings deposits are savings instruments and not transactionary. Thus, savings deposits are less stable source of funding for banks. Deposit money banks traditionally trades with money, with the objective of maximising profits by investing its resources in investments which would yield returns on assets and overall performance of the banks.

One of the factors that can increase or decrease the performance of any bank is the volume and availability of deposits, as the profitability of the banks is the main reason of their existence, (Haddaweaa & Flayyihb, 2020).

## 2. LITERATURE REVIEW

### 2.1 Conceptual review

#### 2.1.1. Demand deposits

Demand deposits are checking accounts, where a customer is allowed to put money into the account or take money out of the account at any time, without penalty (Gran & Daphne, 2021). The account allows one to withdraw money from the account on demand, at any time. Thus, the money in a demand deposit account is generally considered to be liquid or is equivalent to ready cash. Gren & Daphne (2021) further stated that some banks can charge a fee if certain excess withdrawals from the account are made, generally the accounts are intended to allow the bank customer to access money on demand based on the financial needs and goals.

Nathanael (2014) asserted that deposit mobilization is the most important function of commercial banks as their existence depends on the amount of deposits mobilized.

##### 2.1.1.1 Features of demand deposit

- Does not pay high rate of interest
- Withdrawals can be done on demand

#### 2.1. I.I.I Time deposits

Time or term deposits, require bank customers to deposit their money for a specific period of time. This type of deposits can be kept for a specific term of months or years. Some banks call these deposits as certificate of deposit. A time deposit or certificate of deposit with a 12- month's term would require the customer to leave the money in the account until the time deposit matures. Penalties are often charged for early withdrawals of money before the maturity period of time deposits (Gren & Daphne, 2021). Time deposit also earns interest, which is often fixed for a given period of time and is payable upon maturity, some could be paid periodically in the course of the term especially with long term deposits, the longer the term and deposit amount, the higher the interest rates offered, (Sumant, 2007)

#### 2.1. IV. Features of Time deposits

- Deposits can be kept for an agreed period of time
- Has an agreed maturity period

#### 2.1. V. Savings deposits

The Collin's dictionary of banking and finance defined savings deposits as an account in which money is kept regularly to earn interest. Savings deposits are interest bearing deposits account held at a bank. These accounts pay a modest interest rate and the account is safe and reliable option for short –term cash needs. Savings deposit accounts have some constraints on how often

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funds can be withdrawn, however offers flexibility for building emergency funds. It is important to note that savings deposits are important sources of funds that financial institutions use for loans (Kagan 2022).

In the thoughts of Bikker & Gerritsen (2018) savings deposits is an agreement amid a bank customer and a deposit money bank, in return for interest as long as the customer has the right to withdraw without prior notice.

The savings account interest rate varies; deposit money banks can change their rates at any time. With the savings account, money can be transferred in or out of the savings account online at a branch or ATM, by electronic transfer or direct deposits and withdrawals.

### 2.1. VI. Features of savings deposit;

- Funds are kept safe
- It earns interest
- Access to funds remains liquid
- Does not pay higher interest like time deposit account
- Easy to access and easy to make withdrawals.

### 2. 2. Return on Assets

Susan & Belverd (2008) defined return on assets as a performance measure that shows the percentage of profitability which an entity's assets can earn income over a certain period of time. They asserted that return on assets (ROA) gives an indication of the capital intensity of the company, which relies on the industry. The expression below shows the computation of return on assets;

$$\text{ROA} = \frac{\text{Net Income}}{\text{Average total Asset}}$$

From the above mathematical expression, the ROA as a measure of performance is actually a ratio of net income or net profit over the total assets of a business entity. Thus the term also refers to a financial ratio which indicates how profitable an organisation is in relation to its total assets. Investors, bank managements and analysts can use ROA to find out how efficient a bank, or firm uses its assets to generate income, revenue or profit (Hargrave, 2022). Most analysts according to Hargrave (2022) argued that the basic ROA formular is limited in its applications, being most suitable for banks. The deposit money banks statements of financial position better represent the real value of assets and liabilities due to the fact that they are carried at their market value. Return on asset is a measure of how efficient companies use its assets to generate profits. It compares the value of a business assets with the profits it produces over a period of time, it is also used to know how effective business entities uses resources to make profit and for business survival (Emily & Benjamin, 2021)

### 2.2. I Relationship amid Savings Deposits and Performance of DMBs

The study by Haddaweea & Flayyihb, (2020) revealed that relationship exists amid deposits of all kinds and indicators of bank's profitability. The discovery which was made at Jordan, clearly showed that, savings deposits was the biggest contributor to performance of banks in Jordan.

### 2.2. II Relationship amid Demand Deposits and Performance of DMBs

The relationship amid demand deposits and performance has been viewed from different indicators of banks performance. Demand deposits was revealed to have a negative relationship with return on equity, while other classes of deposits such as savings, time and foreign currency deposits had positive relationship with return on equity. These were the views of Joseph & Sinamina (2019)

### 2.2. III Relationship amid Time Deposits and Performance of DMBs

As earlier discussed, time deposits are one of the major sources of liquidity of deposit money banks in Nigeria. The time or term deposit is an interest bearing account that has a defined term to maturity. The longer the time to maturity, the higher the interest payment, this improves the performance of DMBs and vice versa. A vertical relationship exists amid time deposits and performance of DMBs. An increase in time deposits would lead to increase in performance. Helms, (2006) submitted that, deposits (time deposits) are viewed as less expensive alternative funding and as such deposits are deemed to bring down the cost of operations in the process increasing performance.

## 2.3 Theories of Bank Deposits

### 2.3. I Credit creation theories

This theory holds that individual banks can create money and banks do not solely lend out deposit that have been provided to the bank, instead the banks creates bank deposits as a consequence of bank lending. Consequently the amount of money a bank can

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create is not constrained by their deposit takings activities and the act of bank lending creates new purchasing power that did not previously exist ( Mcleay, Radia & Thomas, 2014).

### 2.3. II Theory of Deposit Expansion

Pennington, (1963) advanced the theory of deposit expansion theory by contending that with fractional reserve, bank cash deposits, produces excess reserves. Secondly, such excess reserve leads to loans, and that the proceeds of the loans when re-deposited in the system augment the volume of deposits. He further explained that, if banks receive cash deposits, half would be held in reserve, the other half would be used for purchasing earnings yielding assets such as loans and investments. The sellers of these assets upon receiving the cash re-deposit it in their banks, thereby increasing the volume of deposits.

### 2.4 Empirical Review

The study by Joseph & Sinamina, (2019) on deposit composition of deposit money banks and return on equity in Nigeria. The study used the multiple regression method with the aid of e-views to analyze the data. The result showed that time, savings, demand, and foreign deposits influences the profitability of deposit money banks in Nigeria. The result also showed that demand deposit has a negative relationship with return on equity, while time, savings and foreign currency deposits had a positive relationship with return on equity of deposit money banks in Nigeria.

Ama, Ruwini, Madhushika, Parami, & Dulanjan, (2018) discovered in their study on the effects of level of deposits on financial performance - A study on listed commercial banks in Sri Lanka. A positive and significant relationship was found amid savings deposits, fixed deposits and demand deposits on Return on Assets and Return on Equity of DMBs.

In their study, Gul, Irshad & Zaman, (2011) investigated the impact of assets, loans, equity, deposits and market capitalization on profitability. Their findings revealed that banks deposits have positive correlation with ROA and ROE.

Demirguc, Kunt & Huzinga (1999) in their study on Determinants of commercial banks interest margins and Profitability. They investigated the determinants of commercial banks interest's margins and profitability using bank data from 80 countries for the period 1988-1995. Their results showed that banks that rely largely on deposits for their funding were less

Profitable as deposits mobilization requires more branches and additional expenses.

Habtamu(2021), studied the determinants of deposit growth in commercial banks in Ethiopia. The study used fixed effect panel data estimation technique to analyze the data from 2010 to 2019. The result showed that branch expansion, bank size broad money supply has a positive and significant effect on deposit growth of commercial banks in Ethiopia.

Aderigha & Takon, (2022) in their study on Market power of deposit money banks and economic growth in Nigeria for the period 1981-2020 revealed after using ARDL and bounds test statistic to regress the equation, that at short run savings rate has a positive relationship with gross domestic product.

Ameerh & Hakeem (2020) in their study on "The Relationship between Bank Deposits and Profitability for Commercial Banks" the study was conducted at Jordan for the period 2012 to 2016. The study which estimated using regression analysis revealed that, there is a significant relationship between deposits and ROE and ROA of Jordanian banks.

Naceur & Goiaed (2001) investigated the determinants of Tunisian Bank's performance. The study which covered the period 1980 to 1995, with return on assets as the measure for performance, the researchers used regression analysis to analyze the data. The result indicated that banks with higher level of deposit compared to their assets are the banks with better performance.

Dietrich & Wanzeried (2009) had found no empirical evidence that commercial banks in Switzerland had the ability to convert more deposits liabilities into higher income earnings and assets.

Anila (2022), discovered in the study on determinants of bank deposits in Albania. The used ordinary least square regression analysis to analyze the data between 2009 and 2020. The result revealed that capital adequacy, profitability and remittances substantially impacted bank deposits.

## 3. METHODOLOGY

This section of the study exposes the research methodology used to arrive at the results. It contains data collection, design, model specification and preliminary tests that were conducted.

### 3.1 Research design

The nature of the design of this study is quantitative. It was meant to analyze the data on the relationship amid Private sector deposits and performance of deposit money banks in Nigeria. The study identified three variables for private sector deposits; savings deposits (SD), time deposits (TD) and demand deposits (DD) while return on assets (ROA) was proxy for performance of deposit money banks in Nigeria.

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### 3.2 Data collection

The data for this research was sourced from the website of Central Bank of Nigeria statistical bulletin and annual report of NDIC which was obtained from their website, from 1990-2019.

### 3.3 Data analysis technique

Different statistical tools of analysis are available in the field of statistics. Econometric tools which is one of them, deals with the measurement of economic relationships. Frisch and Bjerkholt, (1995) asserts that, econometric tools aims to give empirical content to economic relations for testing economic theories, forecasting, policy evaluation and decision making. Econometrics was also defined as deriving econometric relations, just by applying statistical and mathematical methods to analyze data. It gives a guide to analyzing the impact of testing an existing phenomenon and testing hypothesis (gementstudyguide.com).

The nature of the data is time series, and would be analyzed using the econometrics statistical tools. Thus, the e-views 10 version will be used as the software to run and estimate the equation for the model.

### 3.4 Model Specification

Model specification is often viewed as a mathematical expression used to measure the economic relationship between variables (dependent and independent variables). In this case, we specify a functional and econometric models for the dependent and independent variables of the study.

$$ROA = f(SD, DD, TD, \dots) \dots \dots \dots (1)$$

Assuming a linear relationship amongst the variables, the econometric relationship of the functional form is written as follows;

$$ROA = \beta_0 + \beta_1 SD + \beta_2 DD + \beta_3 TD + U \dots \dots \dots (2)$$

Where:

ROA= Return on assets

SD= Savings deposit

DD= Demand deposit

TD= Time deposit

U= stochastic error term

$\beta_0$ , = constant

$\beta_1, \beta_2, \beta_3$ , = coefficients and parameters to be estimated

### 3.5 Pre-Test

The following pre-test were conducted to establish the validity and global acceptability of the variables that would be utilized for the selection of the model.

#### 3.5.1 Test for stationarity (Unit Root test)

The test for stationarity of data is one of the assumptions considered while analyzing an econometric model. The result of the unit root test would show direction of stationarity either at levels i.e. order zero  $i(0)$ , first difference i.e.  $i(1)$  or a mixed order of integration  $i(0)$  and  $i(1)$ . The outcome of the pre-test would reveal the statistical tool that would be applied to estimate the equation which would also reveal the hypothesis to be accepted or rejected.

The short-run tests, long-run tests, autocorrelation test and granger causality tests would be conducted.

The tests would show the short run and long run relationship between two or more co-integrating variables in the estimated equation.

## 4. ANALYSIS AND RESULTS

### 4.1 Test for stationarity (Unit Root Test)

This study chose Augmented Dickey-Fuller (ADF) test statistic to test for the stationarity of the data. The following results were obtained from e-views 10 version. The ADF results below shows the unit root results of the dependent and independent variables. ROA, DD and SD were all stationary at levels  $i(0)$  while TD was stationary at first difference  $i(1)$ . This result shows a mixed order of integration, therefore the Auto Regressive Distributed Lag (ARDL) test statistic would be used to estimate the equation.

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**Table 1. Results of the Augmented Dickey-Fuller Unit Root**

VARIABLES	ADF TEST STATISTIC AT		CRITICAL VALUES	ORDER OF INTEGRATION
	LEVEL	1 <sup>ST</sup> DIFF		
ROA	-6.109351		-3.689194 -2.971853 -2.625121	1 (0)
SD	-3.095882		-3..679322 -2.967767 -2.622989	1 (0)
DD	-3.502590 (Prob 0.0152)		-3.679322 -2.967767 -2.622989	1 (0)
TD		-6.222588	-3.689194 -2.971853 -2.625121	1(1)

Significance at 10%, Significance at 5%, Significance at 1%.

### 4.2 Interpretation of Results

The results above shows the augmented dickey fuller test, ROA, SD, and DD are all stationary at levels i (0) while TD was stationary at first difference, i(1). With this outcome, the regression equation would be estimated using the autoregressive distributed lag due to the mixed order of integration.

#### 4.2.1 Interpretation of Result (Auto Regressive Distributed Lag (ARDL) test results

The table below shows the test result obtained from the e-views 10 software which reveals the short run relationship amid the dependent variable and the independent variables.

**Table 2. Showing ARDL result**

Dependent Variable: ROA				
Method: ARDL				
Date: 01/30/08 Time: 00:29				
Sample (adjusted): 1994 2019				
Included observations: 26 after adjustments				
Maximum dependent lags: 4 (Automatic selection)				
Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (4 lags, automatic): LDD LSD LTD				
Fixed regressors: C				
Number of models evaluated: 500				
Selected Model: ARDL(4, 3, 4, 4)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROA(-1)	0.381110	0.179615	2.121810	0.0715
ROA(-2)	0.257594	0.177556	1.450782	0.1901
ROA(-3)	-0.342934	0.189031	-1.814165	0.1125
ROA(-4)	-0.353361	0.121233	-2.914727	0.0225
LDD	-10.61277	3.765987	-2.818057	0.0258
LDD(-1)	12.37494	4.064306	3.044785	0.0187
LDD(-2)	-9.304989	4.056983	-2.293574	0.0555
LDD(-3)	3.443468	3.316128	1.038400	0.3336

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LSD	4.369576	5.071537	0.861588	0.4174
LSD(-1)	-3.597718	4.923766	-0.730684	0.4887
LSD(-2)	-1.029621	5.377139	-0.191481	0.8536
LSD(-3)	7.023211	5.648027	1.243481	0.2537
LSD(-4)	-9.147782	3.916767	-2.335544	0.0522
LTD	6.560751	1.884093	3.482181	0.0102
LTD(-1)	-2.380992	2.230689	-1.067380	0.3212
LTD(-2)	-2.063714	1.343148	-1.536476	0.1683
LTD(-3)	1.200895	1.632417	0.735655	0.4859
LTD(-4)	2.112413	1.833716	1.151985	0.2871
C	9.784521	10.05084	0.973502	0.3627
R-squared	0.927275	Mean dependent var		2.841154
Adjusted R-squared	0.740269	S.D. dependent var		1.817139
S.E. of regression	0.926083	Akaike info criterion		2.833646
Sum squared resid	6.003405	Schwarz criterion		3.753024
Log likelihood	-17.83739	Hannan-Quinn criter.		3.098393
F-statistic	4.958531	Durbin-Watson stat		2.328514
Prob(F-statistic)	0.019097			
*Note: p-values and any subsequent tests do not account for model selection				

(Source: e-views 10 ARDL result)

### 4.2.2 Interpretation of Results

Table two, above shows R-squared at 92.72%, while the adjusted R-squared has 74.02%, the probability value is 0.019097. The implication of the short run ARDL result means that at short run, all the independent variables predict the movement of the dependent variable at 92.72% as the probability value of 0.01907 is less than the critical value of 5%. Thus the null hypothesis is rejected. All independent variables viz; demand deposits, savings deposits, time deposits are best fits that can predict the direction of ROA. At lags 1 and 3, DD has a positive relationship with ROA with the values 12.37494 and 3.443468 respectively. Hence a 1% increase in demand deposit would lead to 12.37494 and 3.443468 increase in Return on Asset at 5% level of significance. At lag 2 however, a negative relationship of -9.304989 was noticed amid demand deposits and return on assets. Thus a 1% increase in demand deposits leads to -9.304989 percent decreases in return on assets. The result also shows that at lags 1 and 2, a significant and positive relationship was found amid demand deposits and return on assets. At lag 3, the result indicates that demand deposit does not significantly relate with return on assets at 5% level of significance.

At lags 1, 2, & 4, negative signs of -3.597718, -1.029621 and -9.147782 respectively were observed amid savings deposits and return on assets. An indication that, at short run period, a 1% increase in savings deposit, return on assets reduces by -3.597718, -1.029621 and -9.147782 at those lag periods respectively. At same lag periods, significant relationship was not found amid the variables, as all the values were all greater than the critical level of 5%.

At lags 1 & 2, time deposits had a negative relationship with return on assets, with the following values -2.380992 and -2.063714 respectively. Implying that a 1% increase in time deposits would result to a -2.380992 and -2.063714 decrease in return on assets of all Deposit Money Banks in Nigeria. At lags 3 & 4 positive signs were observed, 1.200895 and 2.112413. An indication that a 1% increase in time deposit leads to 1.200895 and 2.112413 increase in return on assets. However, the probability values at lags 1, 2,3,& 4 does not significantly influence return on assets at the short run period.

### 4.2.3 Long Run Bounds Test Result

## Private Sector Deposits and Performance of Deposit Money Banks in Nigeria

**Table 3. Bounds test result**

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	3.785135	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

The long run bounds test result as shown in table 3 revealed an F –statistic value of 3.785135 which is greater than the upper bound of 3.67 at 5% level of significance. The null hypothesis is rejected at 5% level, and we conclude that there is a long run relationship between all the independent variables; demand deposit, savings deposits, and time deposits and return on assets of deposit money banks in Nigeria for the period studied. The difference between the f-statistic value and significant level is minimal, hence a weak long run relationship.

### 4.2.4 Autocorrelation- Durbin Watson

The Durbin Watson result shows a 2.328514 value; this means that there is absence of autocorrelation in the data. Thus, meeting the global criteria for the test of the presence of autocorrelation as one of the regression assumptions.

### 4.2.5 Granger Causality Test Result

**Table 4. Granger causality**

Pairwise Granger Causality Tests			
Date: 09/15/22 Time: 16:55			
Sample: 1990 2019			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
LDD does not Granger Cause ROA	28	1.82358	0.1840
ROA does not Granger Cause LDD		0.03587	0.9648
LSD does not Granger Cause ROA	28	0.84709	0.4416
ROA does not Granger Cause LSD		1.17072	0.3280
LTD does not Granger Cause ROA	28	0.20917	0.8128
ROA does not Granger Cause LTD		2.10307	0.1449
LSD does not Granger Cause LDD	28	0.25078	0.7803
LDD does not Granger Cause LSD		1.27137	0.2994
LTD does not Granger Cause LDD	28	0.68068	0.5162
LDD does not Granger Cause LTD		9.81638	0.0008
LTD does not Granger Cause LSD	28	2.72804	0.0865
LSD does not Granger Cause LTD		0.35474	0.7051

The granger causality results above show that causality does not run amid ROA and the explanatory variables. However, causality was only found amid demand deposits and time deposit. This implies that at 5% level of significance, the null hypothesis is rejected.



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### 4. DISCUSSION OF FINDINGS

The results so far have revealed the direction of the study on whether to accept or reject the null hypothesis. At short run all the predictor variables (DD, SD and TD) were seen to predict the direction of return on assets of deposit money banks in Nigeria for the period. It was also observed that at short run, demand deposits, savings deposits and time deposits grossly negatively influence return on assets of deposit money banks in Nigeria for the period reviewed. Implying that a 1% increase in demand deposits, savings deposits and time deposits leads to negative return on assets. At short run, demand deposits significantly predict return on assets at lags 1 and 2, however, savings deposits and time deposits does not significantly predict the movement of Return on Assets for the period reviewed. An indication that savings deposits, demand deposits and time deposits grossly, does not significantly influence return on assets. The long run positions also show that demand deposits, savings deposits and time deposits has a positive relationship with return on assets for the period studied. Although the long run relationship was marginal, the evidence from the empirical study shows that at long run, relationship exists amid demand deposits, savings deposits and time deposits for the period reviewed.

This result aligns with credit creation theory which argued that individual banks can create money, and that the banks do not solely lend out deposits that have been provided to the bank. Instead the banks create money as a consequence of bank lending. Thus the amount of money the banks create is not constrained by their deposit takings (Mcleay, Radia & Thomas, 2014).

The result also agrees with the study by Dietrich & Wanzenried (2011) where it was found in Switzerland that no empirical evidence was established that banks had the ability to convert more deposits into higher income earnings. However, the study by Naceur & Goiaed (2001) investigated the determinants of Tunisian Bank's performance. The study which covered the period 1980 to 1995, with return on assets as the measure for performance, the researchers used regression analysis to analyze the data. The result indicated that banks with higher level of deposit compared to their assets are the banks with better performance.

In this current study, causality was not also discovered amid demand deposits, savings deposits and time deposits and the return on assets. However, demand deposits and time deposits had unidirectional causality amidst themselves.

Our findings have shown that cash deposits by bank customers in the form of demand, savings and time deposits do not on their own relates to performance by banks in Nigeria for the reviewed period. Deposit money banks in Nigeria are expected to use deposits in their custody for investments that would yield positive returns for the survival of banks in Nigeria.

### 5. CONCLUSION

We have examined the relationship amid private sector deposits and performance of deposit Money Banks in Nigeria. We proxied private sector deposits with demand deposits, savings deposits and time deposits while performance was proxied with Return on Assets for the period 1990-2019. The study revealed that at short run periods, demand, savings and time deposits had negative relationship with Return on Assets. Long run relationship was however discovered amid the variables, though marginal. The study concluded that demand, savings and time deposits predicts the directions of return on assets of DMBs in Nigeria negatively. The granger causality test also revealed same results. This position has shown that private depositors especially demand, savings deposits that make withdrawals at short notices, such deposits cannot be effectively used to create additional income or earnings for deposit money banks in Nigeria. This study cannot conclude that the variables used are the only variables that can predict the movement of performance of DMBs in Nigeria. Other variables not included in the study due to statistical errors or unavailable data can be sourced, for further studies.

#### 5.1. RECOMMENDATIONS

From the foregoing, we recommend as follows;

- (i) DMBs should not rely on demand deposits, savings and time deposits as performance indicators for the financial survival of banks in Nigeria.
- (ii) CBN should develop credit policies that would ensure sustainable performance and survival of DMBs in Nigeria.
- (iii) Deposit mix of DMBs should be allocated to investments that would increase returns on assets.

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## Structure and Conduct of the Ocean Freight Cargo Container Industry



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**ABSTRACT:** The existence of globalization increases economic activity between countries. International trade activities are divided into two categories: exports and imports. Sea mode transportation requires tools to transport goods safely from the origin country to the destination country. These tools are called containers or cargo containers. The cargo container shipping industry is an industry that provides containers. The purpose of this study are to: 1) prove that the market structure in the ocean freight container cargo industry is oligopoly, 2) analyse the influence of market structure on behaviour in the ocean freight container cargo industry, and 3) prove the existence of market power in the ocean freight container cargo industry.

This research uses time series data from 2010–2022 and cross section data from 100 companies. Data collection was conducted through non-participant observation and interviews. By using secondary data from companies in the global cargo container industry and interviews. Using SCP theory, the analysis techniques used are concentration ratio, HHI, market entry barriers, behaviour, and market performance.

The results of the study found that the cargo container industry market is a moderately low-concentration oligopoly with high market entry barriers. Market structure influences corporate behaviour in the container industry. Market structure and company behaviour affect market performance through market power.

**KEYWORDS:** Shipping Line, SCP Theory, Concentration Ratio, HHI, Market Power

### I. INTRODUCTION

The existence of globalization increases economic activity between countries. Globalization causes all countries to indirectly run an open economic system. Indonesia has adopted an open economy system since 1970. Population growth is also one of the drivers of a country's ability to conduct international trade. The existence of international trade activities makes one country with another country complement each other. International trade activities include exports and imports. Export is the purchase of goods from other countries by companies in the country (Sukirno, 2016: 205). Import is the purchase of goods and services from abroad into a nation under a multilateral cooperation agreement (Benny, 2013).

Indonesia is a maritime country that has more than 10,000 islands, about two-thirds of the territory in Indonesia is in the form of the sea. The transportation sector is part of a system that is globally distributed for both passenger and freight services. Transportation holds an important key to supporting trade distribution activities; on the contrary, trade activities are one of the pillars of the sustainability of the transportation sector. Based on the International Merchandise Trade Statistics (IMTS) in 2010, the mode of transportation recorded in international trade in goods is a means of transportation of goods entering or leaving a country's economic area. Transportation in general is divided into four groups, namely land, sea, and air transportation.

Based on summary data from European Union (EU) statistics on the economic aspects of globalization, the largest mode of transportation in 2020 for the distribution of imports and exports will be sea transportation modes (Eurostat, 2022). The sea transportation mode uses water-area routes. This mode is considered the most effective for a large number of long-distance freight transports. The sea transportation mode is the main choice in international trade activities. According to BPS 2020 data, Indonesian sea mode transportation is still the main mode of transporting imported goods. As many as 98.21 percent of Indonesia's imported goods enter using sea transportation modes (Distribution Statistics, 2021). The increasing use of sea transportation modes created a tool that previously, since the beginning of trade, people used boxes, sacks, barrels, and containers of various sizes to transport goods. Containers of different sizes cause ineffective use of space, and transported goods have a greater potential for damage (Narguney, 2021). The standard cargo container was invented in 1956 and is still widely used today. More than 80 percent of international trade in goods is carried out by sea, and the percentage is even higher for most developing countries (UNCTAD, 2021). About 170 million containers are moving worldwide (Shin, 2021).

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In 2020 (UNCTAD, 2021), there was an increase in market share for non-mainline trade routes to more than 60 percent, and in 2020, demand for container goods increased more than expected. This was driven by the COVID-19 virus that spread throughout the world (UNCTAD, 2021). In UNICEF's brief report, the increase in container demand is the impact of a reduction in international air transport capacity at the global level in 2020 due to closures and restrictions (Meeus, et al., 2021).

Shipping rates in container transportation cause price competition between shipping companies around the world. Some of the world-famous shipping companies include MSC (Mediterranean Shipping Company), APM (AP Moller) – Maersk Company, CMA CGM, COSCO, Hapag-Lloyd, ONE, and so on (Marine Insight News Network, 2022). In competition between world shipping companies, companies have the opportunity to form cooperation between companies or the formation of subsidiaries. In 1990, Maersk Line and Sea Land Services teamed up to serve major routes in North America, Europe, and the Atlantic (Hirata, 2018). Followed by other companies. In 2014, it was shocked by the two largest companies making alliances, namely Maersk and MSC or the 2M Alliance. The two companies are rumoured to be carrying out their alliance until 2025. The 2M Alliance accounts for 34 percent of the total market share in the container industry (ALPHALINER, 2022). Both companies face the brunt of monopoly laws from the Federal Maritime Commission (FMC) and the European Commission (EC). The purpose of shipping companies making alliances is, among other things, to reach a *wider service route*, increase efficiency, and reduce other operational costs.

The market structure in the container industry is believed to be an oligopoly. This is proven through research conducted by (Christa Sys, 2019) and (Panadiotis, et al., 2016), which states that in general, the container shipping industry operates in an oligopolistic market structure. To prove the form of market structure in this industry, researchers use a theoretical approach, namely Theory S-C-P (*Structure-Conduct-Performance*). SCP theory is an approach that can be used to analyse market structure, conduct, and performance in an industry (Hananto, 2018).

A market's structure also affects the price level it offers. In a book written by Weiss (1989), it is stated that a high level of concentration will include a much higher price. (Nugroho, 2020), research found that the more concentrated the market, the easier it will be for a company to set prices in the market. Oligopoly markets with few sellers will find it difficult to compete on price because fellow sellers will offer similar prices. In an oligopolistic market, firms will avoid price competition because it is easily matched by their competitors (Mankiw, 2013). The concentrated market structure causes dominant companies in the market to be able to take advantage of their *market power*. (Charlampowicz, 2018), found that with one company that has a higher level of concentration, the company will have the power to dictate prices in the market. Competition carried out by shipping companies includes cooperation agreements, loyalty programmes, reputation, and so on.

The purpose of the study is to prove the shape of the market structure of the *cargo container ocean freight* industry is oligopoly, how companies behave in this industry, and the power of companies in dictating prices and monopolizing the market in the cargo container industry globally.

## II. LITERATURE REVIEW

### Market Structure

According to Mankiw in the book "Introduction to Microeconomics", a market is a group of buyers and sellers of a particular product or service. An important characteristic is that buyers and sellers meet and create transactions involving price and quantity (Hasibuan, 1994: 107). Market structure shows market characteristics such as the number of buyers and sellers, the state of the product, the level of knowledge of sellers and buyers, and the state of obstacles in the market. The market characteristics of an industry have an important meaning for competition between companies in the market in particular and economic conditions in general (Teguh, 2010). The form of market structure will give rise to different policies for a company. Market structure shows market attributes that affect the nature of competition. Market elements can be known by classifying the level of market concentration, market share, and obstacles (Jaya, 2019). One of the measuring tools in market structure is market concentration, which also describes the magnitude of *market power* in some companies (Bain, 1956; Bird, 1999).

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Table 2. 1 Types of Market Structures

Characteristics	Monopoly	Dominant Company	Oligopoly	Monopolistic	Perfect Competition
Main conditions	One company has an overall market share (100%)	One company without strong competitors (50-100%)	Combined market share of several companies (60-100%)	Many competitors and none of the companies have a market share of more than 10%	More than 50 competitors of which none have a prominent market share
Number of Manufacturers	One	Many	Little	Many	Huge
Entry/Exit Barrier	Very high	High	High	Low	Very low
Product Type	Heterogeneous	Heterogeneous	Homogeneous or Heterogeneous	Heterogeneous	Homogeneous
Determining Power	Very large	Relative	Relative	Small	None
Competition besides price	None	High	High	High	None
Information	Very limited	Simply Open	Limited	Simply Open	Open

Source : Jaya, 2019

### S-C-P Theory (Structure – Conduct – Performance)

The SCP approach was first introduced by economists Edward Chamberlin and Joan Robinson in 1933 and developed into a model by Joe S. Bain in his book "*Industrial Organization Economics*". In this approach, the market environment has a direct and short-term impact on market structure (Bianchi, 2013). Structure – Conduct – Performance (*Theory SCP*) is a study that concerns the relationship between market performance and market structure (Carlton & Perloff, 2015: 268). Market structure consists of factors that determine the competitiveness of a market. Market structure affects market performance through the conduct or conduct of the company. The market structure then has a direct influence on a company's economic behaviour, which in turn affects its market performance. Any feedback occurs in such a way that market performance can affect conduct and structure, or conduct can affect market structure (Lipczynski, 2017; Faccarello, et al., 2016).

### Market Share

Market share is defined as the share of the market controlled by a company or the representation of the sales of a company in the total sales of its largest competitors at a certain time and place (William J.S., 1984; Fitriyanti, 2015: 81). Market share also illustrates a better market structure compared to just looking at the number of competing companies in the industry concerned (Jaya, 1993: 33). Market share is used to determine the level of market power in an industry.

### Entry Barrier

Barriers to entry are barriers for new players looking to enter an industry. According to Bain (1956), defining barriers to market entry is the advantage of companies that have been in the industry first to control prices, so new companies will experience difficulties in the early stages of entering the industry. According to Sumarno and Kuncoro (2001), there are two types of entry barriers: structural barriers and strategic barriers.

### Conduct

According to Greer in his book titled "*Conduct of Industrial Companies*" in 1975, Conduct is the behaviour of a company in determining prices, production levels, products, advertising, and behaviour towards its competitors. The focus of corporate behaviour is how the company reacts to the conditions of its market structure and the interactions of its competitors. The conduct of a company can be seen in how it determines selling prices, product promotion or advertising, coordination of activities in the market, and research and development (Fitriyanti, 2015).

### Market Power

Market power is the ability of firms to set prices profitably above competitive levels (*marginal cost*) (Perloff & Carlton, 2015: 666–677). A firm with substantial market power has the ability to manipulate market prices and thus control its profit margins.

## CONCEPTUAL FRAMEWORK

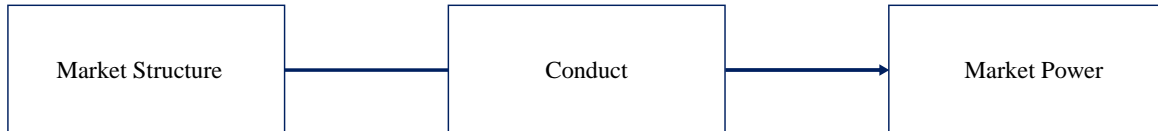
Structure–Conduct–Performance (SCP) theory is a linear relationship by which structure will influence behaviour and beyond. (Arini & Sugiyanto, 2013) in their research that there is a linear relationship between structure, conduct, and performance where structure affects industrial conduct and beyond. The structure of the company affects market performance through the conduct of the company. In an oligopoly market, the price change of a firm will cause rival companies to participate in price

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changes, so there is no reason for the company to change its price level (Sukirno, 2002: 318). (Fitriyanti, 2015), in the results of his research, found that market structure affects market conduct.

Market power is a form of response from the conduct of a company in the market to respond to competition in the business world. (Nugroho, 2020), in research obtained in the telekonomication industry in Indonesia that the more concentrated a market structure is, the easier it will be for a company to set prices in the market. The concentrated market structure causes dominant companies in the market to be able to take more advantage through their market power. Based on the description above, a conceptual framework can be compiled as a basis for determining the hypothesis as follows:

**Table 2. 2 Ocean Freight Container Cargo Industry Structure and Behavior Concept Framework**



### HYPOTHESIS

Based on the introduction and concept framework, there are three hypotheses in this study; 1) The market structure of the cargo container company globally is oligopolistic; 2) The market structure of the cargo container industry affects the conduct of the cargo container industry, and 3) The market structure and conduct of the company affect the market power of the company.

### III. METHODOLOGY

This research is causal-associative, using quantitative and qualitative approaches as complementary data. A quantitative approach is used to prove the shape of market structure and market power based on the S-C-P paradigm. Meanwhile, a qualitative approach is used to examine corporate behaviour in this industry in direct response to market competition. This study used time series data from 2010–2022 and a cross-section of 100 world shipping companies.

#### Data

The data used in this study are primary data and secondary data. Secondary data in the form of company output and inputs, market share, revenue, and container freight rate from the AXS Alphaliner website, the annual report of shipping companies from 2010–2022, Qualitative data in the form of an in-depth interview with one of the experts in a logistics service company.

#### Research Scope

This research limits the container industry analysed based on companies that own cargo containers and container carriers globally. In calculating market performance in the form of market power in the container industry, this study only examines the world's top two shipping companies because the focus of this study is to find out the existence of market monopoly power.

#### Analytic

This research uses a descriptive analysis method that explains the market structure and conduct of the ocean freight container cargo industry globally with SCP theory, which is a model that states that the economic performance of an industry is a function of the behaviour of sellers and buyers associated with the structure of the industry (Bain, 1956; McWilliams, 1993). The stage in testing the industrial structure is to use the market share test, concentration ratio (CR), Herfindahl-Hirschman Index (HHI), and Minimum Efficient Scale (MES) to determine market concentration with the following formula:

#### 1. Market Share (MS)

Market share is information that provides an overview of the total sales of a company to market segments. To calculate the market share, it is formulated as follows:

$$MS_i = \frac{S_i}{S_{total}} \times 100 \dots \dots \dots (1)$$

Remarks:

MS<sub>i</sub> = Market Share X Cargo Container Company (%)

S<sub>i</sub> = Output from the Company (inTEU)

S<sub>Total</sub> = Total Output from the Market (inTEU)

#### 2. Concentration Ratio (CR)

The concentration ratio is the percentage of overall industrial output produced by the largest firms. The CR calculation used in this study uses CR<sub>4</sub>, CR<sub>8</sub>, and CR<sub>20</sub>, which are used to measure the concentration of the four to 20 largest companies in one

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market. The concentration ratio ranges from 0 to 100. For oligopoly markets with low competition, CR is less than 25%, and for very high oligopoly markets, CR ranges from 75–100% (Arianto, 2008).

$$CR = \sum_{i=1}^N Si \dots\dots\dots(2)$$

Remarks:

N = Numbers of companies included

Si = Market Share (%)

### 3. Herfindahl-Hirschman Index (HHI)

The Herfindahl-Hirschman Index is another type of concentration measure. HHI is defined as the sum of the second-power market share of the entire company. According to the Business Competition Supervisory Commission in Indonesia (KPPU), in its merger guidelines, it divides the level of market concentration into two spectrums based on the value of IHL. Spectrum I (low concentration) with a HHI value below 1,800 and Spectrum II (high concentration) with a HHI value above 1,800 (KPPU, 2020). According to the U.S. Department of Justice and FTC, HHI values of 1,500–2,500 are considered to be moderately concentrated, and HHI values greater than 2,500 are highly concentrated (U.S. Justice Department, 2018).

$$HHI = \sum_{i=1}^n Si^2 \dots\dots\dots(3)$$

Remarks:

Si = 1,2,3,.....n (Market share from each company)

N = Numbers of companies included

### 4. Minimum Efficient Scale (MES)

MES is used to calculate market entry barriers, or the ability of new entrants to enter an industry that is approached through company output (Jaya, 2001). The more an industry can produce at the minimum average cost, the more it will discourage new entrants from entering the industry because it is more difficult to compete with old residents who can already produce at a low cost. MES has a value of more than 10%, hence the high market entry barrier (Alistair, 2004).

$$MES = \frac{\text{Average output from the four largest companies}}{\text{Total Output}} \times 100\% \dots\dots(4)$$

Source: (Natalia.dkk., 2012)

### 5. Industry Conduct

Market conduct analysis is analysed qualitatively by looking at efficiency strategies, alliances or collusions, and value-added services carried out by shipping companies around the world.

### 6. Lerner Index (LI)

The Lerner index is used to measure market power (a firm's ability to set prices above marginal costs). Lerner Index values range from 0 to 1. If the value of LI=1, then the monopoly market exists (Pruteanu Podpiera, et al., 2007).

$$LI = \frac{(Pst - MCst)}{Pst} \dots\dots\dots(5)$$

Remarks:

Pst = Ratio of total income to total assets

MCst = Marginal Cost

## IV. RESULTS

### Cargo Container Industry Overview

About 71 percent of the earth's surface is covered with water, or the ratio of oceans to land rounded up to 7:3 (UPI Directory). So it can be concluded that almost the entire world is surrounded by oceans. Hence the importance of sea trade routes. The existence of sea trade routes is needed to carry out export and import trade between countries and meet the needs of each country. Sea trade routes have advantages because they are unlimited in area, have minimal obstacles, and have a larger load capacity of goods than air routes. So that sea trade routes are considered more effective and efficient for exports and imports between countries. To move goods from the country of origin to other countries, or vice versa, tools are needed, namely container ships and container cargo to transport these goods. The importance of this need is that the problem raised in this study is the cargo container industry. Conduct research on companies that own container carriers and cargo containers globally during the period 2010–2022. This research leads to market structure and how the container industry behaves towards market performance in the form of market power owned by companies



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### Variable

#### 1) Output

A firm's output is the amount of goods or services produced in a given period of time that are expended by the firm, society, or government, either for direct consumption or reprocessing for further products. The output of the container industry is displayed in the form of a unit of volume, namely TEU (*Twenty-foot Equivalent Unit*).

Based on the data in Table 4.1, it shows that the output of each container company each year has increased significantly. In 2018, there was one shipping company from Japan, namely ONE (Ocean Network Express). ONE or One Network Express, is a Japanese company that is a consolidation of three companies, namely Nippon Yusen Kaisha (NYK), Mitsui O.S.K. Lines (MOL), and K Line. In mid-2019, the COVID-19 pandemic occurred, which had an impact on all sectors, including one of the economic sectors. The data in Table 4.1 shows that the COVID-19 pandemic has not had an effect on decreasing activity in this industry. This data will then be processed to calculate market share, Minimum Efficient Scale, and Lerner Index.

**Table 4. 1 Global Shipping Lines Companies (inTEUs)**

NO	Company	YEAR												
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	MAERSK	2.116.300	2.147.831	2.539.090	2.591.101	2.953.110	2.946.590	3.193.142	3.287.236	4.039.434	4.177.168	4.192.742	4.182.551	4.263.788
2	MSC	1.827.450	1.863.449	2.121.747	2.307.964	2.547.894	2.546.181	2.768.750	2.939.142	3.251.245	3.556.429	3.766.049	4.041.145	4.501.626
3	CMA CGM	1.193.582	1.209.530	1.342.190	1.414.388	1.668.086	1.744.887	2.250.692	2.145.378	2.644.276	2.707.961	2.695.863	3.005.922	3.334.615
4	China COSCO	527.675	544.857	717.846	739.736	820.259	839.102	1.532.535	1.642.768	2.812.927	2.930.741	2.938.030	3.004.081	2.873.927
5	Hapag-Lloyd	589.877	596.774	638.338	680.815	982.312	965.888	916.850	966.975	1.590.788	1.684.330	1.717.889	1.772.312	1.760.681
6	Evergreen	609.356	603.766	731.955	720.984	952.328	972.406	957.731	991.306	1.168.976	1.297.258	1.276.568	1.362.385	1.606.167
7	ONE	-	-	-	-	-	-	-	-	1.543.231	1.573.830	1.581.368	1.586.396	1.506.539
8	HMM	282.272	286.875	353.320	339.115	372.037	377.060	437.512	470.505	416.043	408.285	388.526	842.192	818.075
9	YANG MING	319.241	322.091	359.411	365.656	429.131	480.593	582.039	568.582	637.716	634.109	646.630	617.725	708.403
10	ZIM	316.399	322.735	318.180	335.728	331.301	325.439	437.512	295.170	385.982	284.819	292.303	407.748	516.472
TOTAL		14.702.502	14.812.628	15.869.313	17.046.717	19.914.374	19.010.258	20.731.688	20.674.440	22.648.593	23.275.516	24.072.442	24.433.070	26.044.343

Source : ALPHALINER (edited by author)

#### 2) Market Share

The data used to calculate market share in this study came from 100 companies in the industry from 2010 to 2022. This data will then be processed based on the Concentration Ratio (CR) and Herfindahl-Hirschman Index (HHI). There are four companies that will have the largest market share during 2010–2022, as follows:

**Table 4. 2 Market Share from 4 Global Shipping Lines Companies 2010-2022**

NO	COMPANY	Market Share (%)												
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	Maersk	14,39	14,50	16,00	15,20	14,83	15,50	15,40	15,90	17,84	17,95	17,42	17,12	16,37
2	MSC	12,43	12,58	13,37	13,54	12,79	13,39	13,35	14,22	14,36	15,28	15,64	16,54	17,28
3	CMA CGM	8,12	8,17	8,46	8,30	8,38	9,18	10,85	10,38	11,68	11,63	12,20	12,30	12,80
4	COSCO	3,59	3,68	4,52	4,34	4,12	4,41	7,39	7,95	12,42	12,59	11,20	12,30	11,03

Source : ALPHALINER (edited by author)

#### 3) Revenue

Revenue, according to Lam and Lau (2014: 317), is the gross inflow of economic benefits during the current period that arises in the usual course of activities of an entity when inflows are generated in capital additions other than those related to the contribution of equity holders. In this study, the revenue of a company can be seen from the annual report of each company. This data will then be processed based on the Lerner Index (LI) formula to obtain the calculation of Marginal Cost (MC) from Marginal Revenue (MR).

#### 4) Container Freight Rate

Tariffs are the imposition of taxes or customs duties on goods that cross the borders of a country (Diphayana, 2018). Freight rate is the amount paid to the carrier company for the transportation of goods from the point of origin to the agreed location. The tariff used in container shipping is *Freight All Kinds* (FAK). The tariff used in this research uses USD (\$), where USD is an international medium of exchange. Freight rates are sensitive to world oil prices, conflicts around the world, the acceleration and slowdown of developed country economies, outbreaks, and so on. This data will then be processed to calculate the Lerner Index (LI).

## Structure and Conduct of the Ocean Freight Cargo Container Industry

### Market Structure of the Cargo Container Industry

Market structure analysis aims to identify the level of competition and character that occur in the cargo container market globally. Identification is done using an analysis of market concentration and barriers to market entry.

### Analysis of Market Concentration in The Cargo Container Industry Globally

CR or Concentration Ratio variable in this study uses the market share variable as the basis for calculation. The CR variable is used to look at the market structure of an industry with a certain CR level of this container industry. In this study, the CRn levels used were CR 4, CR 8, and CR20 from 100 companies. The concentration index used is for the period 2010–2022.

The results of Concentration Ratio analysis can be seen in Table 4.3, showing that the cargo container industry globally, based on the average CR value is an oligopoly with a moderate low concentration (Bain; Sutarta, 1995). This shows that the market structure of the cargo container industry has a moderate low concentration level. Market concentration is an indicator of market structure that determines conduct, performance, and the level of competition in the market (Arthathiani, et al., 2020).

**Table 4. 3 Concentration Ratio (CR)**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Average
<b>CR4 (%)</b>	39,09	39,92	42,44	41,38	40,93	43,19	47	48,44	56,29	57,45	56,47	58,26	57,49	<b>48,33</b>
<b>CR8 (%)</b>	54,48	54,89	58,21	56,81	56,59	59,65	61,9	63,52	78,1	79,75	78,16	81,03	79,35	<b>66,34</b>
<b>CR20 (%)</b>	82,83	83,14	86,84	83,92	82,61	87,57	84,61	83,7	88,91	89,81	87,93	92,35	90,79	<b>86,54</b>

Source : ALPHALINER (edited by author)

Herfindahl-Hirschman Index (HHI) is a measure to measure the level of market concentration other than CR (Concentration Ratio). To obtain the Herfindahl-Hirschman Index is obtained using market share data squared.

The results of the Herfindahl-Hirschman Index analysis can be seen in Table 4.4, showing that, as well as the CR calculation results, the market structure of the cargo container industry has a moderate low concentration level. Judging from the categories issued by KPPU Indonesia and the U.S. Department of Justice and FTC, the average yield of IHL from 2010–2022 was 776.91%.

**Table 4. 4 Herfindahl – Hirschman index (HHI)**

NO	YEAR	HHI (%)
1	2010	578,63
2	2011	586,04
3	2012	661,12
4	2013	630,26
5	2014	603,22
6	2015	671,33
7	2016	697,38
8	2017	729,39
9	2018	959,46
10	2019	998,06
11	2020	963,14
12	2021	1023,72
13	2022	998,05
<b>Average</b>		<b>776,91</b>

Source : ALPHALINER (edited by author)

### Industry Entry Barriers Analysis

Calculating industry entry barriers using one of the indicators, namely the Minimum Efficient Scale (MES) using data from the four largest companies in the container industry during the research period of 2010–2022, Market entry barriers are used to analyse industry structure, where the number of producers in and out of the market will affect pre-existing producers. In previous studies, it has been found that the market structure in the cargo container industry is oligopoly, so it is proven by calculating industry entry barriers as one of the characteristics of oligopoly markets. The MES value in the cargo container industry of the 4 largest companies in 2010–2022 is shown in Table 4.5.

Based on Table 4.5, it can be seen that the cargo container industry globally has high market entry barriers, with an MES value of 12.01%. Where according to Alistair (2004), the MES value is above 10%, the barrier to entry into the industry is high. The

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cargo container industry has a market entry barrier of 12.01%. This means that new companies have high barriers to entry into the cargo container industry that match the characteristics of the oligopoly market.

**Table 4. 5 Minimum Efficient Scale (MES) 2010-2022**

<b>NO</b>	<b>YEAR</b>	<b>MES (%)</b>
1	2010	9,60
2	2011	9,70
3	2012	10,60
4	2013	10,30
5	2014	10,03
6	2015	10,60
7	2016	11,70
8	2017	12,10
9	2018	14,07
10	2019	14,36
11	2020	14,12
12	2021	14,56
13	2022	14,40
<b>AVERAGE</b>		<b>12,01</b>
Source : ALPHALINER (edited by author)		

### Cargo Container Industry Conduct

Conduct is the behaviour of a company in determining prices, production levels, products, advertising, and behaviour towards its competitors. Market conduct in the cargo container industry globally is analysed descriptively to obtain information on corporate behaviour in the cargo container industry, which is explained through efficiency strategies, alliances or collusions, and value-added services. The analysis data was obtained based on in-depth interviews with sources related to logistics companies and other supporting sources.

#### 1) Efficient Strategy

Logistics actors are looking for ways to maintain logistics efficiency. Just like in the cargo container industry, the container shipping industry is classified as a logistics company. The challenge for logistics companies is an increase in cost burdens such as rising prices for fuel, machinery, and equipment. So in terms of efficiency, it has always been the main focus in this industry. Based on the results of the analysis conducted and the company's efforts to improve service efficiency and costs, the company has the opportunity to cooperate with other container shipping companies by increasing the service routes owned by each company. Cooperation can also fulfil the intention of the company to meet the needs of transport ships so that it will save fuel and operational costs and increase ship productivity. Shipping companies also reduce the cost of replacing container ships with larger capacities so as to minimize costs such as operational costs and fixed costs.

#### 2) Alliance

A strategic alliance is a formal relationship between two or more groups in order to achieve a mutually agreed-upon goal or to independently meet the needs of each organisation. Alliances provide newly created firms and structures with the strength to gain a competitive advantage (Jeffrey, et al., 2008; Casseres, 2008).

The shipping line alliance began in the 1990s, and its members continue to increase their global cumulative market share (Pelindo, 2021). In 2020, the global cumulative market share of shipping line alliances reached 81%, of which the three largest alliances are 2M (Maersk and MSC), Ocean Alliance (CMA CGM, COSCO, and Evergreen), and The Alliance (Hapag-Lloyd, Yang Ming, and ONE) (Pelindo, 2021). Alliances in shipping lines are driven by the need to face competition from major players, expand service areas and ship availability, leverage economies of scale, and lower costs. According to the results of research through interviews, with alliances, companies can use larger ship capacities and combine the contents of the ship with other companies. As a result, companies can save operational costs, and they do not need to reduce prices, but they indirectly reduce the burden of shipping costs or inputs (Hirata, 2017).

The 2M Alliance is the largest alliance in the container industry, namely the alliance of Maersk and MSC companies. This alliance, in 2022, took over 34 percent of the entire market share. In this regard, this alliance has been supervised by the FMC (Federal Maritime Commission) and EC (European Commission), where in the EU regulation on "CBER (Regulation on the

## Structure and Conduct of the Ocean Freight Cargo Container Industry

exemption of consortium blocks (in)" the combined market share operating should not exceed 30 percent (EC, 2009) (Gunwoo, 2003).

Table 4.6 shows some of the alliance events carried out by shipping line companies globally.

**Table 4. 6 List of Shipping Lines Alliances**

Year	Description	Source
1990	Maers and Sea-Land Start an alliance system	(Hirata,2017)
1994	The Global Alliance (APL, MOL, OOCL, & Nedlloyd)	(Hirata,2017)
1995	Grand Alliance ( Hapag-Lloyd, NYK, NOL, P&O)	(Hirata,2017)
1998	New World Alliance ( APL, HMM, & MOL)	(Hirata,2017)
2000	CKYH Alliance (COSCO, Yang Ming, K-Line, & Hanjin Shipping)	(Lu, et al.,2006)
2011	G6 Alliance (APL, HMM, MOL, Hapag-Lloyd, NYK, & OOCL)	(Hirata,2017)
2014	2M Alliance (Maersk & MSC)	(Maersk Line, 2014)
2014	O3 Alliance (CSG, CMA-CGM, & UASC)	(CMA CGM, 2014)
2014	CKYHE Alliance (COSCO, K-Line, Yang Ming, Hanjin & Evergreen)	(Evergreen, 2014)
2017	Ocean Alliance (CMA CGM, COSCO, Evergreen, & OOCL)	(Hirata,2017)
	The Alliance (Yang Ming, Hapag-Lloyd, & ONE)	

### 3) Value Added Service

Value Added Services (VAS) is an offer of services or services that provide added value for consumers (Iswara & Hermawanto, 2013). (Verwoerd, 1999), Value added logistics is a concept that aims to rearrange the logistics chain in a unique, more integrated way aimed at reducing total costs and improving service quality.

The results of research through interviews found that one container shipping company implements services that provide added value to consumers or users. The company offers value-added services, the main purpose of which is to provide and improve services for consumers. Shipping companies also maintain relationships with consumers, and other examples of shipping companies also maintain good relations with third parties include forwarding services. The importance of maintaining good relations with consumers is one strategy for being able to compete with competitors. To increase added value, shipping line companies expand their business as port operators; this strategy is driven by the potential for increasing the competitive advantage that can be owned by shipping lines. This expansion is carried out through share ownership or subsidiaries. COSCO Shipping has successfully expanded by investing as an operator in 30 port terminals worldwide. Meanwhile, Maersk is expanding through its subsidiary, APM Terminal, which is one of the largest global port operators. This is done with the aim of improving the quality of service at the port.

### Industry Performance in Market Power Practices

Market power according to Lipczynski (2017) and Faccarello et al. (2016), is a state where market structure directly affects the economic conduct of the company, which in turn affects its market performance. There is feedback that occurs in such a way that market performance can affect conduct and structure, or conduct can affect market structure. Market power analysis in the cargo container industry globally is analysed using Lerner Index (LI) calculations. The Lerner Index calculation is used to measure the market power of an industry. By using data from two shipping line companies, namely Maersk Line and CMA CGM. The market power of the two business actors is analysed through the Lerner Index, which will be further analysed in the following discussion.

#### 1) Lerner Index (LI)

Calculating market power is done using one indicator, the Lerner Index (LI). The Lerner index can also be used to observe the behaviour of a company in determining prices. The Lerner Index measures the difference between price and marginal cost

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resulting from exercising that market power. In calculating market power, circumstances are assumed  $MR = MC$ , where the company has maximised profits within a certain period of time.

$$LI = \frac{P-MC}{P}, \dots MR=MC$$

$$MR = \frac{\Delta TR}{\Delta Q} \dots \dots \dots (6)$$

Table 4.7 and Table 4.8 show the results of the calculation of the Lerner Index for Maersk Line and CMA CGM companies. These two companies have dominated the container industry market for 13 years of research. The reason for choosing these two large companies in the container industry is to find out how these large companies use their ability to monopolise the market. The calculation results in Table 4.7 and Table 4.8 get an average Lerner Index value of 0.9999. The lowest LI value was 0.9999, and the highest was 1. In other words, both Maersk and CMA CGM companies have market power.

No	Year	Company	Lerner Index (LI)
1	2010	Maersk	0,9999
2	2011	Maersk	0,9999
3	2012	Maersk	1
4	2013	Maersk	1
5	2014	Maersk	0,9999
6	2015	Maersk	0,9999
7	2016	Maersk	1
8	2017	Maersk	1
9	2018	Maersk	0,9999
10	2019	Maersk	1
11	2020	Maersk	0,9999
12	2021	Maersk	1
13	2022	Maersk	0,9999
Average			0,9999462

Source : Annual Report A.P.Moller -Maersk (Processed)

Table 4. 7 Lerner Index Maersk Line 2010-2022

No	Year	Company	Lerner Index (LI)
1	2010	CMA -CGM	0,9999
2	2011	CMA -CGM	0,9999
3	2012	CMA -CGM	0,9999
4	2013	CMA -CGM	1
5	2014	CMA -CGM	1
6	2015	CMA -CGM	1
7	2016	CMA -CGM	1
8	2017	CMA -CGM	1
9	2018	CMA -CGM	0,9999
10	2019	CMA -CGM	0,9999
11	2020	CMA -CGM	1
12	2021	CMA -CGM	0,9999
13	2022	CMA -CGM	0,9999
Average			0,99994615

Source : Annual Report CMA-CGM Group (Processed)

Table 4. 8 Lerner Index CMA CGM 2010-2022

### Market Structure of the Cargo Container Industry Influencing the Conduct of the Cargo Container Industry

The hypothesis in the study states that the market structure of the cargo container industry influences the conduct of the cargo container industry. Conduct is a direct response to a market structure (Carlton & Perloff, 2015: 268). The results of the container industry analysis show that this industry belongs to the oligopoly market type with high barriers to entry. Barriers are complex, and large barriers can strengthen the market power of a dominant firm. New competitors or old competitors with a small market share will find it difficult to operate. So that in this market, the conduct of a company to win the competition or to strengthen its business. The shipping lines alliance in 2020 contributed a cumulative market share globally reaching 81%. Where the purpose of making alliances is to expand service routes, strengthen bargaining power, and save operational costs. According to Mereket et al. (2018), a global shipping line alliance that has an impact on container transportation can reduce unit costs and cause competition in the concentrated market.

Companies, in the face of competition, offer value-added services to consumers. The Company offers and improves services for consumers or customers. Contracts or agreements between providers and consumers mostly use long-term contracts because consumer satisfaction is needed and companies need to maintain their reputation and good image with consumers. The Company also maintains good relations with third parties, namely forwarding parties. Another effort made by shipping companies is to expand their business as port operators. This expansion is carried out through share ownership or subsidiaries. COSCO Shipping invests as an operator in 30 port terminals around the world. Meanwhile, Maersk is expanding through its subsidiary, APM Terminal. These efforts are carried out with the aim of increasing added value by increasing control over the quality of service at the port. Non-price competition in the container shipping company market can be said to be very fierce due to the existence of alliances between companies, the added value of each company, and the company's reputation.

### Market Structure and Conduct of the Company Affect the Market Power of the Company

Another hypothesis in the study states that the market structure and conduct of the company affect its market power. In the s-c-p paradigm, market performance is a response to the conduct of companies in the market; therefore, to measure performance in this industry, it is done by measuring the market strength of two giant container companies. The Lerner Index takes into

## Structure and Conduct of the Ocean Freight Cargo Container Industry

account the market power of a company. The calculation of the Lerner Index gets a value of 0.9999, meaning that large companies such as Maersk and CMA CGM have market power, with the average Lerner Index for 2010–2022 being 0.9999 or 1. In other words, the average Maersk and CMA CGM company is able to set a price higher than its marginal cost of 99.99%.

Market power in this industry is associated with high barriers to market entry, as shown by the calculation of the Minimum Efficient Scale (MES), which gets a result of 12.01%. This means that new companies face high barriers to entering the container industry. Where new companies must be able to produce output above 12.01% or 2,226,102 TEU (12% of 26,735,484 TEU) to survive in the container industry. The three major companies, Maersk Line, MSC, and CMA CGM, have a market share of 47% (in 2022) of the total market share. However, the study found that while both giants have the ability to dictate prices, they do not have the ability to dictate prices in the global market. This is in accordance with research conducted by Matsuda et al. (2021) and Hirata (2018), who found that the container shipping market does not have the ability to dictate prices and does not have a monopolistic nature. The results of the analysis of the concentration of the cargo container industry show that this industry has a low concentration.

Alliances between container shipping companies are sometimes suspected of creating market forces or monopoly effects. However, research conducted by Hirata (2017) shows that alliances do not inhibit competition, but alliances have the goal of lowering unit operating costs so as to emphasise the marginal costs of container shipping companies. The relationship between MSC and Maersk is not as solid as other alliances. 2M VSA refers to a ship-sharing agreement and represents a lower level of cooperation compared to "Alliance." MSC and Maersk only deploy 24% and 39% of each fleet to be operated together, which is lower than other alliances (KMI, 2022).

The results of the study show that the freight rate is determined by the world economy. Events that occur in the world, such as plagues, wars, and the policies of each government. Supply and demand, economic slowdowns, and economic accelerations that occur in major countries will affect growth in this industry. The policy applied to container shipping companies recently is the green fleet. In Hirata's research (2017), fuel shows an increased relationship with freight rates.

**Table 4. 9 Conclusions**

	Theory	Purpose	Results	Conclusions	Hypothesis	
S	Structure	Proving the market structure of the cargo container industry is an oligopoly	Using CR, HHI, and MES indicators	CR4 = 48,06%	Type IV: Low concentration oligopoly	High market entry barriers and fierce non-price competition give rise to corporate behaviours in the cargo container industry: 1) efficiency strategy, 2) Alliance, 3) VAS
				CR8 = 65,98%		
				CR20 = 86,14%		
				HHI = 776,91 %		
			MES = 12,01%			
C	Conduct	Analyse the behaviour of cargo container industry companies.	Using interview methods and associated with high barriers to market entry.	MES = 12,01%	Oligopoly with fierce competition	The company increased its market share with an alliance strategy of cooperation that led to an increase in market power, especially for large companies. However, due to the low concentration, the market power of companies in the cargo industry does not cause a monopoly effect.
				1. Efficiency Strategy		
				2. Alliance or Collusion		
			3. Value Added Services			
P	Performance	Proving the existence of market power in the cargo container industry	Using the LI indicator	LI = 0,9999 / 1	Both major companies in the cargo container industry have market power but haven't used it to set prices.	
				Maersk Line = 0,9999		
				CMA CGM = 0,9999		

Source : SCP Theory (Joe S.Bain)

## V. CONCLUSIONS

The results of the analysis show that the market structure of the cargo container industry globally proved to be oligopolistic. The results of this study are in accordance with the calculation of concentration ratio (CR), Herfindahl-Hirschman Index (HHI), and market entry barriers using the Minimum Efficient Scale (MES) indicator in accordance with the characteristics of oligopoly markets.

The market structure of the cargo container industry influences the conduct of companies in the cargo container industry. Using the s-c-p paradigm, the results show that market entry barriers and high competition influence the conduct of companies in direct response to the market structure of the cargo container industry.

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The market structure and conduct of the company influence its market power in the cargo container industry globally. The calculation results show that both giant companies in the cargo container industry have market power in this industry, using the Lerner Index (LI) calculation. Two companies (Maersk and CMA CGM), despite having market power, do not use their ability to dictate prices in the market. Market structure affects market performance through the conduct of firms (s-c-p theory). Shown by alliances between companies to develop the company's market share.

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## The Effect of Aerobic Circuit Training on Muscle Resistance, Cardiorespiratory Endurance, and Accuracy Among Archery Athletes in Sport Laboratory School of Faculty of Sport Sciences at the Yogyakarta State University



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**ABSTRACT:** This study aimed to investigate the effect of aerobic circuit training on muscle resistance, cardiorespiratory endurance, and archery accuracy. The study was conducted using the one-group pretest-posttest design. The research subject of was 11 archery athletes of Selabora FIK UNY (Sports Laboratory School of Faculty of Sport Sciences at the Yogyakarta State University). The data were analyzed using the t-test with a significance level of 5%. The results of the analysis of the athletes' muscle resistance showed that the t-count value (13.124) was higher than the t-table value (2.28); the results of the analysis of the athletes' cardiorespiratory endurance showed that the t-count value (3.964) was higher than the t-table value (2.28); and the results of analysis of the archery accuracy showed that the t-count value (7.807) was higher than the t-table value (2.28). Since the t-count was higher than the t-table, the hypothesis was accepted and suggests that there is an effect of aerobic circuit training on muscle resistance, cardiorespiratory endurance, and accuracy among the archery athletes in Selabora FIK UNY. Thus, it can be concluded that aerobic circuit training has an effect on archery athletes' muscle resistance, cardiorespiratory endurance, and accuracy.

**KEYWORDS:** aerobic circuit training, muscle resistance, cardiorespiratory endurance, archery accuracy

### I. INTRODUCTION

A lot of people do sports either for hobbies, health, entertainment, or lifestyles. One of the sports they like to do is archery. Archery is preferred by people across ages, such as children, teenagers, and adults. In Indonesia, which its people is predominantly Muslim, archery is also liked by many since it is one of the sports recommended by Prophet Muhammad PBUH. In ancient times, archery was practiced for hunting. However, along with the times, it has become one of the sports being contested. In order to master it, archery requires composure, patience, concentration, and a strong mentality.

Archery is a sport of shooting an arrow through a specific trajectory towards a target from a certain distance. The difference between archery and other sports that require static movement or closed skills, such as shooting, lies in the type of driving force.

In addition to excellent physical condition, an archer must possess good and correct archery basic techniques in order to achieve optimal performance. Harsono (2004:24) stated that there are nine basic techniques for beginner archers to do, which are standing, nocking, extending, drawing, anchoring, tightening, aiming, releasing, and after holding.

Archery is a sport that requires both technical and physical training. Both is equally vital. In Indonesia, the training for archery athletes' physical improvement has not developed even though physical conditions significantly affect athletes' performances. Some research has been conducted to investigate some factors affecting archery accuracy. Pratiwi (2015) used meditation, while Ariyani (2017) used plank exercise to strengthen the arms' muscle resistance. It is believed that muscle resistance is important not only in archery, but also in so many sports. However a more comprehensive training is needed to not only improve the muscle resistance but also cardiorespiratory endurance.

At Selabora FIK UNY, a laboratory school coined to train sports to children under the supervision of Sport Sciences Department of the Yogyakarta State University (Universitas Negeri Yogyakarta/UNY), muscle-strengthening exercises have been practiced by using internal and external weights. However, aerobic circuit training has not been implemented even though both aerobic and anaerobic resistance are necessary to improve performance in archery. There has been little awareness of the effect

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of aerobic circuit training on muscle resistance, cardiorespiratory endurance, and archery accuracy despite of its massive effect on archer's condition.

Griffin (2006:165) suggested that there are two methods of aerobic training, which are interval and continuous aerobic training. Aerobic circuit training can be a good way to enhance the athlete's skill. Aerobic circuit training is a training program developed by Morgan and Anderson in 1953 at University of Leeds, England involving some training posts such as push up, sit up, jumping jacks, burpees, plank, etc., resulted in 12.5% increase of cardiorespiratory endurance (Gotshalk, Berger, and Kraemer, 2004:761).

Many athletes lack awareness of the importance of physical training to increase performance. As a result, they focus only on how to shoot arrows accurately without any regard to their physical abilities, especially muscle resistance and cardiorespiratory endurance. This, however, leads to their low accuracy in archery. Physical abilities required for archery athletes include muscle resistance and cardiorespiratory endurance since in an archery match, an athlete must shoot arrows for 18 series/rounds. They must shoot six arrows in each round and 128 arrows in total. The time it takes to finish all rounds is six to seven hours.

Muscle resistance is the muscle's continuous ability to hold some weight or obstacle, for example leg's muscle resistance during long distance walk (Ahmad, 2007). In archery, arms' muscle resistance is crucial so archers need to have good arms' muscle resistance to keep their technique stable till the end of a match (Heru & Siswantoyo, 2019:71).

Cardiorespiratory endurance is maximal volume of oxygen that can be used in each minute. It is also called as  $VO_2max$ .  $VO_2max$  is the speed of oxygen use in a maximal aerobic metabolism (Guyton & Hall in Wiarto, 2013:13). Usually  $VO_2max$  is counted in a maximal aerobic metabolism during a certain time in a multistage training until the person is exhausted. It is presented per minute or millilitre/minute/kg of one's weight.

Another vital aspect of archery is accuracy. Without good accuracy, supported by a fit physique, archery athletes will not win the match. One point in an archery match can greatly determine the winner. Even though tactics and mentality during a competition greatly affect the results, the no-less important aspects are muscle resistance, cardiorespiratory endurance and archery accuracy. Thus, this study investigated whether aerobic circuit training affect muscle resistance, cardiorespiratory endurance, and archery accuracy.

## **II. METHOD**

This is a quasi-experimental research with one-group pretest-posttest design. This study was conducted on 15<sup>th</sup> of January until 14<sup>th</sup> of March 2020 at archery field of the Yogyakarta State University. The population of this study was all the archery athletes of Selabora FIK UNY with some criteria, which were being active for the last three months, having their own equipment, being able to do the 30-meter archery shot, and being 10-13 years of age. There were 11 athletes who met the criteria and those people became the samples of this study.

The variables of this study is the muscle resistance, cardiorespiratory endurance, and archery accuracy. Aerobic circuit training was used as the treatment. The aerobic circuit training involved some training posts such as 15 seconds of jumping jack, 2 minutes of jogging, 15 seconds of plank jack, and 15 seconds of seated two arms rowing.

Data of arms' muscle resistance was collected by asking the respondents to do elevated side plank. while data of cardiorespiratory endurance was collected by conducting multistage fitness test, and data of archery accuracy was collected by doing 36-shot test. There were pretest and posttest conducted for each of the variables.

The data from pretest and posttest regarding the muscle resistance, cardiorespiratory endurance, and archery accuracy were analysed using parametric statistics of normality test with Kolmogorov-Smirnov Test, homogeneity test, and t-test. Normality test was conducted to know whether the data from the variables have a normal distribution or not. The homogeneity test was conducted to know whether the variant of the data is homogenous or not. The t-test was conducted to test the hypotheses of this study.

## **III. RESULTS AND DISCUSSION**

All of the respondents did the tests of the muscle resistance, cardiorespiratory endurance, and archery accuracy. The data was then analysed using normality test, homogeneity test, and t-test.

### **A. Muscle Resistance, Cardiorespiratory Endurance, and Archery Accuracy of the Archery Athletes**

The data on the muscle resistance of the archery athletes of Selabora FIK UNY can be seen in the table below.

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**Table 1. Data on Muscle Resistance, Cardiorespiratory Endurance, and Archery Accuracy of the Archery Athletes of Selabora FIK UNY**

Respondent	Muscle Resistance		Cardiorespiratory Endurance		Archery Accuracy	
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
1	30	44	27.6	31.8	280	306
2	38	54	30.6	34.3	266	295
3	50	67	24.4	29.1	298	310
4	41	61	26.8	28.7	274	308
5	31	57	24	28	284	311
6	21	43	23.2	27.2	306	320
7	50	68	31.4	26.8	315	327
8	54	66	26.4	33.2	265	289
9	57	69	29.5	33.2	310	325
10	60	74	26.4	32.4	315	329
11	35	55	23.6	28.7	250	289
<b>Mean</b>	<b>42.45</b>	<b>59.82</b>	<b>26.71</b>	<b>30.31</b>	<b>287.54</b>	<b>309.91</b>
<b>Median</b>	<b>41</b>	<b>61</b>	<b>26.4</b>	<b>29.10</b>	<b>284</b>	<b>310</b>
<b>Mode</b>	<b>50</b>	<b>43</b>	<b>26.40</b>	<b>28.7</b>	<b>315</b>	<b>289</b>
<b>Std. Deviation</b>	<b>12.61</b>	<b>10.21</b>	<b>2.84</b>	<b>2.71</b>	<b>22.57</b>	<b>14.50</b>

Based on the data, in all of the aspects the posttest scores are higher than the pretest scores. The average score of muscle resistance is increased by 17.37, from 42.45 of pretest score to 59.82 of posttest score. An increase can also be seen on the average score of cardiorespiratory endurance with 3.60, from 26.71 of pretest score to 30.31 of posttest score. Similar occurrence happens on the aspect of archery accuracy average score, with an increase of 22.37 from 287.54 of pretest score to 309.91 of posttest score. The data indicates that the increase of muscle resistance and cardiorespiratory endurance is directly proportional with the increase of archery accuracy.

Muscle resistance in the arms is important, especially in archery, because archery takes place for a long period of time. Therefore, having good muscle resistance in the arms will help stabilize accuracy. Furthermore, aerobic circuit training involves jogging which can slowly increase the endurance of the heart and lungs. Cardiorespiratory endurance allows athletes to play in long-duration matches. Thus, aerobic circuit training improves muscle resistance, cardiorespiratory endurance, and accuracy. It indicates that endurance and accuracy are interrelated.

In order to ensure accuracy, an archery athlete must have muscle resistance in the arms, supported by cardiorespiratory endurance. The results of the current study showed that aerobic circuit training trains all the physical components in the body effectively and the improvement of muscle resistance and cardiorespiratory endurance will help enhance archery accuracy.

**B. Normality Test**

Data from the samples is considered as having normal distribution if it passes normality test. Below is a table showing data of normality test on the muscle resistance, cardiorespiratory endurance, and archery accuracy.

**Table 2. Normality Test on the Data of Muscle Resistance, Cardiorespiratory Endurance, and Archery Accuracy of the Archery Athletes of Selabora FIK UNY**

Variable		Z	P	Sig.	Description
Muscle Resistance	Pretest	0.596	0.869	0.05	Normal
	Posttest	0.604	0.859	0.05	Normal
Cardiorespiratory Endurance	Pretest	0.519	0.950	0.05	Normal
	Posttest	0.723	0.673	0.05	Normal
Archery Accuracy	Pretest	0.520	0.950	0.05	Normal
	Posttest	0.410	0.996	0.05	Normal

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The table above shows that the significance value ( $p$ ) of all variables was greater than 0.05, meaning that the data distributed normally. As all the data had a normal distribution, the parametric statistical analysis was then can be performed.

### C. Homogeneity Test

The homogeneity test was conducted since the samples were not categorized into a more detailed one. The data is homogenous if  $F_{count}$  is lower than  $F_{table}$ . The data of homogeneity test is presented below.

**Table 3. Homogeneity Test on the Data of Muscle Resistance, Cardiorespiratory Endurance, and Archery Accuracy of the Archery Athletes of Selabora FIK UNY**

<i>Variable</i>	<i>df</i>	<i>F<sub>table</sub></i>	<i>F<sub>count</sub></i>	<i>P</i>	<i>Description</i>
Muscle Resistance	1:20	4.35	4.163	0.055	Homogenous
Cardiorespiratory Endurance	1:20	4.35	0.959	0.339	Homogenous
Archery Accuracy	1:20	4.35	0.118	0.735	Homogenous

From the table, it can be seen that the muscle resistance's  $F_{count}$  (4.163) is lower than the  $F_{table}$  (4.35). Similar result was also visible in the variable of cardiorespiratory endurance in which its  $F_{count}$  (0.959) is lower than the  $F_{table}$  (4.35). That kind of result was also appeared in the variable of archery accuracy with its  $F_{count}$  (0.118) lower than the  $F_{table}$  (4.35). The biggest difference was shown in archery accuracy variable. Those results shows that the data is homogenous.

### D. T-Test

The t-test was conducted to examine the hypotheses that had been proposed. The hypotheses whether there is an effect of aerobic circuit training on of muscle resistance, cardiorespiratory endurance, and archery accuracy were tested using the paired sample t-test with the significance level of 5%. The results of the t-test can be seen in the table below.

**Table 4. T-Test on the Data of Muscle Resistance, Cardiorespiratory Endurance, and Archery Accuracy of the Archery Athletes of Selabora FIK UNY**

<i>Variable</i>	<i>df</i>	<i>T<sub>table</sub></i>	<i>T<sub>count</sub></i>	<i>P</i>	<i>Sig. 5%</i>
Muscle Resistance	10	2.28	13.124	0.000	0.05
Cardiorespiratory Endurance	10	2.28	3.964	0.003	0.05
Archery Accuracy	10	2.28	7.807	0.000	0.05

The results of the analysis of the muscle resistance of the archery athletes of Selabora FIK UNY showed that the t-count value (13.124) was higher than the t-table value (2.28) and the p value (0.000) was below 0.05, meaning that the t-count value was greater than the t-table value. These results suggest that there is an effect of aerobic circuit training on the muscle resistance of the archery athletes of Selabora FIK UNY. The results of the analysis of the cardiorespiratory endurance of the archery athletes of Selabora FIK UNY showed that the t count value (3.964) was higher than the t-table value (2.28) and the p-value (0.000) was below 0.05, meaning that the t-count value was greater than the t-table value. These results indicate that aerobic circuit training has an influence on the cardiorespiratory endurance of the archery athletes of Selabora FIK UNY. The results of the analysis of the accuracy of the archery athletes of Selabora FIK UNY showed that the t-count value (7.807) was higher than the t-table value (2.28) and the p-value (0.000) was below 0.05, meaning that the t-count value was greater than the t-table value. These results indicate that aerobic circuit training has an influence on the accuracy of the archery athletes of Selabora FIK UNY. All the results showed that the t-count was higher than the t-table, meaning that the hypothesis was accepted and suggesting that there is an effect of aerobic circuit training on muscle resistance, cardiorespiratory endurance, and accuracy among the archery athletes of Selabora FIK UNY.

## IV. CONCLUSIONS

Conducted on the archery athletes of Selabora FIK UNY, the analysis of muscle resistance yielded the results that the t-count value (13.124) was higher than the t-table value (2.28); the analysis of cardiorespiratory endurance yielded the results that the t-count value (3.964) was higher than the t-table value (2.28); and the analysis of the archery accuracy yielded the results that the t-count value (7.807) was higher than the t-table value (2.28). Based on these results, it can be concluded that aerobic circuit training has

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an effect on archery athletes' muscle resistance, cardiorespiratory endurance, and archery accuracy. It is important for the archery coach to put more attention on arms' muscle resistance and cardiorespiratory endurance in order to make the athletes have better accuracy. Aerobic circuit training can be a training method to develop those aspects.

Based on the above conclusion, there are some suggestions offered:

1. Archery athletes with poor muscle resistance, cardiorespiratory endurance, and accuracy can make some improvements by performing aerobic circuit training regularly.
2. Coaches should use aerobic circuit training to improve accuracy among archery athletes.
3. Further researchers should conduct research with a wider sample and population, as well as different variables in order to identify other types of training that can affect endurance and accuracy in archery to improve skills among archery athletes.

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## The Effect of Leg Muscle Strength, Leg Flexibility and Balance on the Ability to Service Sepaktakraw: Literature Review



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**ABSTRACT:** To determine the effect of leg muscle strength, leg flexibility, and balance on the ability to serve sepaktakraw. : the method used is to review literature and identify problems with meta-analysis techniques. Identify published articles from 2019 – 2023 related to the influence of leg muscle strength, kick flexibility, and balance on the ability to serve sepaktakraw using relevant databases (Google Scholar Database, Science Direct and Pubmed) with predetermined keywords. Based on 10 research journals that have been conducted previously regarding the effect of leg muscle strength, kick flexibility, and balance on the ability to serve sepaktakraw, it is stated that balance is an influential factor in serving sepaktakraw. Where balance is a big influence in serving sepaktakraw. Balance is the most dominant factor in serving takraw.

**KEYWORDS:** Leg muscle strength, flexibility of the torso, balance, sepak takraw serve

### I. INTRODUCTION

Sepaktakraw is a traditional sport from Southeast Asian countries including Indonesia (Agustinus & Samsudin, 2013). In achieving maximum sporting achievements, especially the Sepaktakraw Service, an athlete is required to master a series of complex movements supported by several physical components so that they become a unified movement. Playing Sepak Takraw needs to be supported by several factors, namely physical, technical, tactical and mental factors (Hidayat et al., 2020). Efforts to create increased performance are complex problems, apart from being supported by adequate facilities and infrastructure, supervision and guidance for athletes by teachers or coaches is also needed, and there are many factors that contribute to increasing the achievement of an athlete.

Looking at the needs and dimensions of the athlete's leg muscle power in performing the sepaktakraw service, it is still minimal due to the physical condition and the method or form of training which has sufficient intensity, inadequate facilities and infrastructure, and coaches who contribute in training and training which is still in the traditional form without Collaborate according to current developments.

Based on previous research, efforts to improve athlete performance are a complex problem, apart from adequate facilities and infrastructure, guidance and direction from teachers or coaches is also needed, and many factors that influence increasing performance are not easy. One of the factors that is considered to be very influential in increasing the achievement of sepaktakraw sports is the capacity of an athlete's physical condition (Novrianto, 2013). Based on the influencing factors above, the solution in reducing the injury of a sepaktakraw athlete is to test the physical conditions that will support the performance and achievements of an athlete.

Based on relevant studies and various sources, the authors can conclude that an athlete's physical performance and performance are marked by good physical condition. Where the athlete's physical condition that supports consists of leg power, balance and flexibility to serve in the game of sepaktakraw. Some physical components that need to be considered for development are cardiovascular endurance, strength endurance, muscle strength (strength), flexibility (flexibility), speed, stamina, agility (agility), muscle explosiveness (power), endurance strength (strength endurance). ), (Bompa & Buzzichelli, 2015). Keeping in shape like that increases the chances of winning a game. The chances of winning are greater due to the athlete's endurance and significant physical condition. Treatment and type of exercise must be adjusted to achieve stable resistance.

Leg muscle strength is the ability of the muscles to receive loads and provide muscle contractions to exert force on the player's limbs for a certain time. It can be concluded that leg muscle strength is an element of the physical condition that drives every activity and works in one contraction against special resistance and loads According to Zulfa & Kurniawan (2020). A person's

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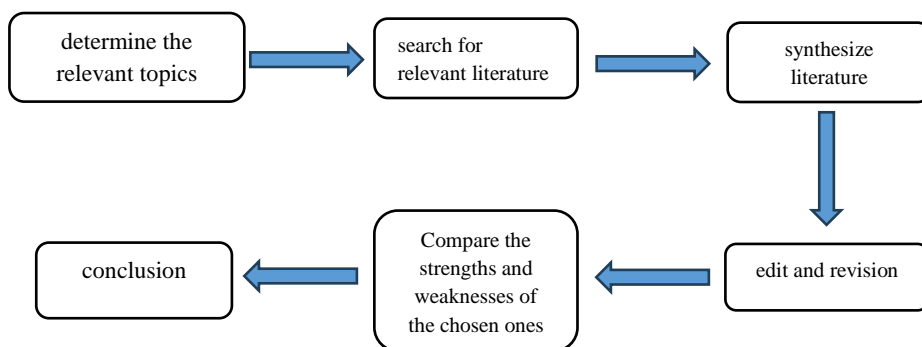
flexibility is determined by the ability to move the joints with joint relaxation exercises that allow wider joint motion (Sudarsini (2016: 76). Meanwhile Harsono (2018: 35) explains the limitation of flexibility is the ability to perform movements within the range of motion of the joints and flexibility is also determined by the elasticity of the muscles, tendons and ligaments around the joints.

Balance is a key component of postural stability and motor skills. It also has a key role for complex sports performances. Balance is one of the biomechanical parameters that can affect the performance of sepaktakraw players and can be used as an important parameter for identifying talent in sepaktakraw.

### II. METHODOLOGY

The research method used is literature review. The research method used is the meta-analysis method. The meta-analysis method is a method that is used to evaluate several research findings on related issues (Muktiani, Rachman & Rahayu, 2019). The steps of this research are as follows: (1) determine the relevant topics, (2) search for relevant literature, (3) synthesize literature, (4) edit and revision, (5) Compare the strengths and weaknesses of the chosen ones, and (6) conclusion.

The purpose of using this method is to obtain information with the strength of scientific sources. This research review is taken from journals, articles, books or literature reviews that are relevant to the contents of the related issues. Analysis data collection techniques used the Google Scholar Database, Science Direct and Pubmed. Meta-analysis is a method for summarizing various research results quantitatively. The data collection technique is a meta-analysis method using Google Scholar and Database (Science Direct). Search using Indonesian keywords, leg muscle strength training, limb flexibility, balance and sepak takraw. The data analysis technique is using Thematic Analysis.



### III. RESULT AND DISCUSSION

The following is an analysis table from the sources of articles reviewed or reviewed

Author (Year)	Title	Purpose	Design / Population	Result
Darrie Leonda Arya Wisnu Murti, ett all (2020)	The Effect of Leg Muscle Strength, Leg Flexibility and Balance on Sepaktakraw Service	This research was conducted to examine the influence of leg muscle strength, leg flexibility and balance on the sepak takraw service	Eksperiment / 44 Athlete	In this study, the biggest influence or contribution in performing the sepaktakraw service was balance with a percentage value of 0.333.
Mardis, et all (2020)	The Relationship between Leg Muscle Strength and Balance Against the Ability of Silas in the Sepaktakraw Game of Cokroaminoto	aims to prove the existence of a relationship between leg muscle strength and balance on the ability to kick Silat in	Eksperiment Korelasi / 40 person	The relationship that has the most contribution is found in the balance with a value of 0.840.



**The Effect of Leg Muscle Strength, Leg Flexibility and Balance on the Ability to Service Sepaktakraw: Literature Review**

	Makassar High School Students.	the game of sepaktakraw.		
Alvi Akbar,et all (2021)	The contribution of flexibility, balance and muscle strength in the lower limbs with the ability to serve in sepaktakraw athletes	To determine the contribution of flexibility, balance and leg muscle strength to the ability of the athlete's serve in sepaktakraw	Eksperiment Korelasi / 15 sepaktakraw athletes	The biggest contribution in serving sepaktakraw is in the balance with a value of 71.61%.
Didin Tohidin, et all (2021)	Study of service ability in sepaktakraw (effect leg muscle, flexibility and self confidence of service abilities)	The purpose of this study is to see the effect of physical conditions and psychological conditions that directly and indirectly affect the ability to serve Sepaktakraw,	Path Analysis / 40 sepaktakraw athlete.	The results in this study had a direct effect on the serve at 39.81% and an indirect effect on the serve was found in the explosive power of the leg muscles with a percentage value of 19.2%.
Sahabuddin, S., Fadillah, A. (2022)	The Contribution of Flexibility, Balance and Leg Muscle Strength to Service Ability in the game of Sepaktakraw	To find out the contribution of flexibility, balance, and leg muscle strength to the ability to serve in the game of sepak takraw.	Deskriptif / 40 student	The biggest contribution in serving sepak takraw is owned by the balance with a magnitude of 74.4%.
Akbar, A., Donie, D., Ridwan, M., & Padli, P. (2021)	The Contribution of Flexibility, Balance and Muscle Strength of the Lower Legs with the Service Ability of the Sepaktakraw Athletes	To find out how much the contribution of flexibility, balance and leg muscle strength to the ability of the athlete's serve sepaktakraw	Eksperiment Korelasi / 15 Athlete	The biggest contribution in serving sepak takraw is in the balance of 71.61%.
Jufrianis, Akbar, James Tangkudung (2018)	The Effect Of Eye-Foot Coordination, Flexibility Of The Limbs, Body Balance And Self-Confidence To The Accuracy Of The Football Of Sepaktakraw	The purpose of this study was to determine the effect of eye-foot coordination, limb flexibility, body balance and self-confidence on the accuracy of playing sepaktakraw.	Path Analysis / 40 Athlete	In this study, eye-foot coordination was the biggest contribution in playing sepak takraw with a percentage of 6.94%.

## The Effect of Leg Muscle Strength, Leg Flexibility and Balance on the Ability to Service Sepaktakraw: Literature Review

Sudarso (2022)	The Influence of Leg Muscle Strength and Balance on the Accuracy of Sepaktakraw Service at the Surabaya Sepaktakraw Academy	The aim is to determine the effect of leg muscle strength and balance on the accuracy of the sepak takraw service.	Pre Experimental designs / 30 person	In this study the biggest influence in making service decisions is balance with a significant value of 0.679.
La Robi (2021)	The Correlation between Balance and Leg Muscle Strength on Servicing Ability in the IV Semester Physical Education Student's Sepaktakraw Game at Unimuda Sorong	The research objective was to determine the relationship between balance and leg muscle strength on serving ability	Korelasional design / 33 university students	The results in this study that the greatest relationship in serviceability is found in Balance with a value of 0.009 or 0.90%
Muhammad Rusli, et al (2022)	Relationship between leg muscle power and service ability in the game of Sepaktakraw	to determine the relationship between leg muscle power and service ability in the game of sepak takraw	Korelasional design / 31 student	The results in this study the relationship between leg muscle power and serving ability is very large with a value of 0.49

After carrying out a literature review, the research data were carried out in the selected journals, and then an analysis and discussion were carried out. Article Analysis This review reviews 10 journals, from several international and national journals which have years of publication ranging from 2019 to 2023. The research methods used are experimental, descriptive research and meta-analysis. The average research subject used is fifteen to forty-five subjects who are examined. After reviewing the data and the results of the analysis, it was found that as many as 10 journals that had been reviewed stated that balance is an influential thing in the sepak takraw service. The Sepaktakraw service is one of the elements of the Sepaktakraw game itself, where the Sepaktakraw service is the beginning of the Sepaktakraw game itself. Differences in athletes regarding balance will be an important consideration in determining the method of balance training in achieving a good serve in the game of sepak takraw. The success of an athlete in performing the sepak takraw service requires systematic and structured training, in order to achieve good performance and accuracy of serving to provide maximum results. Balance can be trained with various tests such as : standing stork test, standing stork test-Blind, dynamic balance test, Y Balance Test, Star Excursion Balance Test (SEBT), to provide increased balance and allow athletes to understand and strengthen the leg and calf muscles in serving. Balance is the ability possessed by a person to maintain the center of gravity of the fulcrum when in an upright position (Darrle et al, 2020). Balance is a complex interaction of integration/interaction of sensory systems (vestibular, visual, and somatosensory including proprioceptors) and musculoskeletal (muscles, joints, and other soft tissue) that are modified/regulated in the brain (motor control, sensory, basal ganglia, cerebellum, association area) in response to changes in internal and external conditions (yulifri, et al 2019). By doing good and effective balancing exercises, you can improve your performance in serving sepak takraw, which not only strengthens punches or kicks, leg muscle strength but also plays a role in the quality and ability of athletes to serve. With the influence of balance in performing the sepak takraw service, it is hoped that athletes or students can further strengthen their physical condition in the game of sepak takraw to avoid fatal injuries.

#### IV. CONCLUSIONS

Based on a review of data analysis results from 10 journals, it was concluded that in the game of sepak takraw, especially in service, the most influential thing or physical effect is balance which is the most dominant factor so that kicks or kicks depend on the balance of an athlete himself.

## The Effect of Leg Muscle Strength, Leg Flexibility and Balance on the Ability to Service Sepaktakraw: Literature Review

### ACKNOWLEDGMENT

1. Based on the results that have been obtained, it is hoped that the analysis from this review article can be used as a reference for coaches to further improve athlete performance by conducting measurement tests.
2. The trainer must also pay attention to other supporting factors apart from the physical, need to know external factors in order to achieve a predetermined training program.
3. By knowing that there is a big influence on the game of sepaktakraw, it is expected that coaches and athletes will be motivated to be more active. Exercises to improve the skills of playing sepaktakraw.
4. It is hoped that the analysis of review articles will further review literature journals with a larger number and use the most recent year of publication.

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## IoT Based Flood Detection, Alarm and Monitoring System Using Multilayer Perceptron and Regression



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**ABSTRACT:** Flooding is a common natural event caused by heavy rainfall and high tides in the Philippines. While this disaster cannot be prevented, people can prepare themselves to face it. The City of Ilagan in the province of Isabela is one of the highly prone areas to flooding caused by the swelling of the Cagayan River. Many communities are living in low-lying areas which most likely experiencing floods. An analysis of the location is conducted including the people living in the area. The analysis resulted in the development of an IoT-based technology for detection and early warning signals to people using sms notifications that can help lessen the difficulty of evacuation. The system uses Arduino UNO as a microcontroller where sensors are attached. These sensors are Light Detection and Ranging (LiDAR) for flood level measurement in feet (ft), Rain Gauge to measure the precipitation rate (mm/hr), and Flow Rate Meter to measure the fluctuation flow of the river in (L/hr). Data gathered from these sensors are processed and sent immediately to people living nearby to monitor the flood level in real-time. The predictive models are developed using the Pinacanauan River dataset taken from the river stations. The multilayer perceptron is used to develop the predictive model with 99% accuracy. The data from sensors are used also and processed using linear regression and calculated as 88% accurate and significant for prediction.

**KEYWORDS:** Flood Detection and Monitoring, Multilayer perceptron, multi-linear regression, predictive model, SMS notification, IoTTechnology

### I. INTRODUCTION

Flooding is one of the most observed natural disasters in the Philippines. The area of Luzon has the longest river and the largest river by discharge volume of water called the Rio Grande de Cagayan. The swelling of the river is due to a heavy amount of rainfall (Abalos, 2022) which causes property damage and a wide loss of agricultural income-generating products.

Technology created a direction for humans in reconsidering modern tools as a solution to seasonal problems. The Internet of Things (IoT) defines a new way of building connections to humans and acquiring real-time information on water level depth and changing conditions. IoT for flood monitoring is a crucial demand to modernize solutions for early flood warning systems as highlighted in the study of (Tang,et.al.,2018). A flood warning is the provision of prior notice of scenarios that are probable to occur in flooding of the primary residence and a potential risk to life. Hudson, (2022) emphasized flood monitoring systems have total integration and adaption with emergency plans that help prevent excessive damage and loss.

Machine Learning algorithm is now essential in manipulating data, offering predictive algorithms and protocols. A huge amount of data is collected using devices such as rain gauge to determine the amount of water and gauge height tools for leveling water in bridges. These data are used and processed to develop model for prediction and extract knowledge. Predictive model can be used and implement for IoT programs and mobile applications integration. This innovative technology helps the community to be prepared and ready as early warning information is delivered from the main gauge water level meter to mobile phones of people nearby river. Hence, Flood Monitoring Systems with implemented predictive model provides significant importance for hazard assessment and extreme event management. Robust and accurate predictions contribute highly to flood management strategies, safety, and evacuation protocols. Flood predictions modeling and monitoring are powerful tools for mitigating flood damage.

The City of Ilagan in Isabela is experiencing floods especially in rainy seasons for it lies near the Rio Grande de Cagayan River. Some parts or Barangays of the city are under low lying areas prone to calamities and disasters such as flashfloods, typhoons and landslide which also stated in the website of Aqua Barrier (2021). Figure 1 shows the City's Hazard Map where the blue

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shaded part has a high susceptibility to floodings where the faded blue color is medium susceptible in flooding. Regardless of the level of risk, flood is still a threat to the people in areas. The land area is still wide and many people are still possibly in danger zone. Since the city is still relying on broadcast, social media updates, local news updates for open gates on dam or continuous heavy rains, the problems found here are the delays of information dissemination before the potential disasters or dangers come. National Disaster Risk Reduction Council (NDRRMC) uses broadcast service protocol on mobile phones with network providers to warn nearby areas of precautionary measures. However, the delay of the broadcast is intolerable-the user only receives the alert warning message right after the damage has occurred. Another potential factor for information dissemination is social media, before a disaster such as an incoming typhoon, subscribers could get updates on when and where the typhoon may landfall and different possible catastrophes may arise based on their updated information regarding the incoming threat and precautionary measures are bound to be executed. Nonetheless, that is causing too much reliance on an internet connection which may only have good experience before the typhoon. In this case, during the disaster, an electricity outage may experience, and loss of internet connection may come unexpected which then causes possible loss of information from the media.

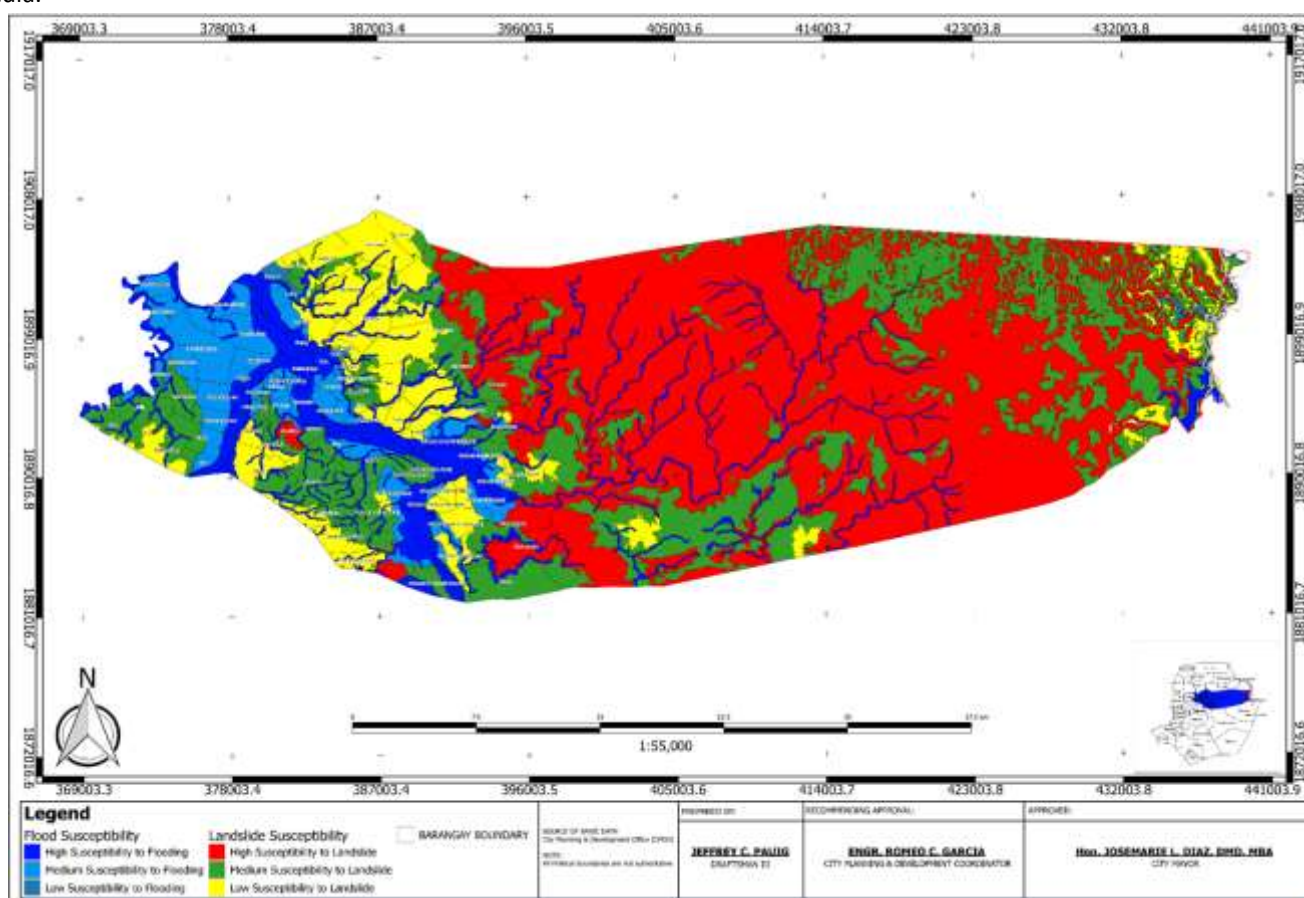


Figure 1: City of Ilagan Hazard Map (source: [www.cityofilagan.gov.ph](http://www.cityofilagan.gov.ph))

The advent of mobile phones changes the way people communicate. In case of emergency the only reliable communication is the Short Messaging Service (SMS) and Direct Call form Network Providers services and IoT programmed devices. SMS notification is an alternative way to disseminate information to all the nearby communities lying the river side (Tang, et.al., 2018). With this, early forecasted or predicted information on the situation of the disasters is important for communities' readiness. As per City Disaster Risk Reduction and Management Office, City of Ilagan barely implement flood monitoring devices installed in some bridges. By implementing the flood monitoring system, it may enhance the understanding of how to interact with all those who lives in the area. Systems can assist minimize excessive damage and loss caused by floods, as well as potentially save lives. In the study of (Wahidah Md. Shah et. al., 2018), they found that it is crucial to develop a flood control system with prediction mechanism to reduce the flood risk. Also, Joey Natividad, et.al. (2018), in their study of flood monitoring, the community around the river has already been using several technologies for flood risk reduction on the threats of flooding especially in populated areas. The Department of Science and Technology-Project NOAH, set up Water Level Monitoring Stations and Automated Rain Gauge along the principal river basins of the place. And through actual visiting the river for inspection of the water level.

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This study addressed concerns on natural disasters especially typhoons, heavy rainfalls, and flashfloods. The damage brought by these calamities is significantly affects the lives of the people, economic stability, community health concern, agricultural and wildlife concern and loss of properties and income generating agricultural products. Through innovative technological solutions, these concerns may minimize and lead to more safe, ready and prepared community. Hence, this focuses on the development of flood early warning signs with predictive model using IoT and linear regression predictive classification algorithm and multiple linear regression.

### II. METHODOLOGY

#### A. System Architecture

This project designed an IoT based technology for flood detection, monitoring and prediction. The main microcontroller used is the Arduino UNO which has connected sensor devices. Three parameters are considered in the architecture. To measure the precipitation rate which is in (mm/hr) unit, rain gauge is used. The flood level in (m) is measured using LiDAR (Light Detection & Ranging) and the flow rate is recorded using Flow Rate meter sensor in (L/hr) unit. These devices are connected forming single operated system performing flood monitoring and prediction. Arduino UNO as its central signal processing microcontroller, reads signal data from different sensors connected. These signal data is then converted to digital value that can be read by the microprocessor. The sensors are used to supply data to the parameters needed for more processing. As shown in figure 1, there are four general elements in the system for Flood Monitoring and Detection i.e. Sensors, Power Supply, Microcontroller, and Notification Function. The Power Supply provides electric charge to power up the system and it uses solar panel to store energy. The rain gauge sensor is responsible in measuring the precipitation rate of rainfall. LiDAR is used for the Water Level and is measured using bridge column water measurement unit. The last sensor considered is the Flow Rate Meter measuring volumetric flow rate of water Liter per hour unit. The data received from these sensors are then process for early warning and predictive model and send through SMS (Short Messaging Service) as notification.

#### B. Detection System

Flood detection is one of the functions intended to develop in this study. Shown in figure 2 is the intent pseudo algorithm for flood detection where these protocols are occurring simultaneously to execute the system intended function. The entire system will check first sensors and device parameters. When there is an occurrence of Rain, the system will throw a Boolean True value checking threshold level. The rainfall measurement is used to calculate precipitation rate under continuous raining scenario. The increase rate of precipitation triggers the water level and flow rate module to check for change in the water level and calculate rate of rise over a certain period. Both continuous rain and no occurrences of rain will loop the preliminary function until a certain threshold for flood detection is met Data from these system processes is used for the predictive model parameters. The system will send nearby community a warning notification for possible evacuation due to increase water level and chance of flood.

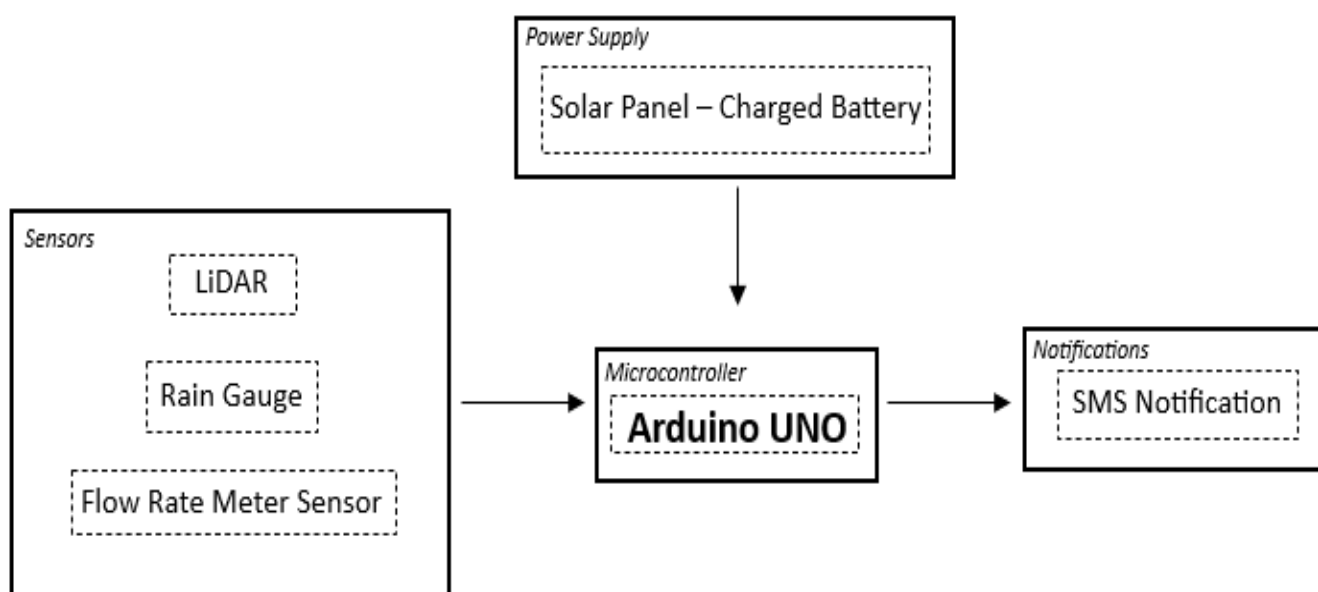


Figure 1: System Architecture Diagram of the Proposed Flood Monitoring & Detection System

## IoT Based Flood Detection, Alarm and Monitoring System Using Multilayer Perceptron and Regression

1. **procedure:** Flood Detection & Monitoring  $\leftarrow$  (Rain(R), RainFall PrecipitationRate (Pr), WaterLevel(Wl),FlowRate(Fr), FloodLevelThreshold(Flt))
2.  $R \leftarrow \text{boolean}(\text{TRUE}, \text{FALSE})$
3.  $Pr \leftarrow m2 - m1$
4.  $Wl \leftarrow l2 - l1 \ \&\& \ Fr \leftarrow r2 - r1$
5.  $Flt \leftarrow \text{boolean}(\text{TRUE}, \text{FALSE})$
6.           **repeat-execute**
7.           **for** Flt(param2) **check**
8.                   **if** R(param1) **then**
9.                           Calculate continuous  $\rightarrow$  (Pr)
10.                           Calculate continuous increase rate  $\rightarrow$  (Wl+Fr)
11.                           Return (Pr,Wl,Fr)  $\rightarrow$  determine threshold
12.                   **else if** R(param2) **then**
13.                           Calculate current  $\rightarrow$  (Pr)
14.                           Calculate current increase rate  $\rightarrow$  (Wl+Fr)
15.                           Return (Pr,Wl,Fr)  $\rightarrow$  determine threshold
16.                   **end if**
17.           **end for**
18.           **until** Flt(param1)
19.           **return** notif
20. **end procedure**

Figure 2: Intent Pseudo Algorithm for Flood Detection

For the system, the threshold is set as shown in table 1. This is used during calculation processing based on the gathered data from the different sensors.

Table 1. Threshold Value Set for the System

Water Level (m)	Alert Level	SMS Notification Time of Delivery
26-29m	BLUE	None
30m	YELLOW	10 minute interval
31-33m	ORANGE	2 minute interval
33 and above	RED	1 minute interval

### C. Predictive Model

This study developed two predictive models. The first model is generated using collected dataset from different stations from Pinacanauan River Rain Gauge measurement from 2016 to 2022. The dataset is subjected for data preprocessing using Python and Waikato Environment for Knowledge Analysis (Weka) for further processing on predictive model. The dataset contains time, rain gauge reading and average rainfall computation on a nine-hour reading daily throughout the year. The actual attribute to predict is the average rainfall based on the entity parameters. On this dataset, the predictive model used classifier function multilayer perceptron algorithm where it consists of input layer, hidden layer and output layer as shown in figure 3. The process is executed as Training Set test option linear and sigmoid nodes are considered which consisted of Inputs, Weights, and Threshold. These are used to calculate Correctly Classified Instances, Kappa statistic (ks), Mean Absolute Error(mae), Root Mean Squared Error(rmse), Relative absolute error(rae), and Root relative squared error(rrse). The developed predictive model in the given dataset is used as enforcement on possible flood detection and early warning in given period of the year.

## IoT Based Flood Detection, Alarm and Monitoring System Using Multilayer Perceptron and Regression

The second model used multiple linear regression algorithm represented by the mathematical equation in (1). The predicted flood level is the only variable dependent to precipitation rate, flow rate, and current flood level. In this case, precipitation rate is calculated using rain gauge during rainfall in millimetres per hour (mm/hr). The river flow rate is the volume of water flows in a given location of the river over period measured in Liter per hour while the current flood level pertains to the current height of flood measured in feet. Given all the data gathered from the sensors, the system will evaluate the data to predict the flood

$$y = B_0 + B_1x_1 + B_2x_2 + e \quad (1)$$

Where:

$y$  = predicted flood level

$B_0$  = precipitation rate

$B_1$  = flow rate

$B_2$  = current flood level

$e$  = error term

status for the next hour. The system checks the processed data if it meets the threshold for an imminent flood. When the threshold is met, the system will send early notification to the community using their registered number to the system. Otherwise, the system considered the data value insignificant, and the preliminary function of the system will be re-executed. Once the three independent variables are obtained, the predictive model implemented to the system is executed and automatically computed.

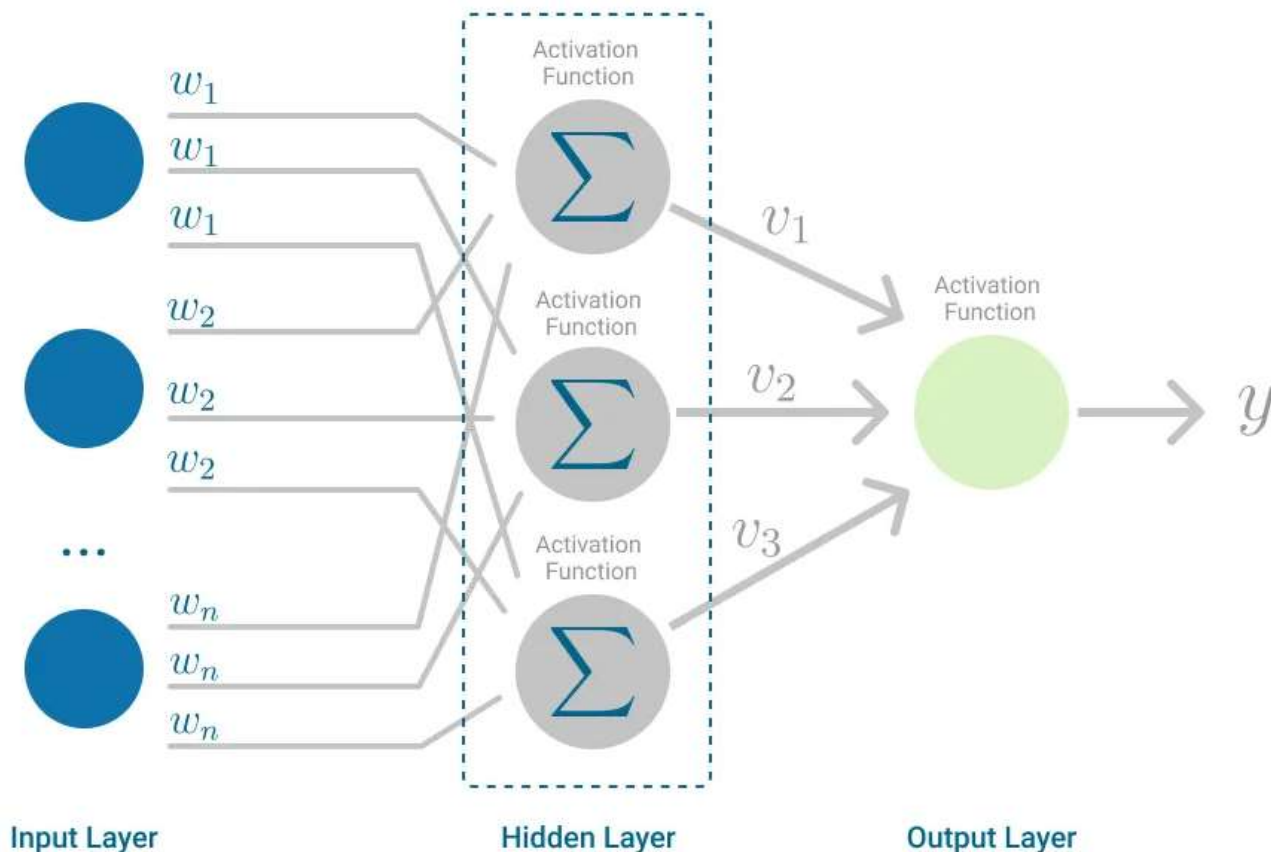


Figure 3: Multi-Layer Perceptron (MLP) (Bento, 2021)

### D. SMS Notification

The SMS Notification function of the system can send early warning messages to the nearby community. It sends an information to people on the predictive scenario that might happen on the current month of the year based on the calculated dataset. The system sends Water Level or the flood level, flows rate, precipitation, and the warning. This feature of the system allows nearby community to evacuate before the danger comes. However, before the notification arrives to the community, a five-hour interval of function loop of the system is executing, and the authority only receives the information. When a possible flood is coming, the system is automatically sending the information to the nearby settlers. The automatic sending of information to the community is continuous especially when there is incoming typhoon and heavy rainfall. There will be intervals of sending



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information if there are weather disturbances near to the location based on Philippine Atmospheric Geophysical & Astronomical Services Administration (PAGASA). If the warning signal turns to yellow, there will be an earlier delivery of information. Table 1 shows the codes for an early warning signal.

**Table 2. SMS Notification Flood Warning Status**

Status Level (Codes)	Flood Warning Status	Notification Time Delivery
BLUE	No occurrence of flood.	None unless there's a Weather Disturbances
YELLOW	Approximately ½ foot (Ground to Ankle). Prepare for Evacuation.	10-minute interval
ORANGE	Approximately 2ft. (Ground to Knee). Evacuate.	2-minute interval
RED	Approximately 3ft. and beyond (Ground to above waist). Evacuate.	1-minute interval

### III. EXPERIMENT & RESULT

This study is conducted at Malalam, City of Ilagan, Isabela, and one of the high-risk flood zones located alongside the Cagayan River. The Malalam bridge served as water level measurements as shown in figure 4.



**Figure 4. Malalam Bridge Water Level Measurement**

Historical Data is used for the first predictive model of this study. Dataset is gathered from the Rain Gauge meter of different bridge stations built along the Cagayan River. This dataset is used to develop a predictive model in determining possible flood or river situation in a specific period of the year. The dataset is preprocessed using Python and mined through Weka tool. Multi-layer perceptron classification algorithm is used to further examine the data and create a predictive model. All attributes are visualized and seen the distribution of data from different attributes as shown in figure 5. The FloodPrediction status indicated values of BLUE as much as other color codes which implied that the area is more likely to experience less floods over six year.

## lot Based Flood Detection, Alarm and Monitoring System Using Multilayer Perceptron and Regression

However, there were times where the city experienced massive floodings throughout the area and usually occurs during “ber” months. Figure 6 shows the neural network of the processed dataset where the colors indicate the Flood Prediction. The developed model consisted of eight Sigmoid Nodes and four Classes. These classes are the classification of flood prediction status. Figure 6 and 7 on the other hand, described the evaluation of the model. As per summary, the model is 99% correctly classified and only has 0.0029 mae which indicates that the model is accepted for prediction purposes.

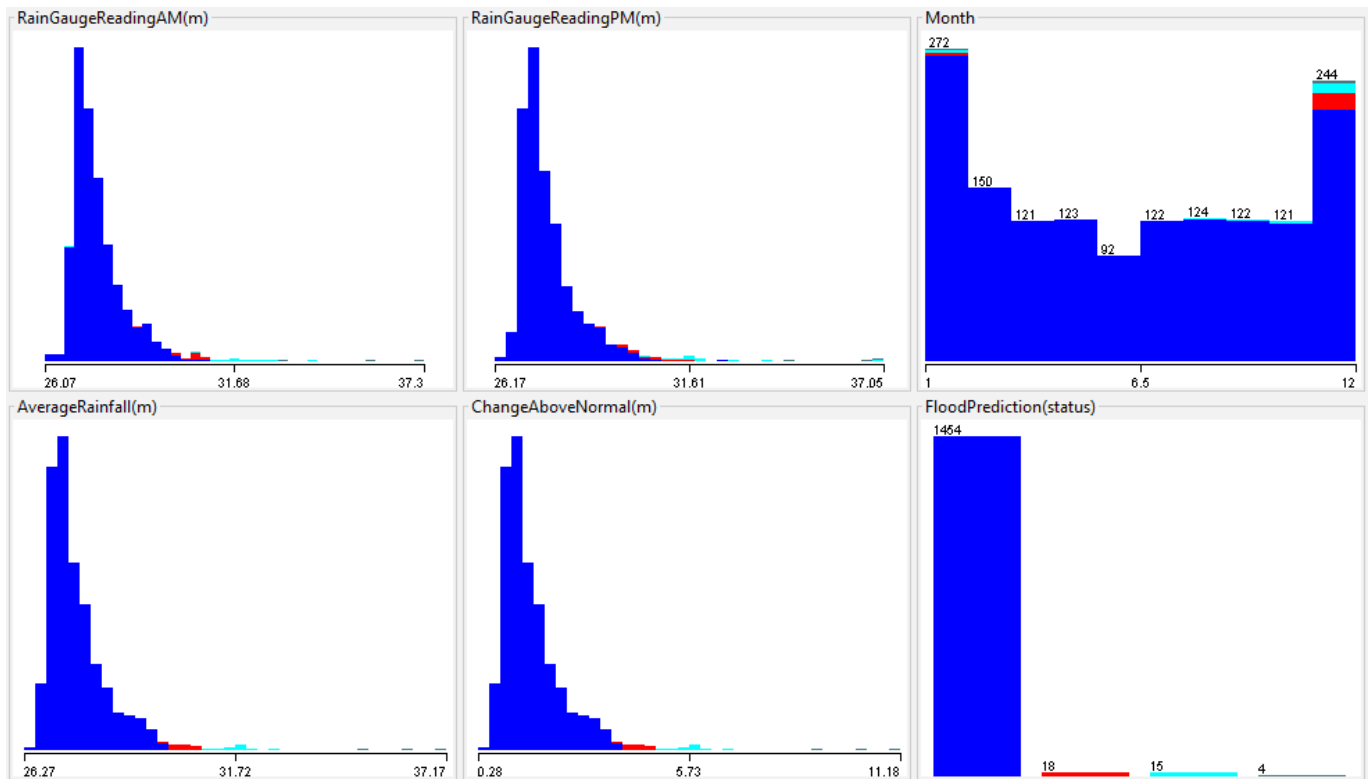


Figure 5. Attributes Visualization of the Dataset

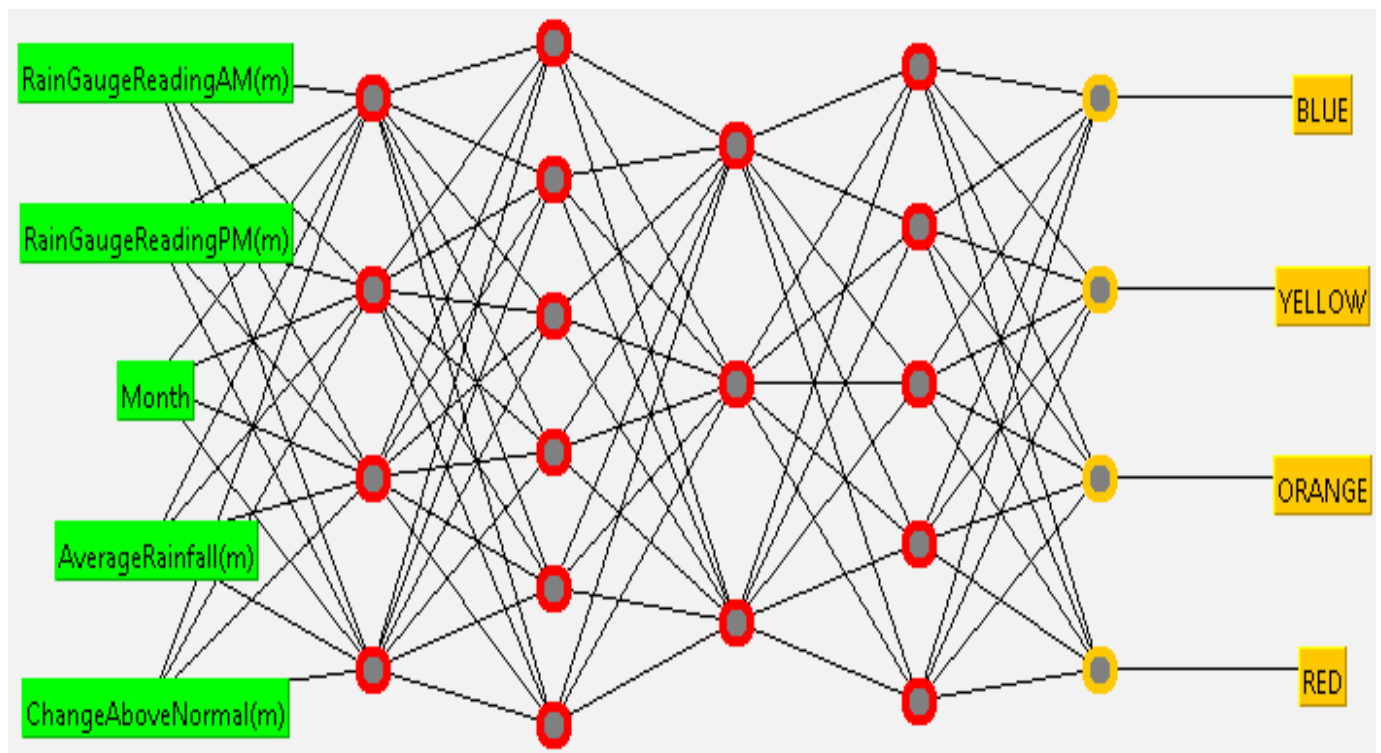


Figure 6. Multi-Layer Perceptron Neural Network (Pinacauan Dataset)

Correctly Classified Instances	1487	99.7317 %
Incorrectly Classified Instances	4	0.2683 %
Kappa statistic	0.945	
Mean absolute error	0.0029	
Root mean squared error	0.0332	
Relative absolute error	11.365 %	
Root relative squared error	30.0786 %	

Figure 7. Summary of Multilayer Perceptron Dataset Evaluation

a	b	c	d	<-- classified as
1454	0	0	0	a = BLUE
0	18	0	0	b = YELLOW
0	0	15	0	c = ORANGE
0	0	4	0	d = RED

Figure 8. Confusion Matrix on Multi Layer Perceptron Dataset Evaluation

The second model developed for this study is a real-time prediction from the developed IoT based technology. Figure 9 displays the collected data from rain gauge cumulative rainfall for two-day records. Figure 10 shows the river flow rate or the flow fluctuation and figure 10 depicts the water level reading. Statistically based on calculations, the regression plot of the flood level and precipitation rate as shown in Figure 11 depicted a coefficient of determination equal to 0.8932 or 89%. This further suggests that there is a variation of flood caused by rainfall. Figure 12 shows the regression plot of cumulative rainfall and flow rate. As per calculations, the figure implies that when there is a long and heavy rainfall, a flow rate of the river also increases. This supports mathematically by coefficient of determination or equal to 0.926 or 92%. Flood level and flow rate as shown in figure 13, calculated 87.89% that implies flow rate does have correlation with the rise of water level. The result of Figure 11 and 13, it can be determined that water or flood level can be predicted based on the changes in the precipitation rate since its coefficient of determination is higher.

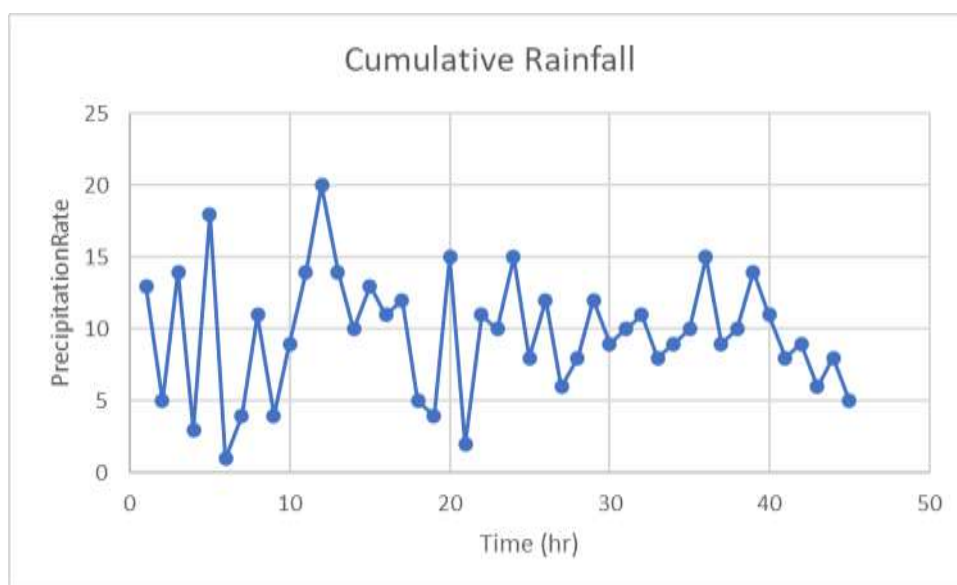


Figure 9. Precipitation Rate Reading

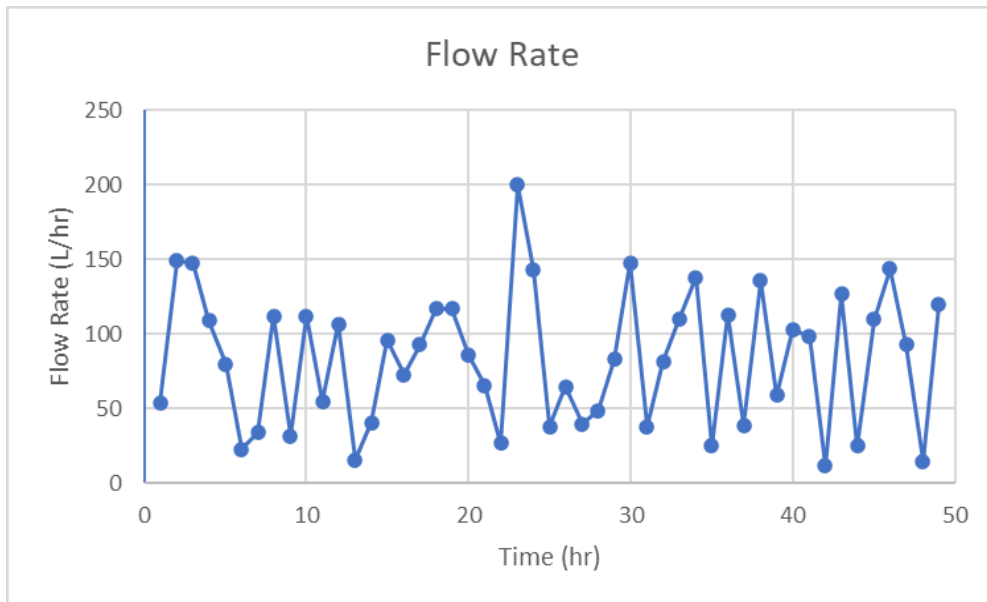


Figure 10. Flow Rate Reading

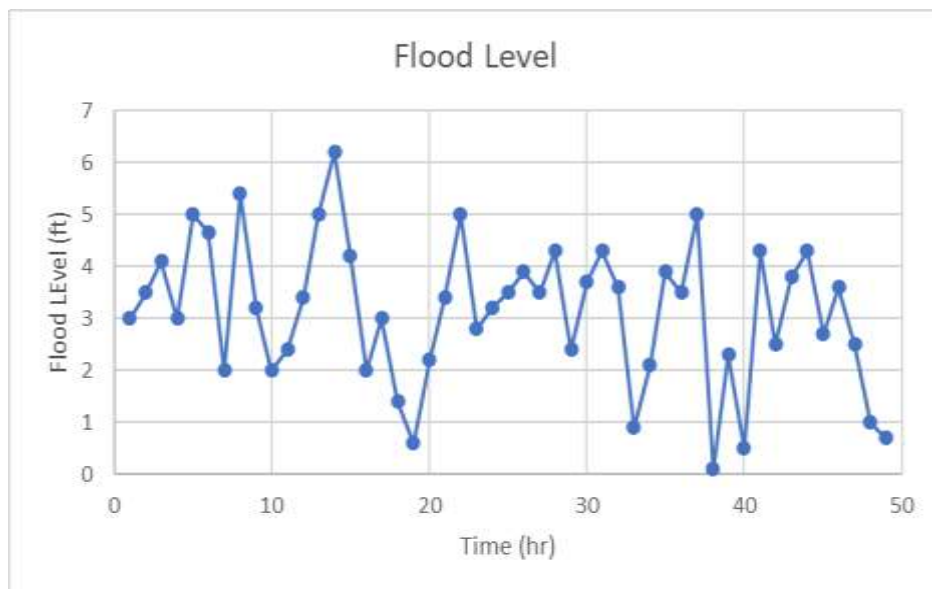


Figure 10. Water Level Reading

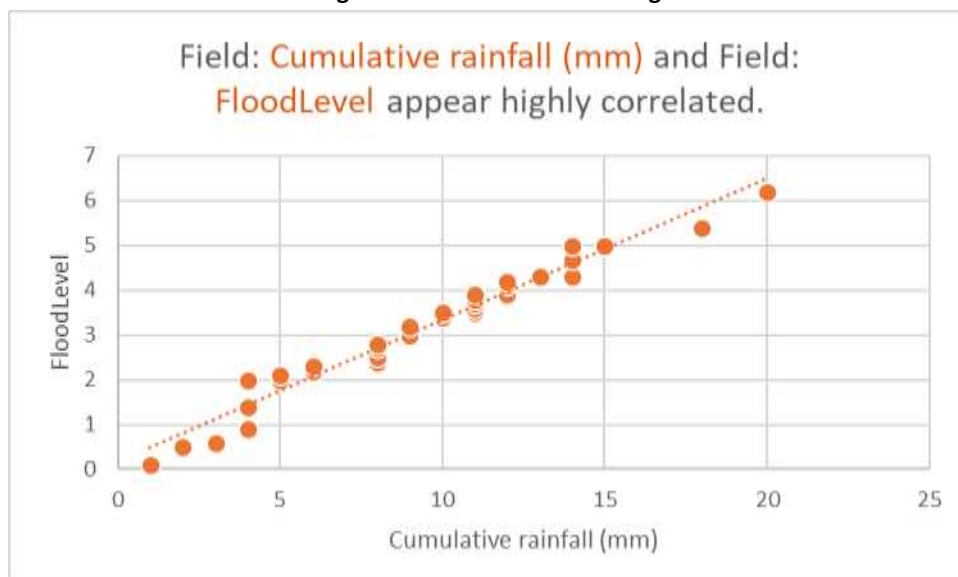


Figure 11. Regression plot of Precipitation Rate and Water Level

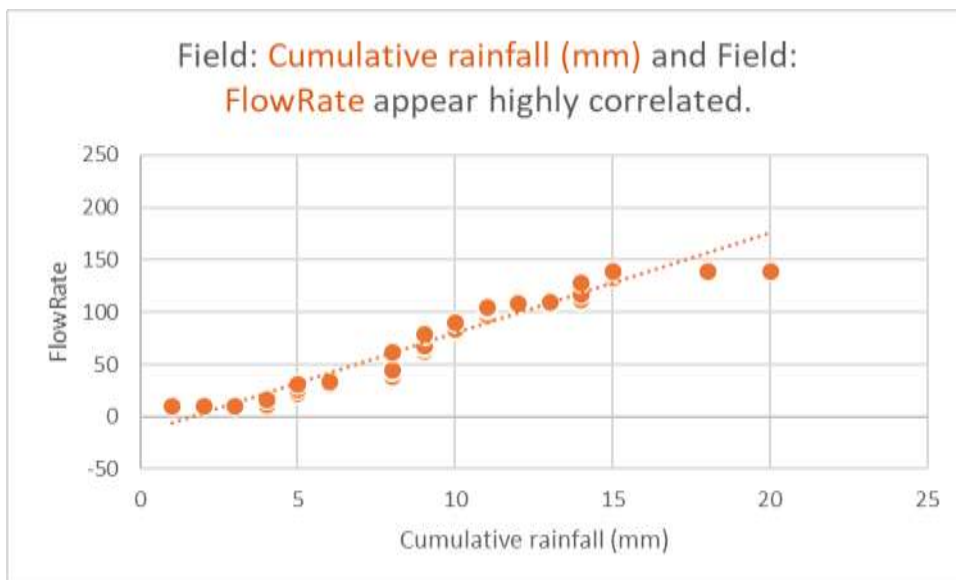


Figure 12. Regression plot of Precipitation Rate and Flow Rate

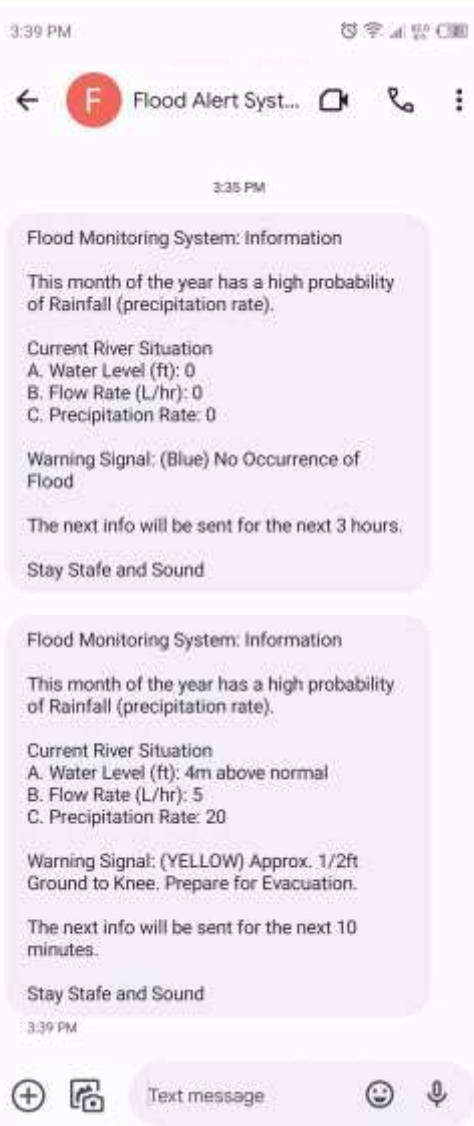


Figure 14. Sample SMS Notification of the System

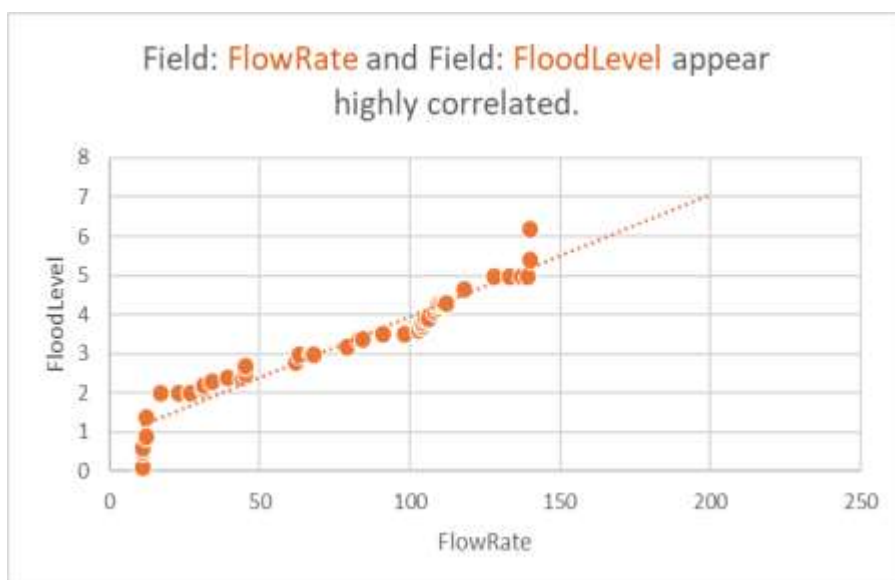


Figure 13. Regression plot of Flow Rate and Flood Level

The Flood Alert system is used as a receiving contact of the SMS Notification Function of the project. The message contains the Name of the system and its general prediction for the current month which indicates a probability of rainfall or floods during the time period. Also, the message significantly highlights the current river situation using the following parameters: A. Water Level (ft), Flow Rate (L/hr), and Precipitation Rate (mm/hr). These parameters are used to indicate the warning signal of the current readings. Color Codes are used with designated warning status as indicated in table 1. The system also let the receiver wait for further readings and indication on the next alert message.

IV. CONCLUSION

After extensive testing and data collection, it has been determined that the devices used in the system are effective and produce dependable outcomes. The Pinacanauan Dataset provides historical data which underwent data mining techniques under multi layer perceptron classification algorithm and it provides significant value as a predictive model implemented into the system. The IoT-

## IoT Based Flood Detection, Alarm and Monitoring System Using Multilayer Perceptron and Regression

based technology plays a useful and important role in detecting and monitoring floods in the City of Ilagan. With the different sensor devices attached to the microcontroller, data are sent and subjected for further processing for appropriate community notification. Other than the historical data taken from different stations of the river, data are also collected to the developed system and further subjects for processing. Functions of the project are satisfied such as the detection of a flood using sensor devices (LiDAR for detecting flood level, rain gauge for measuring precipitation rate and flow rate in measuring the volume of river flow). The system is powered by Solar Panel which provides adequate amount of electrical energy. Lastly, the predictive calculation of the system is the most significant feature for it provides early warning dissemination to nearby community avoiding danger and possible loss of properties or lives..

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## Improving Student Discipline through the Practice of Appreciating Time Hadith



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**ABSTRACT:** This study aims to examine the increase in student discipline through the practice of understanding and practicing the hadith about respecting time. The research was conducted at the DDI al-Abrar Islamic Boarding School, Makassar as the research location. The research method used is qualitative with a phenomenological approach. Data was collected through interviews, observation, and documentation. The results of the research show that the application of Islamic values in the hadith about respecting time is carried out through six strategies. The six strategies have a significant role in increasing student discipline. Students who understand and apply the hadith become more disciplined in carrying out their obligations effectively and efficiently. The implication of this research is that the practice of understanding hadith about respecting time can be an effective solution in increasing student discipline. Methodologically, the strategies found can be tested on a larger and more diverse population of students. Can also combine the strategies found with other learning programs to obtain more optimal results. In addition, you can look for other additional strategies that can help improve the discipline of students.

**KEYWORDS:** Improving, Discipline, Hadith, Appreciating Time

### INTRODUCTION

Hadith is the second source of Islamic law after the Koran,<sup>1</sup> through the hadiths, Muslims find the Prophet's guidance for human life. One of them is the hadith about time management.<sup>2</sup> Hadith informs that time is very valuable in one's life. Time is likened to the most valuable gold and wealth. People who are good at appreciating time are the luckiest people. Conversely, people who do not use their time properly are the ones who lose the most<sup>3</sup>. Time walked on and never came back for good. <sup>4</sup> Therefore, the Prophet recommended to organize and make the best use of time. In Islam, there are three times for humans, namely time for work, time for worship and time for rest. These three times must be utilized as well as possible in order to bring benefits to life. Thus managing time properly will make life more productive, healthy and happy. However, there are still many people who are unable to manage their time properly. As a result, many people have lost the opportunity to make achievements. For example, not a few students wasted their time resulting in educational failure. Students who behave like that are not only bad for themselves but also for others.<sup>5</sup> That means, not managing your time well will result in a lot of distractions. For example, hindering

<sup>1</sup>Moath Alnaief and Kotb Rissouni, "A Critical Analysis of the Claim That Absolute Juristic Interpretation (Ijtihād) Has Ended," *Journal of Islamic Thought and Civilization* 12, no. 2 (October 11, 2022): 28–40, <https://journals.umd.edu.pk/index.php/JITC/article/view/2593>.

<sup>2</sup>Mohd Al Adib Samuri et al., "Hadith of Aisha's Marriage to Prophet Muhammad: An Islamic Discourse on Child Marriage," *International Journal of Islamic Thought* 6 (June 1, 2022): 93–105, <http://www.ukm.my/ijit/wp-content/uploads/2022/06/Mohd-Al-Adib-IJIT-21-June-2021-229.pdf>.

<sup>3</sup>Amal Alqahtani, Heba Kurdi, and Majed Abdulghani, "HadithTrust: Trust Management Approach Inspired by Hadith Science for Peer-to-Peer Platforms," *Electronics* 10, no. 12 (June 16, 2021): 1442, <https://www.mdpi.com/2079-9292/10/12/1442>.

<sup>4</sup>Gemma Rogers et al., "The Experiences of Mothers of Children and Young People with Intellectual Disabilities during the First COVID-19 Lockdown Period," *Journal of Applied Research in Intellectual Disabilities* 34, no. 6 (November 23, 2021): 1421–1430, <https://onlinelibrary.wiley.com/doi/10.1111/jar.12884>.

<sup>5</sup>Muhammad Asif and Fakhir Abdul Aziz, "AL-SHAYKH MAIMOEN ZUBAIR WA AFKĀRUH 'AN AL-ISLĀM WA AL-WAṬĀNIYAH WA AL-TASĀMUH FĪ INDŪNĪSIYĀ," *JOURNAL OF INDONESIAN ISLAM* 15, no. 1 (June 1, 2021): 223, <http://jiis.uinsby.ac.id/index.php/JIIS/article/view/2001>.

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work progress, disrupting relationships with work partners, and even disrupting health,<sup>6</sup> Therefore, the inability to manage and use time properly will result in great losses.

In connection with the conditions above, several educational studies have found ways to improve discipline. First, design a strict system of rules and sanctions. Second, using positive coaching methods that are in accordance with the conditions of students. Third, build good relationships and mutual trust between teachers and students. Fourth, provide an understanding of responsibility and self-discipline. Fifth, developing an effective and participatory classroom management program. Sixth, creating a safe and comfortable learning environment. Seventh, involving and empowering students in the learning process, and eighth using innovative and fun teaching techniques,<sup>7</sup> All of the research results are in the form of recommendations to improve student discipline. Discipline in Islamic boarding schools is applied based on the understanding and practice of hadith,<sup>8</sup> Islamic boarding schools have strong traditions and culture in understanding and practicing hadith,<sup>9</sup> Teachers at Islamic boarding schools are known for their ability to teach hadith and guide students. The teacher pays attention to the time and arranges the study schedule wisely. Santri are taught to make the best use of time for study, worship, and activities.<sup>10</sup> Santri are given a good understanding that time is the most important asset in human life. Hadith teaches how to use time wisely and productively. Understanding and practicing the hadith about respecting time forms the character and self-discipline of the santri. Thus, the practice of the hadith about respecting time is very important for increasing the discipline of the santri.

This study examines how understanding and applying the values contained in the hadith about respecting time can help improve student discipline. The research context at DDI Al-Abrar Islamic Boarding School Makassar. Data was collected through observation, in-depth interviews, and literature studies between 2019-2023. The practice of the hadith about respecting time has an important role in increasing the discipline of the santri. In this case the teacher plays a role in helping students understand and practice the hadith about respecting time. Santri who understand and practice the hadith about respecting time have an orderly and disciplined lifestyle. Islamic boarding schools have a culture of practicing hadith about respecting time and having students who are more disciplined and successful in learning.<sup>11</sup> This research suggests that the practice of hadith about respecting time should be applied and developed as a strategy to improve the discipline of students in Islamic boarding schools.

## LITERATURE REVIEW

### Time Management in Hadith

Management is a process that involves several functions to ensure that organizational goals are achieved effectively and efficiently.<sup>12</sup> The management functions are planning, organizing, directing, and controlling.<sup>13</sup> Planning is the first stage in the management function, which aims to determine objectives and strategies to achieve targeted results. This involves identifying long term and short term goals. Selection of the best method to achieve the goal is a major consideration. Organizing is the second stage in the management function. The goal is to organize available resources to achieve predetermined goals. This involves managing staff, assets and information to ensure that these tasks are carried out efficiently. Direction is the third stage in the management function, which aims to motivate, lead, cooperate with employees, to achieve organizational goals. This involves providing direction and ensuring that staff understand their respective duties and responsibilities.<sup>14</sup>

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<sup>6</sup>Ilona Kickbusch et al., "The Lancet and Financial Times Commission on Governing Health Futures 2030: Growing up in a Digital World," *The Lancet* 398, no. 10312 (November 2021): 1727–1776, <https://linkinghub.elsevier.com/retrieve/pii/S0140673621018249>.

<sup>7</sup>Agustinus Hermino and Imron Arifin, "Contextual Character Education for Students in the Senior High School," *European Journal of Educational Research* 9, no. 3 (July 15, 2020): 1009–1023, <https://eu-jer.com/contextual-character-education-for-students-in-the-senior-high-school>.

<sup>8</sup>Ismail Ismail et al., "The Application of Social Marketing to Change Smoking Behavior of Students in Traditional Islamic Boarding Schools in Aceh," *Open Access Macedonian Journal of Medical Sciences* 8 (2020): 606–610.

<sup>9</sup>Bambang Arif Rahman, "Islamic Revival and Cultural Diversity; Pesantren's Configuration in Contemporary Aceh, Indonesia," *Indonesian Journal of Islam and Muslim Societies* 12, no. 1 (June 4, 2022): 201–229, <https://ijims.iainsalatiga.ac.id/index.php/ijims/article/view/5703>.

<sup>10</sup>Asif and Abdul Azis, "Al-Shaykh Maimoen Zubair Wa Afkâruh 'An Al-Islâm Wa Al-Waṭāniyah Wa Al-Tasâmuh Fī Indūnīsiyâ.

<sup>11</sup>Imam Mujahid, "Islamic Orthodoxy-Based Character Education: Creating Moderate Muslim in a Modern Pesantren in Indonesia," *Indonesian Journal of Islam and Muslim Societies* 11, no. 2 (2021): 185–212.

<sup>12</sup>Long Lam et al., "The Relation among Organizational Culture, Knowledge Management, and Innovation Capability: Its Implication for Open Innovation," *Journal of Open Innovation: Technology, Market, and Complexity* 7, no. 1 (February 20, 2021): 66, <https://www.mdpi.com/2199-8531/7/1/66>.

<sup>13</sup>Syafwan Rozi, Abdul R. Ritonga, and Januar Januar, "'Local Community-Based Disaster Management' The Transformation of Religious and Local Wisdom Values in Preparation to Deal with Natural Hazards in West Sumatra, Indonesia," *Jambá - Journal of Disaster Risk Studies* 13, no. 1 (August 31, 2021): 1–7, <http://www.jamba.org.za/index.php/JAMBA/article/view/1020>.

<sup>14</sup>Rohmatun Isnaini, Farida Hanum, and Lantip Prasojo, "Quality Management Development through Gender Equality Based Leadership in Nahdlatul Ulama Universities," *The Qualitative Report* 26, no. 11 (2021): 3374–3391, <https://doi.org/10.46743/2160-3715/2021.4877>.



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Supervision is the final stage in the management function. Supervision aims to monitor, evaluate organizational performance and ensure that objectives are achieved.<sup>15</sup> This involves monitoring performance and results, then comparing them to objectives. The next step is to take action where necessary to ensure that the organization is functioning properly. The management function contributes to the success and sustainability of an organization.<sup>16</sup> It is important to ensure that managers understand and implement the proper management functions. The goal is to ensure that the organization functions properly, so that it can achieve the expected goals.<sup>17</sup> In the era of globalization and increasingly fierce competition, an effective management function is essential to ensure the success and sustainability of an organization.<sup>18</sup> In this case, managers must ensure that these management functions work synergistically to achieve organizational goals. In the context of education, the function of management is very important. Because the management function contributes to the success and sustainability of an organization.

To ensure the management function runs well, time management is the main determinant.<sup>19</sup> That is why the Prophet Muhammad emphasized the importance of respecting time as recorded in the hadith records. The hadith was conveyed by his friends and passed on in sequence from generation to generation.<sup>20</sup> Hadith has an important role in Islamic teachings as the second source of law after the Qur'an. In Muslim society, hadith is believed to be a life guide that explains how to carry out Islamic teachings in everyday life. The Hadith contains a lot of advice, guidance and life guidance that can be a guide for Muslims in living life. Therefore, hadith is a guarantee of the survival of Islamic teachings.<sup>21</sup> Without hadith, Islamic teachings will not be trusted and cannot be practiced properly. The hadiths provide clear explanations of what to do and what to avoid in daily life.<sup>22</sup> Hadith guides Muslims to live according to Islamic teachings. Hadith also helps maintain Islamic traditions and culture, because they contain records of the behavior and actions of the Prophet Muhammad as an example for Muslims.

In the context of education, teachers need strategies so that the hadiths taught are understood and practiced well by students.<sup>23</sup> Strategy is a plan or action implemented to achieve a certain goal. Strategy can be used in various fields, such as business, military, politics, and others. Strategy includes a series of steps that are organized and directed.<sup>24</sup> Strategy aims to solve problems and achieve set goals. The strategy also considers the current situation and conditions as well as the factors that might influence success in achieving the expected goals. These factors, for example, are not focused and are late completing assignments.<sup>25</sup> Thus the teacher's strategy determines students understand and practice the hadith quickly. In terms of character formation, teachers must choose an effective strategy to improve discipline.<sup>26</sup> This method involves teachers and parents to work together in helping students build disciplinary character. Teachers can do this by providing coaching and guidance to students.

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<sup>15</sup>Negussie Boti Sidamo et al., "Exploring Barriers to Effective Implementation of Public Health Measures for Prevention and Control of COVID-19 Pandemic in Gamo Zone of Southern Ethiopia: Using a Modified Tanahashi Model," *Risk Management and Healthcare Policy* Volume 14 (March 2021): 1219–1232, <https://www.dovepress.com/exploring-barriers-to-effective-implementation-of-public-health-measures-peer-reviewed-article-RMHP>

<sup>16</sup>Meaghann S. Weaver and Lori Wiener, "Applying Palliative Care Principles to Communicate With Children About COVID-19," *Journal of Pain and Symptom Management* 60, no. 1 (July 2020): e8–e11, <https://linkinghub.elsevier.com/retrieve/pii/S0885392420301718>.

<sup>17</sup>Farhin Islam et al., "Occupational Safety Practice among Metal Workers in Bangladesh: A Community-Level Study," *Journal of Occupational Medicine and Toxicology* 17, no. 1 (2022): 1–10, <https://doi.org/10.1186/s12995-022-00366-y>.

<sup>18</sup>Sufriadi Muhammad Yusuf et al., "Contributing Factors in Academic Ethics Practices among Lecturers of Islamic Higher Education," *Universal Journal of Educational Research* 8, no. 5 (May 2020): 2123–2128, [http://www.hrpub.org/journals/article\\_info.php?aid=9177](http://www.hrpub.org/journals/article_info.php?aid=9177).

<sup>19</sup>Jingqi Zhu and Rick Delbridge, "The Management of Second-Generation Migrant Workers in China: A Case Study of Centrifugal Paternalism," *Human Relations* 75, no. 12 (December 30, 2022): 2272–2299, <http://journals.sagepub.com/doi/10.1177/00187267211032948>

<sup>20</sup>Ines Peta, "Ahmad Amin's Rationalist Approach to the Qur'an and Sunnah," *Religions* 13, no. 3 (March 9, 2022): 234, <https://www.mdpi.com/2077-1444/13/3/234>.

<sup>21</sup>Alqahtani, Kurdi, and Abdulghani, "HadithTrust: Trust Management Approach Inspired by Hadith Science for Peer-to-Peer Platforms.

<sup>22</sup>Fuad Thohari et al., "The Implications of Understanding Contextual Hadith on Religious Radicalism (Case Study of Darus-Sunnah International Institute for Hadith Sciences)," *Samarah: Jurnal Hukum Keluarga dan Hukum Islam* 5, no. 2 (December 26, 2021): 710, <https://www.jurnal.ar-raniry.ac.id/index.php/samarah/article/view/11124>.

<sup>23</sup>Ali Tared Aldossari and Munirah Saud Alhamam, "Effectiveness of the Flipped Classroom Strategy in Teaching Qur'an Recitation Skills and Attitude Towards It among First Grade Students in Saudi Arabia," *International Journal of Learning, Teaching and Educational Research* 20, no. 11 (November 30, 2021): 215–236, <http://ijlter.org/index.php/ijlter/article/view/4474/pdf>.

<sup>24</sup>Hasrul Hashim and Mohd Azul Mohamad Salleh, "Communication Strategy Analysis of COVID-19 Pandemic's Public Service Announcement (PSA) Production," *Jurnal Komunikasi: Malaysian Journal of Communication* 37, no. 4 (December 30, 2021): 88–103, <https://ejournal.ukm.my/mjc/article/view/51880>.

<sup>25</sup>Farida Kurniawati and Ade Siti Mariyam, "The Role of Teachers' Teaching Strategies on Peer Acceptance: Study in Inclusive Madrasas in Indonesia," *International Journal of Special Education (IJSE)* 37, no. 2 (November 11, 2022): 22–32, <https://internationalsped.com/ijse/article/view/276>.

<sup>26</sup>Leejin Choi and Sunjoo Chung, "Navigating Online Language Teaching in Uncertain Times: Challenges and Strategies of EFL Educators in Creating a Sustainable Technology-Mediated Language Learning Environment," *Sustainability* 13, no. 14 (July 9, 2021): 7664, <https://www.mdpi.com/2071-1050/13/14/7664>.

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Teach positive values, and set a good example. Parents can also help by strengthening a positive environment at home in order to help students understand the importance of discipline.<sup>27</sup> The strategy of implementing the reward and punishment system is also an effective way to improve the discipline of students.<sup>28</sup> In this case, the teacher can give gifts or rewards to students who are disciplined and fulfill their assignments well. Meanwhile, the teacher can also provide sanctions or punishment for students who break the rules and are not disciplined. This strategy helps students to understand the importance of discipline and motivates students to improve their behavior.

### Habituation Strategy and Routine Exercise.

The strategy of habituation and routine training is another way to improve the discipline of students. In this case, the teacher can accustom students to do good and disciplined things.<sup>29</sup> For example, providing regular exercises and regular assignments. This strategy helps the santri to build good habits and discipline, so that the discipline of the santri will increase gradually. Teachers can also help students to memorize the importance of discipline by providing understanding and good examples, for example in respecting and utilizing time.

### Appreciate time

Valuing time is a concept that emphasizes the importance of using time efficiently and effectively.<sup>30</sup> Valuing time is a form of self-discipline and shows that one understands the values associated with time. Experts state that respecting time is a habit and value that can increase one's productivity and quality of life. Valuing other people's time also shows professionalism and respect.<sup>31</sup> Prioritizing important tasks and avoiding time-wasting habits can improve efficiency and work output. Knowing your deadlines and managing your time well can help you reach your goals and meet deadlines. Appreciating your own time and getting enough rest can maintain mental health and increase productivity.<sup>32</sup> Keeping to a schedule and doing tasks on time can help avoid stress and workload. Setting priorities, making daily plans, avoiding interruptions, and managing stress are all methods of increasing discipline.<sup>33</sup> Each individual has different needs and preferences in managing time, so it is important to determine the most suitable strategy for each individual. Through the implementation of the right strategies, individuals can help themselves to increase the value of time while increasing productivity and quality of life.<sup>34</sup> Establishing a strategy helps schedule and prioritize important tasks, making it easier to manage time well. Strategy also helps limit distractions and focus on important goals and activities thereby reducing wasted time.<sup>35</sup> Defining strategy and monitoring progress can help maintain consistency while strengthening time-honored habits.

### Strategy to Improve Santri Discipline

In order to improve the discipline of students, the DDI al-Abrar Makassar Islamic Boarding School is taking strategic steps. First, design clear rules and firm sanctions. Rules and strict sanctions serve as the basis for educating the discipline of students. This was emphasized by Abdurrahman Zain that all Islamic boarding schools in Indonesia have strict rules and sanctions. The rules are made as a reference for fostering the discipline of students. The rules are the first to be conveyed to prospective students will register

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<sup>27</sup>Jamilah Jamal and Hassan Abu Bakar, "The Influence of Charismatic Leadership Communication Towards the Credibility of Public Organisation in Malaysia," *Jurnal Komunikasi: Malaysian Journal of Communication* 37, no. 4 (December 30, 2021): 405–426, <https://ejournal.ukm.my/mjc/article/view/53048>.

<sup>28</sup>Deborah M. Powell, Joshua S. Bourdage, and Silvia Bonaccio, "Shake and Fake: The Role of Interview Anxiety in Deceptive Impression Management," *Journal of Business and Psychology* 36, no. 5 (October 7, 2021): 829–840, <https://link.springer.com/10.1007/s10869-020-09708-1>.

<sup>29</sup>Joko Nurkamto et al., "Teachers' Beliefs and Practices in Teaching Reading at Islamic Secondary Schools in Indonesia," *Indonesian Journal of Applied Linguistics* 10, no. 3 (January 31, 2021): 667–676, <https://ejournal.upi.edu/index.php/IJAL/article/view/31753>.

<sup>30</sup>Véronique Turcotte et al., "Experience and Appreciation of Health Care Teams Regarding a New Model of Pharmaceutical Care in Long-Term Care Settings," *Canadian Journal on Aging / La Revue canadienne du vieillissement* 41, no. 3 (September 8, 2022): 421–430, [https://www.cambridge.org/core/product/identifier/S0714980821000672/type/journal\\_article](https://www.cambridge.org/core/product/identifier/S0714980821000672/type/journal_article).

<sup>31</sup>Abdurrohman Kasdi, "Reconstruction of Fiqh Nusantara: Developing the Ijtihad Methodology in Formulating Fiqh from Indonesian Perspective," *QJIS (Qudus International Journal of Islamic Studies)* 7, no. 2 (December 26, 2019): 239, <http://journal.stainkudus.ac.id/index.php/QJIS/article/view/4797>.

<sup>32</sup>Carmen L. Charlton et al., "How To Prepare for the Unexpected: A Public Health Laboratory Response," *Clinical Microbiology Reviews* 34, no. 3 (June 16, 2021), <https://journals.asm.org/doi/10.1128/CMR.00183-20>.

<sup>33</sup>Jade Williams and H. Robert Kolb, "Communication in Clinical Research: Uncertainty, Stress, and Emotional Labor," *Journal of Clinical and Translational Science* 6, no. 1 (November 8, 2022): e11, [https://www.cambridge.org/core/product/identifier/S2059866121008736/type/journal\\_article](https://www.cambridge.org/core/product/identifier/S2059866121008736/type/journal_article).

<sup>34</sup>Srinivasan Raj Samuel, Shashidhar Acharya, and Jeevika Chandrasekar Rao, "School Interventions–Based Prevention of Early-Childhood Caries among 3–5-Year-Old Children from Very Low Socioeconomic Status: Two-Year Randomized Trial," *Journal of Public Health Dentistry* 80, no. 1 (2020): 51–60.

<sup>35</sup>Kickbusch et al., "The Lancet and Financial Times Commission on Governing Health Futures 2030: Growing up in a Digital World."

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as a student at this Pondok. It is natural to provide clear and open rules of conduct for students, for example rules that must be obeyed. Likewise establishing fair and proportional sanctions for violations of the rules, such as warnings, fines, or actions to cancel the status of students. However, consistency is needed in applying sanctions for the same violation, to ensure fairness.<sup>36</sup> It should also provide clear procedures for applying sanctions, to ensure fairness and transparency.

### Rules and sanctions

Clear rules of conduct and strict sanctions can help increase accountability. In addition, rules and sanctions serve to ensure that students understand the responsibilities and consequences of their behavior. Fairly and consistently applied sanctions promote fairness and transparency, help build trust and ensure that the rule of law is applied evenly. Clear rules and sanctions also help to increase the motivation of students to behave properly and fulfill their responsibilities.<sup>37</sup> Strict rules and sanctions help establish discipline and ensure that students understand the boundaries and rules that must be followed.<sup>38</sup> In this way, strict rules and sanctions help build a safe, productive environment in which to learn and develop. However, even though the Islamic Boarding School has implemented strict rules and sanctions, not all students at the DDI al-Abrar Makassar Islamic Boarding School comply with the provisions of the order. There are still a small number of people who break the rules such as being undisciplined. Those who still commit disciplinary violations, of course, will receive sanctions. Muhammad Lubis said that there were no Islamic boarding schools that did not apply sanctions for those who violated discipline. Only the method and form of punishment is different. If here the punishment given is educational. For example, cleaning the bathroom, sweeping the classroom and memorizing verses of the Koran.

### METHOD

This research uses a type of literature, conducts a review of those related to time management, student discipline, and the practice of hadith respecting time. Data Collection: Through interviews and observation, collect information and perceptions from students, teachers and parents regarding time management and student discipline. The research instrument is the researcher himself, collecting data by observation, interviews, literature review. While the data analysis of the Miles and Huberman model is data reduction; analysis of data collected through techniques such as coding, memoing, and interpretation to find patterns and themes related to time management and student discipline, presenting verified data and validating findings through discussions with informants and providing interpretations that have a logical basis and are consistent with data and drawing conclusions.

### DISCUSSION

#### First; Discipline and Santri Santri

We confirmed Muhammad Lubis' statement above to a student named Arham Sanjaya. Arham said that the punishment most feared by students was memorizing verses from the Koran. Other punishments such as cleaning the bathroom and sweeping the yard are not too severe even if they get ridiculed by friends. Punishments that are educational in nature such as cleaning the bathroom can teach respect for the environment and strengthen the beliefs and motivation of students. The same is true for memorizing verses of the Koran. The verses they memorized as a result of carrying out the punishment will leave an imprint on the memory of the santri.<sup>39</sup> Giving punishments that are educational, the students will get more memorable learning and realize things that are wrong. Santri will be more careful and afraid of committing acts of violation again. Thus, providing educational punishment can help shape disciplinary behavior for students. Discipline is the main emphasis in Pondok Pesantren which aims to create a responsible generation. Muhammad Adlan gave a statement that the Vision and Mission of the DDI al-Abrar Makassar Islamic Boarding School is to form a generation that is disciplined, independent and has good morals. The key is in discipline. If the students are disciplined, God willing, they will be independent and have commendable morals. Muhammad Adlan's statement above we confirmed to one of the parents of the students named Hidayah (55 years). Hidayah said that I have five children. Muhammad Zaky is the last child. Thanks to guidance and prayers from the supervisor of the al-Abrar Islamic Boarding School, Zaky is now very disciplined, especially praying five times a day. If I had known about the coaching system at the al-Abrar Islamic Boarding School, then I would have put the four Zaky brothers in al-Abrar. Help students understand and carry out their duties so

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<sup>36</sup>Adang Kuswaya and Muhammad Ali, "The Concept of Peace in the Qur'an: A Socio-Thematic Analysis of Muslims' Contestation in Salatiga, Indonesia," *QJIS (Qudus International Journal of Islamic Studies)* 9, no. 1 (July 29, 2021): 73, <https://journal.iainkudus.ac.id/index.php/QJIS/article/view/10483>

<sup>37</sup>Jelena Titko et al., "Differences in Attitude to Corporate Social Responsibility among Generations," *Sustainability* 13, no. 19 (October 1, 2021): 10944, <https://www.mdpi.com/2071-1050/13/19/10944>.

<sup>38</sup>Choi and Chung, "Navigating Online Language Teaching in Uncertain Times: Challenges and Strategies of EFL Educators in Creating a Sustainable Technology-Mediated Language Learning Environment.

<sup>39</sup>Rahman, "Islamic Revival and Cultural Diversity; Pesantren's Configuration in Contemporary Aceh, Indonesia.

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that they can become responsible individuals. Discipline supports the formation of the personality of students as well as prepares them to live independently. Discipline also helps students to focus on the learning process so they can understand the material well.<sup>40</sup> Therefore, Islamic boarding schools emphasize discipline as part of understanding and respecting the norms and rules that apply, which are important things in social life. Increasing productivity is another benefit of discipline. Discipline helps students to increase productivity and efficiency.<sup>41</sup> In their daily activities, they can use their time and make good decisions.

### Second: personal discipline

In addition to the students, discipline is also applied to all boarding schools. To shape students to become disciplined individuals, the supervisor of the DDI al-Abrar Makassar Islamic Boarding School is required to provide a real example in terms of discipline. Abdurrahman Zain emphasized that at every meeting, the leadership often repeated warnings to all teachers and Pondok coaches that it was impossible for students to be disciplined if the teachers and undisciplined trainer. Teachers and coaches are obliged to set an example to their students. Setting a good example in the form of discipline will provide added value and positive influence for students. This concrete example will help students to develop a disciplined mindset and behavior.<sup>42</sup> By giving an example of good discipline, students will get used to doing good things. Setting an example of discipline in terms of respecting time will in itself teach students the importance of respecting time.<sup>43</sup> Providing real examples of discipline will also help students strengthen their belief and motivation in discipline.

### Third: modernizing learning hadith.

To facilitate the hadith learning process, the DDI al-Abrar Makassar Islamic Boarding School has used information and communication technology such as digital learning media. The main reason is to keep up with the times. Muh. Lubis said that we cannot avoid using digital learning media. Now all schools are required to utilize digital media in the learning process. Because schools that do not yet use digital media will be out of date and cannot follow the concept of independent learning as initiated by the minister of education. The real benefit that is felt after using digital media is to increase the effectiveness of learning.<sup>44</sup> Modern learning uses technology very effectively to help students understand and remember material. It can also increase students' learning motivation. Santri are more involved in learning because it interests them to pay attention to the lesson. In addition, digital learning media can facilitate students' understanding. This is because digital learning often uses images, animations, and visualizations to help students understand more difficult concepts. That is why, digital learning media can improve social and interactive skills. Because modern learning focuses on active participation and interaction between students.<sup>45</sup> The aim is to help them improve their social skills and ability to work in teams. Thus, modern learning using digital media prepares students to live and work in a digitalized world. Apart from using digital learning media, DDI al-Abrar Mikassar Islamic Boarding School has integrated various learning methods, such as group discussions, simulations, and role-playing. It has also focused on the understanding and application of hadith respecting time, not just memorizing.<sup>46</sup> Santri are encouraged to actively participate in hadith learning activities. It has even developed learning methods that are in accordance with the level of development and interest of the students.

### Fourth: The Santri Development Method

The DDI al-Abrar Makassar Islamic Boarding School uses coaching methods that are adapted to the interests and talents of the students. The main reason is to develop the basic potential possessed by students. Andi Taufiq Ekaputra said that one of the things that made Al-Abrar Islamic Boarding School increasingly known to the public was because of the fostering of the interests and talents of the students. For students who are talented at lecturing, they will be trained to become lecturers. For those who have the talent to cook, they will also be trained to become professional cooks. Likewise in other fields. The purpose of giving these awards is to motivate them to continue learning and developing. To support students to get achievements, Islamic Boarding

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<sup>40</sup>Lam et al., "The Relation among Organizational Culture, Knowledge Management, and Innovation Capability: Its Implication for Open Innovation."

<sup>41</sup>SAMURI et al., "Hadith of Aisha's Marriage to Prophet Muhammad: An Islamic Discourse on Child Marriage."

<sup>42</sup>Rogers et al., "The Experiences of Mothers of Children and Young People with Intellectual Disabilities during the First COVID-19 Lockdown Period."

<sup>43</sup>Lam et al., "The Relation among Organizational Culture, Knowledge Management, and Innovation Capability: Its Implication for Open Innovation."

<sup>44</sup>Hermiono and Arifin, "Contextual Character Education for Students in the Senior High School."

<sup>45</sup>Aldossari and Alhamam, "Effectiveness of the Flipped Classroom Strategy in Teaching Qur'an Recitation Skills and Attitude Towards It among First Grade Students in Saudi Arabia."

<sup>46</sup>Kurniawati and Siti Mariyam, "The Role of Teachers' Teaching Strategies on Peer Acceptance: Study in Inclusive Madrasas in Indonesia."

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Schools also try to create a safe and fun learning environment.<sup>47</sup> All of these aim to help students feel more compelled to participate and learn. Students will have high self-confidence. Confidence will provide opportunities for students to realize what they are interested in according to their talents. Islamic boarding schools also provide special support and guidance so that students excel. Providing individual support and guidance to students will help them overcome their problems.<sup>48</sup> Thus coaching in accordance with the interests and talents of students will help them feel more confident and able to develop more advanced.

### Fifth: the book of al-Nukbah al-Marḍīyyah as a reference

Making the book al-Nukbah al-Marḍīyyah a reference for character education. The reason is because the book contains many traditions related to discipline. Hadiths related to discipline are those that advocate respecting and managing time properly. Abdurrahman Zain said that there are five hadiths about respecting time in the book al-Nukbah al-Marḍīyyah, namely: First, what most people waste is health and opportunity. Second, take care of the five before the five come: your youth before your old age, your health before your illness, your wealth before your poverty, your free time before you are busy, and your life before your death. Third, actually that time is the most valuable gold and wealth. Fourth, whoever appreciates and makes good use of time, that person will be lucky. Fifth, people who don't value time are the ones who lose the most. Another reason why the DDI al-Abrar Makassar Islamic Boarding School made the Kitab al-Nukbah al-Marḍīyyah a reference to improve discipline was because the book was written by K.H. Abdurrahman Ambo Dalle, a charismatic cleric in South Sulawesi. The mandatory book is believed to be able to form a strong culture and tradition within the Islamic boarding school. Muh. Lubis emphasized that Kitab al-Nukbah al-Marḍīyyah emphasized the importance of discipline and even included strategies to improve discipline. This charismatic cleric's book contains moral values and Islamic teachings that have a strong influence on the behavior of students. The book combines Islamic teachings with the santri environment, making Islamic teachings easier to understand and implement. The book of charismatic scholars indeed functions to enrich the understanding of Islamic teachings for students. It can also help shape their spiritual identity. Even the book of charismatic scholars can unite students in understanding and applying teachings Islam. Thus a book that is compiled based on situations and needs, will make it easier to understand and carry out its contents.<sup>49</sup>

### Sixth: Obligation to Memorize Hadith.

In order to properly understand the disciplinary hadiths contained in the Kitab al-Nukbah al-Marḍīyyah, the DDI Al-Abrar Makassar Islamic Boarding School requires students to memorize hadiths about respecting time. These hadiths help students understand how Islam emphasizes the importance of respecting and making good use of time. Andi Taufiq Ekaputra said that all students at the DDI al-Abrar Makassar Islamic Boarding School were required to memorize the hadiths in the Kitab al-Nukbah al-Marḍīyyah. Memorizing and understanding hadiths about respecting time functions to shape the personality of the santri. Santri will grow into individuals who apply Islamic teachings so that they have good and responsible personalities.<sup>50</sup> Santri who understand and apply the teachings in the hadith can be an example for their surroundings. It can also help form a better community. Memorizing and practicing hadiths about respecting time will increase productivity and efficiency in daily activities.<sup>51</sup> More than that, memorizing, understanding and practicing hadith will strengthen their faith and piety. Thus, living and practicing the hadith respecting time will provide many benefits for the life of the santri.

## CONCLUSION

Qualitative analysis of the research findings above shows that the application of Islamic values in the hadith about respecting time at the DDI al-Abrar Makassar Islamic Boarding School was carried out through six strategies. The intended strategy is to make clear rules and strict sanctions, provide concrete examples, modernize hadith learning, make the book al-Nukbah al-Marḍīyyah a mandatory book, use methods according to the conditions of students and make it mandatory to memorize hadiths about respecting time. The six strategies have a significant role in improving the discipline of students. The implication of this research is that the practice of understanding hadith about respecting time can be an effective solution in increasing student discipline. Methodologically, the strategies found can be tested on a larger and more diverse population of students. Can also combine the strategies found with other learning programs to obtain more optimal results. In addition, you can look for other additional strategies that can help improve the discipline of students.

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<sup>47</sup>Jamal and Abu Bakar, "The Influence of Charismatic Leadership Communication Towards the Credibility of Public Organisation in Malaysia."

<sup>48</sup>Nurkamto et al., "Teachers' Beliefs and Practices in Teaching Reading at Islamic Secondary Schools in Indonesia."

<sup>49</sup>Asif and Abdul Azis, "AL-SHAYKH MAIMOEN ZUBAIR WA AFKĀRUH 'AN AL-ISLĀM WA AL-WAṬĀNIYAH WA AL-TASĀMUH FĪ INDŪNĪSIYĀ."

<sup>50</sup>Thohari et al., "The Implications of Understanding Contextual Hadith on Religious Radicalism (Case Study of Darus-Sunnah International Institute for Hadith Sciences)."

<sup>51</sup>Peta, "Aḥmad Amīn's Rationalist Approach to the Qur'ān and Sunnah."

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## A Brief Overview of the Sexual and Reproductive Health Awareness of Adolescents in Kerala



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### ABSTRACT:

**Background:** Adolescence is a critical and challenging period of life. Many adolescents today have patchy knowledge on SRH issues, which may lead to risky decision making concerning their health. Kerala, though one of the most literate states in India, is yet to implement comprehensive sex education.

**Objectives:** To list the sources of information and to study the awareness of adolescents on Sexual and Reproductive Health (SRH) issues among high school students in Kerala.

**Materials & Method:** A cross sectional study was conducted among 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> class students. Multistage random sampling was conducted and a sample size of 338 was achieved. Data was collected via a self-administered questionnaire and analyzed using SPSS Version-23. Results were explained in terms of frequency, percentage, mean and standard deviation. *Results:* Mean age of the study population was 14.2 ±0.88 years; most of them were females (58%) and followed Christian religion (49%); belonged to urban areas. The major sources of information for adolescents regarding SRH matters like private parts, type of touch, response to sexual assault and menstruation was their mother. When it comes to puberty changes, both mother and teachers were the major sources. Media was the most common source of information regarding Masturbation, sexual contact, pregnancy, contraception, STDs, and sexual abuse. There is wide disparity in the awareness of adolescents on major SRH issues.

**Conclusions:** India has the largest adolescent population, and it is a country known to have strict traditional values and age-old cultures and customs. Adequate information through parents may improve the knowledge on these issues. Age-appropriate comprehensive sexuality education must be incorporated into their curriculum effectively to improve their SRH.

**KEYWORDS:** Adolescents, Sex education, Sexual and Reproductive health (SRH), Source of Information

### INTRODUCTION

Adolescence is a critical and challenging time when children become independent individuals, form new relationships, develop social skills, and learn behaviors that endure throughout life.<sup>1</sup> 42% of the world population are young (10-24 years), of which 1.2 billion are adolescents (10-19 years).<sup>2</sup> Nearly one-third of India's population are young.<sup>3</sup> In this transition from childhood to adulthood, adolescents are exposed to injurious entities like tobacco, alcohol, violence, accidents, mental health issues as well as sexual health issues such as Sexually Transmitted Infections (STIs), sexual exploitation, teenage pregnancy etc.<sup>2</sup> 3000 adolescents die every day mainly due to preventable causes like accidents, complications of pregnancy, HIV/AIDS etc.<sup>2</sup> Significant proportions of young people experience risky sexual activity, do not receive appropriate care, and experience adverse reproductive health outcomes. Over 35 % of all reported HIV infections in India occur among young people.<sup>4</sup> Every year, approximately one out of every ten adolescents, even in developed countries, acquire STIs each year. More than one million teenagers become pregnant each year, out of which 60% are unwanted pregnancies.<sup>5</sup> Globally, about 1 in 10 girls under 20 years of age have been subjected to forced sexual acts at some point in their lives. 90 % of adolescent girls who reported exploitation say that their first abuser was someone known to them. Globally one in three adolescent girls aged 15–19 years had been the victims of emotional, physical, or sexual violence at some point.<sup>6</sup> In most instances, children do not report these to their parents due to inadequate communication skills or lack of healthy relationships. Today, there are more than one billion 10–19-year-olds, 70% of whom live in developing countries. They grow up in completely different circumstances than their parents, with better access to formal education, a growing need for technological skills such as internet skills, exposure to new ideas through media, telecommunications, etc. The

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Covid19 pandemic led to schools closing and use of online education further paved way for adolescents to become more freely familiar with mobile phones, internet, laptops, social media etc. Rates of sexual initiation during young adulthood are rising in many developing countries. As per the National Family Health Survey (NFHS) 5 report of India, women aged 20-24 years married before age 18 years was 23.3 % and those aged 15-19 years who were already mothers or pregnant at the time of the survey was 6.8 %. The adolescent fertility rate for women aged 15-19 years was 43.<sup>7</sup> According to the National Family Health Survey (NFHS) 5 report of Kerala, 2019-20, the total women aged 20-24 years married before age 18 years is 4.1 % in urban and 8.2% in rural areas. Women aged 15-19 years who were already mothers or pregnant at the time of the survey was 1.8 % in urban and 3.0% in rural areas.<sup>8</sup> The World Health Organizations' (WHO) mission on adolescent SRH is to contribute to a world in which its importance is understood, accepted, and supported.<sup>9</sup> It is a common practice in many schools to arrange sessions on menstrual hygiene, reproductive health etc., but such sessions remain open only to girl students. Kerala, though one of the most literate states in India, was not open towards the idea of sex education to students, apprehensive that it will promote immorality among the youth. The state is yet to implement sex education in syllabus. Parents who believe in the age-old fact that 'their children will gradually learn when the time comes', worsen this. The discomfort many parents feel about talking to their children about sexuality further impedes their ability to provide guidance.<sup>9,10</sup> Many adolescents today have patchy knowledge on SRH issues which most often comes from information shared by their same sex peers who may or may not be well informed. This can lead to misinformation, myths, making them vulnerable to unprotected sex, unwanted pregnancy, STDs, unsafe abortions etc. In the state of Kerala, dominating in both healthcare and literacy, it would be interesting to identify the awareness on SRH issues. This study aimed to assess the awareness of adolescents on SRH issues that may help policy makers, program planners, and implementers to design appropriate interventions to address the same.

**Aim:** To study Sexual and Reproductive Health awareness among high school students in Kerala.

### Objective:

1. To list the sources of information on Sexual and Reproductive Health issues among adolescent high school students in Thrissur district, Kerala.
2. To study the awareness on Sexual and Reproductive Health issues among adolescent high school students in Thrissur district, Kerala.

## MATERIALS & METHOD

**Study design:** Cross-sectional study

**Study setting:** High school students of 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> classes in Thrissur district.

**Study period:** December 2019 to May 2021

**Study population:** Students belonging to 8, 9,10 standards of schools in Thrissur district. *Inclusion criteria:* All children of specified standards who are willing to participate, give assent and are present during the study period. *Exclusion criteria:* Nil.

**Sample size:** The sample size was calculated using the formulae  $Z_{(1-\alpha/2)}^2 pq / d^2$  for cross sectional study with 80% of power. A study conducted by Mersha et al in 2016, concluded that an important source of information among adolescents on SRH issues was school 32.4 %.<sup>11</sup> Taking that parameter into consideration, sample Size (N) was calculated as follows:  $N = Z_{(1-\alpha/2)}^2 pq / d^2$ ;  $p=32.4\%$ ;  $q=100-p=67.6\%$ ;  $d=$  relative Precision, taken as 20% of the prevalence;  $d= 6.48$ . Sample size (N) =  $3.84 \times 32.4 \times 67.6 / (6.48 \times 6.48) = 200$ . Taking a design effect of 2,  $N = 200 \times 2 = 400$ . Taking a non-response error of 10 %,  $N = 440$

**Sampling method:** Multistage random sampling was used for this study. Due to the COVID 19 pandemic and successive lockdowns, it was possible only to collect data from 2 schools. A sample of 338 was achieved. The sample of adolescents thus obtained was stratified based on gender into male and females; and based on grade of studying into 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup>.

**Data collection:** A Self-administered questionnaire in English language was used. Due to the COVID 19 lockdown and subsequent closure of schools, few responses were recorded through Online- Google forms sent via email to the students.

**Study tool:** A pre-tested and validated structured questionnaire prepared based on the WHO Questionnaire for the young was used to collect data.<sup>12</sup> Few questions were modified to account for the cultural and regional differences expected in this study. The questionnaire consisted of 2 parts- A, B. **A.** Socio-demographic details of the student **B.** Sexual and reproductive health issues: The sexual and reproductive health issues were divided into 10 domains- (1) private parts (2) types of touch (3) pubertal changes (4) menstruation (5) masturbation (6) sexual contact (7) pregnancy (8) contraception (9) Sexually transmitted diseases (10) sexual abuse. Each of the domain had open- ended question on whether they have heard about the domain, what they understood by

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the domain, and their source of information regarding the same. The reliability of the questionnaire was assessed with a Cronbach's alpha value of 0.8- Good reliability. A pilot study was conducted to validate the questionnaire, prior to the study period.

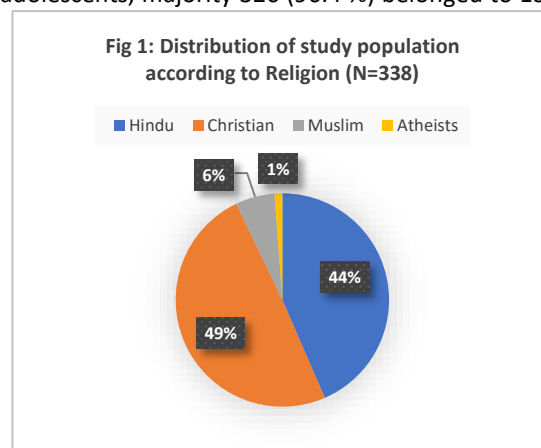
**Data analysis:** The data obtained was coded and entered to MS Excel worksheet and analyzed using SPSS Version-23. Results of baseline characteristics of the study subjects were explained in terms of frequency, percentage, mean and standard deviation.

**Ethical consideration:** Institutional Research Committee and Ethical Committee clearance were obtained prior to starting the study.

## RESULTS

### Sociodemographic Characteristics (N= 338):

Mean age of the study population was 14.2 ±0.88 years. Out of the total 338 adolescents, majority 326 (96.4 %) belonged to 13-15 years of age. Majority 196 (58 %) of the study participants were females. Majority of the adolescents, 122 (36.1 %) were in 10<sup>th</sup> grade, followed by 111 (32.8 %) in 9<sup>th</sup> grade and 105 (31.1 %) in 8<sup>th</sup> grade. Most of the adolescents were residents of urban areas. Only a few 35 (10.4 %) belonged to rural areas. Majority of the adolescents, 288 (85.2 %) stayed with both parents, while 16 (4.7 %) and 25 (7.4 %) stayed with father only and mother only respectively. A few, 9 (2.7 %) did not stay with parents; they stayed with grandparents, relatives or in hostels. Most adolescents, 142 (42 %) had 2 male members at their home, followed by 127 (37.6 %) having 3 males and 69 (20.4 %) having 1 male at home. Similarly, most of the adolescents, 160 (47.3 %) had 2 female members at home. Out of the 338 adolescents, more than half, 188 (56 %) had no elder siblings, 71 (21 %) had brothers, 65 (19 %) had sisters and 14 (4 %) had both brother and sister. Fig 1 shows the distribution of study population according to their religion. Majority of females have attended SRH class at some point in their life, [195(57.7%)], while most of the males had not attended [79(55.2%)].



Majority of the adolescents have heard about SRH matters like private parts [335(99.1 %)], Types of touch [327 (96.7 %)], pubertal changes [329 (97.3 %)], Menstruation [318 (94.1 %)], sexual contact [310 (91.7 %)], pregnancy [284 (84 %)], contraception [250 (74 %)], STDs [278 (82 %)] and sexual abuse [307 (91 %)]. But 186 (55 %) of adolescents hadn't heard about masturbation.

### The adolescents' source of information on SRH issues are shown in Table 1

Sl. No.	SRH Domain	Media	School	Friends	Parents		Siblings	
					Father	Mother	Brother	Sister
1	Private parts (n= 335)	117 (34.9)	123 (36.7)	63 (18.8)	127 (37.9)	232 (69.3)	17(5.1)	25(7.5)
2	Types of touch (n=327)	121(37)	136 (41.5)	48 (14.6)	132 (40.3)	231 (70.6)	12 (3.6)	24 (7.3)
3	Puberty changes (n=329)	37 (11.2)	190 (57.7)	52 (15.8)	119 (36.2)	190 (57.7)	15 (4.5)	22 (6.6)
4	Menstruation (n=318)	43 (13.5)	155 (48.7)	42 (13.2)	84 (26.4)	193 (60.6)	8 (2.5)	27 (8.4)
5	Masturbation (n=152)	120 (78.9)	20 (13.1)	90 (59.2)	6 (3.9)	8 (5.2)	1(0.6)	2 (1.3)
6	Sexual contact (n=310)	213 (68.7)	85 (27.4)	58 (18.7)	76 (24.5)	105 (33.8)	12 (3.8)	17 (5.4)
7	Pregnancy (n=284)	180 (63.3)	91 (32)	33 (11.6)	76 (26.7)	86 (30.2)	7 (2.4)	5 (1.7)
8	Contraception (n=250)	174 (69.6)	83 (33.2)	59 (23.6)	55 (22)	40 (16)	2 (0.8)	1 (0.4)
9	STDs (n=278)	208 (74.8)	176 (63.3)	34 (12.2)	64 (23)	96 (34.5)	0 (0)	4 (1.4)
10	Sexual abuse (n=307)	242 (78.8)	70 (22.8)	46 (14.9)	105 (34.2)	134 (43.6)	36 (11.7)	25 (8.1)

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\*Multiple answers were possible. All cells contain values as Number (%).

The following tables 2 to 14 shows the awareness of adolescents regarding questions asked on sexual and reproductive health issues. Only the responses of those adolescents who answered the open ended question were considered.

**Table 2:** Menstruation (N=318)

Adolescent's answer	Total (%)	Males (%)	Females (%)
Maturity changes that happen in a girl when she can have a baby	51 (16)	9 (17.6)	42 (82.4)
Breakdown of the uterine lining if fertilization does not occur	154 (48.4)	48 (31.2)	106 (68.8)
Do not know what exactly it is	57(17.9)	39 (68.4)	18 (31.6)
Something that happens to girls only	18 (5.6)	9 (50)	9 (50)
Bad blood from body going out	38 (11.9)	19 (50)	19 (50)
<b>TOTAL</b>	<b>318 (100)</b>	<b>124 (39)</b>	<b>194 (61)</b>

**Table 3:** Age at Menstruation (N=318)

Age	Total (%)	Males (%)	Females (%)
< 10 years	24 (7.5)	7 (29.2)	17 (70.8)
10-15 years	270 (84.9)	96 (35.6)	174 (64.4)
>15 years	24 (7.5)	21 (87.5)	3 (12.5)
<b>TOTAL</b>	<b>318 (100)</b>	<b>124 (39)</b>	<b>194 (61)</b>

**Table 4:** Frequency of Menstruation (N=318)

Frequency	Total (%)	Males (%)	Females (%)
Once a week	8(2.5)	4 (50)	4 (50)
Once in 6 months	2 (0.6)	1(50)	1 (50)
Once in a month	302 (95)	113 (37.4)	189 (62.6)
Once in a year	6 (1.88)	6 (100)	0 (0)
<b>TOTAL</b>	<b>318 (100)</b>	<b>124 (39)</b>	<b>194 (61)</b>

**Table 5:** Masturbation (N=152)

Adolescent's answer	Total (%)	Males (%)	Females (%)
Do not know to explain	26 (17.1)	14 (53.8)	12 (46.2)
Sexual touch of one's own body parts	107 (70.3)	47 (43.9)	60 (56.1)
Something only boys do for testing sperms	14 (9.2)	9 (64.3)	5 (35.7)
A sexual sin	5 (93.2)	4 (80)	1 (20)
<b>TOTAL</b>	<b>152 (100)</b>	<b>74 (48.7)</b>	<b>78 (51.3)</b>

**Table 6:** Sexual Intercourse (N=310)

Adolescent's answer	Total (%)	Males (%)	Female (%)
Having 'sex'	115 (37.1)	48 (41.7)	67 (58.3)
Don't know exactly what it is	76 (24.5)	41 (53.9)	35 (46.1)
Contact with private parts	67 (21.6)	20 (29.9)	47 (70.1)
'Something' between man and woman that lead to pregnancy	38 (12.2)	13 (34.2)	25 (65.8)
Sperms of man entering oviduct of woman	3 (0.9)	0 (0)	3 (100)

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'Something which grownups who love each other do'	8 (2.5)	5 (62.5)	3 (37.5)
A course on 'Sex'	3 (0.9)	0 (0)	3 (100)
<b>TOTAL</b>	<b>310 (100)</b>	<b>127 (41)</b>	<b>183 (59)</b>

**Table 7:** Ideal Time for Sexual Contact (N=310)

Adolescent's answer	Total (%)	Males (%)	Females (%)
More than 18 years of age	52 (16.7)	18 (34.6)	34 (65.4)
When you have a girlfriend/ boyfriend	31 (10)	20 (64.5)	11 (35.5)
After marriage	205 (66.1)	77 (37.6)	128 (62.4)
Never	22 (7.1)	12 (54.5)	10 (45.5)
<b>TOTAL</b>	<b>310 (100)</b>	<b>127 (41)</b>	<b>183 (59)</b>

**Table 8:** Reasons for Adolescent Pregnancy (N=284)

Adolescent's answer	Total (%)	Males (%)	Females (%)
Lack of education	190 (66.9)	77 (40.5)	113 (59.5)
Curiosity	157 (55.2)	55 (35)	102 (65)
Child marriage	127 (44.7)	48 (37.8)	79 (62.2)
Sexual abuse	238 (83.8)	83 (34.9)	155 (65.1)
Uncultured & Tradition less	103 (36.2)	38 (36.9)	65 (63.1)

\*Multiple answers were possible

**Table 9:** Acts which lead to Pregnancy (N=284) \*

Adolescent's answer	Total (%)	Males (%)	Females (%)
Kissing/ Hugging each other	71 (25)	23 (32.4)	48 (67.6)
Having sexual contact	259 (91.2)	105 (40.5)	154 (59.5)
Just sleeping with the opposite sex in the same room	59 (20.7)	23 (39)	36 (61)

\*Multiple answers were possible

**Table 10:** Outcomes of Adolescent Pregnancy (N=284) \*

Adolescent's answer	Total (%)	Males (%)	Females (%)
Unsafe Abortions	215 (75.7)	80 (37.2)	135 (62.8)
Drop out from school	165 (58.1)	69 (41.8)	96 (58.2)
Low birth weight babies	65 (22.8)	22 (33.8)	43 (66.2)
Lack of family support	215 (75.7)	82 (38.1)	133 (61.9)
Mental health problems	213 (75)	78 (36.6)	135 (63.4)
Death	103 (36.2)	33 (32)	70 (68)

\*Multiple answers were possible

**Table 11:** Contraceptive Methods known to Adolescents (N=250) \*

Contraceptive method	Total (%)	Males (%)	Females (%)
Birth control Pills	200 (80)	79 (39.5)	121 (60.5)
Birth control Injections	141 (56.4)	55 (39)	86 (61)

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Condoms	212 (84.8)	92 (43.4)	120 (56.6)
Exclusive breastfeeding	80 (32)	27 (33.8)	53 (66.2)
Implants	113 (45.2)	43 (38.1)	70 (61.9)
Intrauterine devices (CuT)	105 (42)	35 (33.3)	70 (66.7)
Operations (Tubectomy/ Vasectomy)	91 (36.4)	35 (38.5)	56 (61.5)
Withdrawal by male partner	62 (24.8)	22 (35.5)	40 (64.5)

\*\*Multiple answers were possible

**Table 12:** STDs known to adolescents (N=278) \*

STD	Total (%)	Males (%)	Females (%)
HIV/AIDS	270 (97.1)	113 (41.9)	57 (21.1)
Genital Herpes	125 (45)	58 (46.4)	67 (53.6)
Genital warts/ HPV	51 (18.3)	29 (56.9)	22 (43.1)
Gonorrhoea	69 (24.8)	28 (40.6)	41 (59.4)
Syphilis	109 (39.2)	51 (46.8)	58 (53.2)

\*\*Multiple answers were possible

**Table 13:** Cause of STDs (N=278) \*

Cause of STDs	Total (%)	Males (%)	Females (%)
Kissing/ hugging each other	50 (18)	23 (46)	27 (54)
Sharing injection needles	213 (76.6)	79 (37.1)	134 (62.9)
Unsafe blood transfusions	209 (75.5)	82 (39.2)	127 (60.8)
Sexual contact with a prostitute	217 (78.1)	90 (41.5)	127 (58.5)
Not using condoms during sexual contact	126 (45.3)	56 (44.4)	70 (55.6)
Using public toilets	17 (6.1)	9 (52.9)	8 (47.1)
Talking to an HIV/AIDS patient	29 (10.4)	12 (41.4)	17 (58.6)
Sharing food with a person having an STD	28 (10.1)	13 (46.4)	15 (53.6)

\*\*Multiple answers were possible

**Table 14:** Sexual Abuse (N=307)

Adolescent's answer	Total (%)	Males (%)	Females (%)
Touching the opposite sex without permission	52 (16.9)	17 (32.7)	35 (67.3)
Don't know exactly	54 (17.5)	30 (55.6)	24 (44.4)
Act of forceful sex/ 'Rape'	174 (56.6)	66 (37.9)	108 (62.1)
Crimes against 'women'	27 (8.7)	12 (44.4)	15 (55.6)
<b>TOTAL</b>	<b>307</b>	<b>125 (40.7)</b>	<b>182 (59.3)</b>

## DISCUSSION

In the present study, the major sources of information for adolescents regarding SRH matters like private parts, type of touch, response to sexual assault and menstruation was their mother. When it comes to puberty changes, both mother and school were the major sources. Media was the most common source of information regarding Masturbation, sexual contact, pregnancy, contraception, STDs, and sexual abuse. Aunts, uncles, and grandparents were the least family members mentioned as a source of

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information on SRH. In a study in West Ethiopia, large proportion quoted people other than family as a source of information about SRH, particularly their friends (59.5% for females and 55.1% for males).<sup>13</sup> Among mentioned source of information for SRH issues, television, and school accounted 48.3% and 42.6% respectively in Kasiye et al's study; the preferred source of information on SRH was school for 76%.<sup>14</sup> But in a study by Yesus et al, the most constantly mentioned source of information for SRH were school (83.3%) followed by friends (27.6).<sup>15</sup> In Visani et al study, the main sources of SRH information for adolescents were health facilities, followed by internet as it was easy access.<sup>16</sup> A cross sectional survey done in Hamadan showed that adolescents of both genders seek information about SRH as well as relationship advise from their friends further than from any other sources.<sup>17</sup> A quarter of the study sample of Rada et al reported mass media as a source of information.<sup>18</sup> It's intriguing to note that sources such as schools, doctors, and health staff, were very inadequately represented. In the study of Mohammadi et al, adolescent boys considered their friends to be the primary means of information. They preferred to talk to their friends about sexual issues and relationships.<sup>19</sup> The results of a study by Mazloomi et al on- university scholars also showed that their main resources for sexual health were friends followed by special books.<sup>20</sup> Survey results of Soltani et al reported that after friends, mothers were the source for girls, while movies and internet for the boys.<sup>17</sup> Similar results were found in Iran.<sup>21</sup> In 2014, Mousavi et al did qualitative exploration which revealed that mothers were the primary source for knowledge regarding puberty, but friends were preferred for sexual subjects. Also, girls admitted the fact that their friends' information wasn't always accurate and that they would have liked to acquire this knowledge from their mothers rather than friends.<sup>22</sup> In Ethiopia, teenagers preferred to gain their knowledge from school, radio, TV, and other media, while parents were only the alternate preference.<sup>14</sup> It's interesting to note that, due to disappearance of the taboos and once constraints, adolescents in Chile considered the knowledge acquired from parents, teachers, and health professionals as the most dependable.<sup>23</sup> It seems that, cultural and religious influences and sense of shyness and not being comfortable with the parents is what encourages teenagers to further use of the internet, media, magazines, and friends as sources of information.<sup>24</sup> In a study in India by Shankar et al among adolescent girls in the slum areas of Pune, majority felt comfortable in confiding regarding reproductive health issues with friends rather than parents, teachers, or doctors.<sup>25</sup> Analogous results were observed in a study by Sandhya et al in Kerala.<sup>26</sup> The major source of information regarding HIV was from mass media (75%), followed by friends (15%), teachers (7%), and least was from parents and siblings (2%) in a study conducted in 2016 in Mysore.<sup>27</sup> In discrepancy are two studies conducted in America by the National Campaign to help Teen Pregnancy which surveyed nationally representative samples of youth 12 to 19 years of age. Unlike the former studies which asked about most important sources of information, these concentrated on who or what most influenced their actual sexual decision- making.<sup>28</sup> In the current study, less than half of adolescents knew rightly what menstruation (females more than males) was. When it comes to knowledge on masturbation, 70.3% adolescents answered rightly (females more than males). 99.03% didn't know exactly what sexual contact was (females more than males). HIV/ AIDS was the most common STD known to adolescents, followed by Genital Herpes. Many adolescents thought that STDs could be acquired via using public toilets; 10.4% of adolescents answered that STDs can be transmitted by talking to an HIV/ AIDS case or sharing food with an STD case. While, in a study in Gumuz region of Ethiopia, most of the respondents (76%) knew rightly regarding period; 84.2% respondents knew about STIs. HIV/ AIDS was the most known STI (88%), followed by Gonorrhoea (78.3%).<sup>16</sup> While in another study according to Kasiye et al, 59.9% only knew about menarche (24.6% males; 35.3% females). 57.3% of the repliers were knowledgeable about SRH matters; 97.8% had heard about STIs; majority of the repliers heard about HIV/ AIDS (96.5%) followed by syphilis (51.7%). But only 34.9% of the repliers had heard of LGV. 95.3% of the repliers had heard about HIV/ AIDS prevention methods [being faithful to partner, abstinence, avoiding of sharing sharp materials which accounted (78.9%, 78.6% and 70.1% respectively)]. Majority (91.7%) had heard about contraception and Norplant was the generally heard system of contraception followed by injectables which accounted 73.7% and 72.2% respectively.<sup>14</sup> While in the present study, Condoms (84.8%) and Birth control pills (80%) were the most common contraceptives known to adolescents. further than half of the adolescents knew rightly about sexual abuse; females knew more than males. Condoms were the most extensively known contraception among adolescents (42%) while emergency contraceptives were least known (28%). Also, 78% of subjects knew about physical signs of adolescence and 88% were aware of the need for adolescent health according to a study by Agarwal et al in India.<sup>29</sup> Less than 30% of the girls were apprehensive of condoms and oral contraceptive pills. Regarding harmful effects of indulging in adulterous physical relationships, further than half (57%) of the participants were concerned about bringing a bad name to themselves and their family, while RTIs, HIV/ AIDS (29%), failure to pursue further education and unwanted pregnancy were cited as other ill effects according to Shankar et al in Pune.<sup>25</sup> The difference in the findings suggest the difference in cultural backgrounds, taboo associated with SRH communication among parents as well as teachers and lack of adolescent friendly health facilities in India.

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### CONCLUSIONS

The major sources of information for adolescents regarding basic SRH issues like private parts, type of touch and menstruation was their parents. When it comes to puberty changes, parents and schools were the major sources. Media was the most common source of information regarding more sensitive issues like Masturbation, sexual contact, pregnancy, contraception, STDs, and sexual abuse. There is poor awareness of adolescents regarding most of the SRH issues. India has the largest adolescent population, and it is a country known to have strict traditional values and age-old cultures and customs. Adequate information through parents may improve the knowledge on these issues.

### LIMITATIONS

Due to the COVID 19 pandemic, the calculated sample size could not be achieved to get more accurate results. Few of the responses were obtained through online google forms. It was difficult for students to fully express their views on the open-ended questions.

### RECOMMENDATIONS

Age-appropriate comprehensive sexuality education must be incorporated into their curriculum effectively to improve their SRH. Further research to understand the adolescents and parents' perspectives on SRH communication is recommended.

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## Evaluating the Efficacy of Nikant Doxycycline Sutures in Reducing Surgical Site Infections Following Appendectomies



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### ABSTRACT:

**Background:** In appendectomies, surgical site infections (SSIs) provide a serious post-operative issue. The purpose of this study was to compare the antimicrobial alternative Nikant doxycycline sutures to regular polyamide sutures in terms of how well they reduced the risk of SSIs.

**Materials and Methods:** The 79 appendectomy patients were split into two groups for the study: the main group of 30 patients who used Nikant doxycycline sutures and the control group of 49 patients who received conventional polyamide sutures. A comprehensive questionnaire was employed to collect the data, and SPSS version 17 was used for analysis. A p-value of 0.05 or lower was deemed statistically significant.

**Results:** Patients' rates of surgical site infections were 7.6%. Traditional polyamide sutures were utilised by patients with a 1.3 percent infection rate, but Nikant doxycycline sutures had a 6.3 percent infection rate. This distinction lacked statistical significance. Infected individuals were in the hospital longer than those who were not infected, and they were more likely to have peritonitis and necrotic appendicitis.

**Conclusion:** According to our research, SSI rates were not significantly lower with Nikant doxycycline sutures than they were with conventional polyamide sutures. However, their use did not result in any further issues, suggesting that they might be a secure replacement for surgical suturing in appendectomies.

**KEYWORDS:** Surgical Site Infections, Appendectomy, Nikant doxycycline sutures, Polyamide sutures, post-operative complications.

### INTRODUCTION

A major problem in the medical sector is surgical site infections (SSIs), especially after appendectomies. They may make the healing process more challenging, need longer hospital stays, or, in more extreme circumstances, result in major health issues[1]. Therefore, it is crucial to create and put into practise techniques that lessen these problems and improve patient outcomes[2]. The consequences of surgical site infections (SSIs), which pose a significant issue in the field of modern medicine, are especially noteworthy in the context of appendectomies[3]. The emergence of an SSI can severely impede the recovery that occurs naturally following surgery, resulting in a series of issues that can be upsetting for the patient and difficult for medical professionals to manage[4]. Long hospital stays are frequently necessary for patients with SSIs, which puts additional strain on the healthcare system and raises treatment costs overall[5]. The direct effect on the patients is particularly significant because SSIs frequently cause pain, stress, and a delay in recovery, all of which lower the patients' overall quality of life. SSIs can worsen into serious health issues in more severe situations[6]. If they are not properly managed, they may lead to other invasive surgeries, ongoing health problems, and even life-threatening illnesses[7]. It is impossible to overstate the psychological toll that such circumstances may have on patients, with the worry and anxiety brought on by a protracted sickness and complications frequently making matters worse. As a result, it is imperative and unavoidable to develop and put into action methods that can successfully lower the incidence of SSIs and mitigate their impact[8]. This necessitates a thorough strategy covering many aspects of surgical treatment, such as the selection of surgical techniques, wound care procedures, antibiotic prophylaxis, and even the kind of suturing material employed. The type of suturing material used to close wounds is one potential risk factor for SSIs[9]. Due to their effectiveness and affordability, traditional sutures—often composed of polyamide—are frequently used in medical procedures[9], [10]. However, research for substitute suturing materials has been driven by the prospect that these sutures could contribute to the

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SSIs. One such alternative are Nikant doxycycline sutures. These sutures stand out because they are covered in doxycycline, a broad-spectrum antibiotic that may offer the wound site some level of antimicrobial defense[11]. The likelihood of SSIs may be decreased by this trait. The type of suturing material used to close wounds is one potential risk factor for SSIs. Due to their effectiveness and affordability, traditional sutures often composed of polyamide are frequently used in medical procedures[12][13]. However, research for substitute suturing materials has been driven by the prospect that these sutures could contribute to the SSIs. One such alternative are Nikant doxycycline sutures[14]. These sutures stand out because they are covered in doxycycline, a broad-spectrum antibiotic that may offer the wound site some level of antimicrobial defence. The likelihood of SSIs may be decreased by this trait[15].

This study was created to evaluate Nikant doxycycline sutures' performance against conventional polyamide sutures in appendectomies given its potential to reduce SSIs. We wanted to find out if using doxycycline-coated sutures would significantly lower the number of surgical site infections (SSIs), potentially improving postoperative outcomes for patients. The results of this study may help to develop better methods for SSI prevention and provide a more detailed understanding of how suture material affects SSIs.

### MATERIALS AND METHODS

#### Study Design and Participants

A total of 79 patients underwent appendectomies for the study, 33 of whom were men (41.8%) and 46 of whom were women (58.2%). The main group and the control group were each given a separate group of individuals. Table 1 displays the participant's demographic information.

**Table 1: Demographic Characteristics of the Study Participants.**

Group	Number of Patients	Number of Males	Number of Females
Main Group	30 (38%)	13 (16.5%)	17 (21.5%)
Control Group	49 (62%)	20 (25.3%)	29 (36.7%)
<b>Total</b>	<b>79</b>	<b>33 (41.8%)</b>	<b>46 (58.2%)</b>

The control group included 49 patients (62%) who had their abdominal sheath closed with conventional sutures, whereas the main group included 30 patients (38%) who had their abdominal sheath closed utilising Doxycycline-antimicrobial sutures.

#### Procedure

Senior surgeons with extensive experience performed the surgeries. Between the primary group and the control group, different types of sutures were used. Table 2 shows how different types of sutures were distributed throughout the groups.

**Table 2: Suturing Material Used in the Study Groups.**

group	Number of Patients	Number of Males	Number of Females	Suture Material Used
Main Group	30 (38%)	13 (16.5%)	17 (21.5%)	Doxycycline-antimicrobial sutures
Control Group	49 (62%)	20 (25.3%)	29 (36.7%)	Traditional sutures
<b>Total</b>	<b>79</b>	<b>33 (41.8%)</b>	<b>46 (58.2%)</b>	

To close the abdominal sheath in the main group, Doxycycline-antimicrobial sutures were used, whereas in the control group, conventional sutures were employed.

Here's the revised section with a table to represent the type of data collected:

### DATA COLLECTION

Data were gathered using a thorough questionnaire that covered a wide range of topics. All patients were given the go-ahead before completing the questionnaire, and demographic and clinical data were gathered. Table 3 provides a description of the acquired data's characteristics.

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**Table 3: Data Collected from the Questionnaire**

Field	Description
Name	Patient's full name
Age	Patient's age
Sex	Patient's sex
Hospital ID	Unique identification number in the hospital system
Case Sheet Number	Number of the case sheet in medical records
Address	Patient's residential address
Contact Information	Patient's contact number
Admission Date	Date when the patient was admitted
Discharge Date	Date when the patient was discharged
Duration of Hospitalization	Total time the patient spent in the hospital
Duration of Illness	Total time the patient was sick
Chronic Disease	Presence of any chronic disease
Diagnosis	Medical diagnosis of the patient's condition
Operation Details	Details of the operation performed
Sutures Used	Type of sutures used in the operation
Antibiotic Treatment	Type of antibiotics used in treatment
General Complications	Any complications that occurred after the operation
Local Complications	Complications specific to the surgery site
Lab Investigation Results	Results of laboratory tests conducted

All information was obtained directly from the patients at the time of the interview.

### Preparation of Nikant Suture

With a polyamide filament foundation and a two-stage arrangement, the Nikant doxycycline sutures were created. There were various steps in the preparation process, which are listed in Table 4.

**Table 4: Steps in the Preparation of Nikant Suture**

Step Number	Description
1	The nylon thread is continuously unwound from the packing
2	The thread passes through an impregnating bath where it is coated with a modifying solution
3	The coated thread is squeezed using a diaphragm
4	The thread passes through two dryers heated to 220-250°C
5	This process ensures the removal of the solvent and the fixation of the polymer coating on the filament

The linear velocity of the filament is maintained at 10 m/min throughout the procedure, which prepares Nikant doxycycline sutures.

### Statistical Analysis

All acquired data were coded and processed for statistical purposes using GraphPad prism v9 and the Statistical Package for Social Sciences (SPSS) software version 17 for Windows. For the comparison of continuous variables, the independent Student's t-test was utilised, and the Chi-square test was used to compare proportions between groups. Statistical significance was defined as a p-value less than 0.05.

## RESULTS

### Patient Characteristics

This study had 79 patients in total. These were made up of 46 women and 33 men (41.8%). (58.2 percent ). The main group and the control group were created from the remaining two groups of patients.

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Thirty patients (38%) made comprised the primary group, with thirteen (13.5%) males and seventeen (17.5%) females (21.5 percent ). The patients in this group received Nikant Doxycycline sutures.

The control group had 49 patients (62%) and 20 men (25.3%) and 29 females in it (36.7 percent ). Traditional sutures were applied to this group.

**Table 5: Distribution of patients according to gender and group.**

	Main Group	Control Group	Total
No. of SSIs	2	5	7
No. of Patients	30	49	79
Infection Rate	6.7%	10.2%	7.6%

### Surgical Site Infections

7.6% of patients who underwent appendectomy experienced surgical site infections (SSIs). The main group and the control group both experienced the same level of SSI occurrence.

**Table 6: Surgical site infections in the main and control groups.**

	Main Group	Control Group	Total
No. of SSIs	2	5	7
No. of Patients	30	49	79
Infection Rate	6.7%	10.2%	7.6%

In terms of infection rate, there were no statistically significant differences between the two groups ( $p > 0.05$ ).

### Symptoms and Clinical Findings

A day or so before most patients were admitted to the hospital, they began reporting symptoms. Abdominal pain with changing pain, anorexia, nausea, and vomiting were among the patients' typical presenting signs and symptoms. Most patients' right lower abdomen soreness was found after a clinical examination.

**Table 7: Common symptoms and clinical findings among the patients.**

Common symptoms and clinical findings	% of Patients
Abdominal pain with shifting of pain	80%
Anorexia	10%
Nausea	5%
Vomiting	15%
Right lower abdominal tenderness	12%

Note: The table would contain the actual number of patients reporting each symptom or clinical finding.

### Operative Details

This study's appendectomies were all carried out by experienced surgeons. The grid-iron incision technique was used for the surgeries. The appendectomies took an average of 45 minutes to complete.

**Table 8: Operative details of the study participants.**

	Appendectomies
Surgeon Experience	Senior Surgeons
Operative Technique	Grid-Iron Incision
Average Operative Time (minutes)	45

### Appendicitis Type

Cases of appendicitis were categorized into two groups: uncomplicated and complicated. The distribution of appendicitis types and their subcategories is presented in Table 9.

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**Table 9: Distribution of Appendicitis Types**

Appendicitis Type	Main Group	Control Group	Total
Uncomplicated			
- Mucosal Appendicitis	2 (7.6%)	4 (8.2%)	6 (7.6%)
- Phlegmonous Appendicitis	17 (56.7%)	30 (61.2%)	47 (59.4%)
Complicated			
- Necrotic Appendicitis without Peritonitis	3 (10%)	2 (4.1%)	5 (6.3%)
- Necrotic Appendicitis with Peritonitis	7 (23.3%)	7 (14.3%)	14 (17.7%)
Secondary Appendicitis	1 (3.3%)	6 (12.2%)	7 (8.9%)
<b>Total</b>	<b>30</b>	<b>49</b>	<b>79</b>

For each kind of appendicitis and its subtypes, the table shows the proportion and number of instances.

### Surgical Wound Infections

The rates of surgical wound infections were assessed for patients who received traditional polyamide sutures and those who received polyamide sutures coated with Doxycycline. The infection rates for each group are presented in Table 10.

**Table 10: Surgical Wound Infection Rates**

Suture Type	Main Group	Control Group	Total
Traditional Polyamide Sutures	-	1 (2.1%)	1 (1.3%)
Polyamide Sutures Coated with Doxycycline	1 (3.3%)	5 (10.2%)	6 (6.3%)
<b>Total</b>	<b>30</b>	<b>49</b>	<b>79</b>

The number and proportion of surgical wound infections in each group are shown in the table.

### Hospital Stay

Compared to those who did not, patients who experienced surgical site infections (SSIs) stayed in the hospital for noticeably longer periods of time. Patients with SSIs spent an average of 10 days in the hospital, whereas patients without SSIs spent an average of 7 days there. Notably, patients with necrotic appendicitis and peritonitis had a greater prevalence of infection.

### Suture Handling and Complications

Neither type of suture was handled noticeably differently, according to surgeons (Nikant Doxycycline sutures and traditional sutures). Additionally, during the 10-day follow-up period, no suture-related problems were found.

### Local Postoperative Complications

Local postoperative problems were seen in 8 instances (16.3%) in the control group and 2 cases (6.7%) in the main group using Nikant Doxycycline sutures (traditional sutures). Seroma, hematoma, secondary haemorrhage, wound infiltration, and wound suppuration were some of these consequences.

**Table 11: Local postoperative complications in the main and control groups.**

Type	Main Group	Control Group	Total
Seroma	0	1	1
Hematoma	0	1	1
Secondary bleeding	1	0	1
Wound infiltration	0	1	1
Wound suppuration	1	5	6
<b>Total</b>	<b>2 (6.7%)</b>	<b>8 (16.3%)</b>	<b>10</b>

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## DISCUSSION

This study's objective was to assess how well Nikant Doxycycline sutures prevented surgical site infections (SSIs) in patients having appendectomies. Our study's findings offer important new understandings about the usage of these sutures and their effects on infection rates, patient outcomes, and postoperative problems[6]–[8].

In our study, we found that patients who underwent appendectomy had an overall surgical site infection rate of 7.6%[9]. This result is consistent with earlier research that showed infection rates following appendectomy surgeries ranging from 5% to 15%. Importantly, the primary group (Nikant Doxycycline sutures) and the control group did not have different infection rates that were statistically different from one another (traditional sutures). It appears from research that using Nikant Doxycycline sutures did not significantly lower the likelihood of SSIs in this patient population[13], [16].

It is important to remember that a number of variables, such as patient characteristics, surgical technique, and postoperative care, might affect how SSIs develop. Because there were no appreciable variations in the main and control groups' demographics in our investigation, it is doubtful that patient-related factors had any bearing on the infection rates. Additionally, all appendectomies were carried out by senior surgeons with extensive expertise using an uniform operative procedure, reducing the influence of surgical variability on the results[10], [11].

Our study did turn up some interesting results regarding postoperative complications and hospital stay, despite the lack of significant variations in infection rates. Patients who experienced SSIs stayed in the hospital for noticeably longer periods of time than those who did not get an infection. This finding is in line with earlier research showing that SSIs can lengthen hospital stays and raise healthcare expenses. Additionally, patients with necrotic appendicitis with peritonitis had a greater frequency of infection, demonstrating the severity of this particular appendicitis subtype and its link to increased infection rates[12], [15].

The management of Nikant Doxycycline sutures and conventional sutures received excellent reviews from surgeons, with no obvious differences being noted. This shows that there were no difficulties or issues during the surgery related to the use of Nikant Doxycycline sutures. Additionally, no suture-related issues were found during the 10-day observation period, indicating that patients tolerated both sutures with no problems[14], [17].

There are several restrictions on our study that must be recognised. First, because it was a single-center study, the results might not be generalizable to other healthcare settings. To verify our findings, additional multi-center research with bigger sample sizes are required. Second, the follow-up period was just 10 days long, which might not have allowed for all potential long-term consequences. More thorough information about the security and effectiveness of Nikant Doxycycline sutures would be provided by longer-term follow-up research[18], [19].

## CONCLUSION

In patients having appendectomies, our study found no conclusive evidence that Nikant Doxycycline sutures are significantly more effective at avoiding surgical site infections than conventional sutures. However, it's critical to evaluate these results in light of the study's constraints. Additional options for decreasing the frequency of SSIs and enhancing patient outcomes in appendectomy procedures require further study.

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## Conflict of Interest

The authors declare no conflicts of interest related to this study.

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## Transforming Education in Indonesian Higher Education Through the use of Metaverse to Improve Learning Quality



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**ABSTRACT:** Essentially, technology can make things easier for humans to do. Government agencies, companies, and other institutions use technology, including educational institutions. During the COVID-19 pandemic, one of the technologies that has been widely discussed so far, the metaverse, emerged. The metaverse has great potential in the field of education. By leveraging the metaverse, educational institutions can create virtual environments that include elements such as Augmented Reality and Virtual Reality. In Indonesia, the metaverse concept and its application in education are still in the development and exploration stages. Metaverse can be used as a platform for holding lectures and teaching virtually. The application of the metaverse in higher education is still being developed and researched to better understand the potential and associated challenges. However, with the development of technology that continues to develop, the metaverse can be an innovative way to enhance the learning experience. The method used in this study was a qualitative method based on a literature review. Articles were obtained from Google Scholar or Harzing's Publish or Perish application. The process of searching for articles used the keywords "metaverse", "metaverse education", and "metaverse in higher education". There were 15 scientific articles obtained from various national journals, spanning 2020-2023. The obtained articles were then analyzed using the Bibliometric method. The bibliometric method can assist researchers to better understand the contents of the bibliography, as well as the directions and trends discussed in each article that has been collected.

**KEYWORDS:** Metaverse, Education, Higher Education

### I. INTRODUCTION

Advances in technology today are inextricably linked to people's lives. We now have access to information from all over the world as a result of technological advancements (globalization). If the saying "the world is bigger than your backyard" was once true, it should now be changed to "the world is not bigger than your backyard" because fast access to information in various parts of the world makes this world seem narrower. Now we can see what is happening in America, for example, even though we are in Indonesia (Wahyudi & Sukmasari, 2018).

Technological progress is currently very fast and rapid, including in Indonesia. The existence of technology can essentially make it easier for humans to do something. Government agencies, companies, and other institutions use technology, including in educational institutions. Several years ago, the COVID-19 pandemic had a significant impact on various fields in Indonesia, particularly the education sector. Educational institutions must be encouraged to use technology for distance learning. Schools and colleges are adopting digital platforms, applications, and other software to support online learning. During the COVID-19 pandemic, one of the technologies that has been widely discussed so far, the metaverse, emerged. The term metaverse has gained popularity in recent years as major technology companies such as Facebook, Microsoft, and Google, as well as game developers, have expressed interest in the concept.

The metaverse, first described in author Neal Stephenson's novel "Snow Crash" in 1992, has become a concept used to describe 3D (three-dimensional), VWs (virtual worlds) in which people interact with each other and their environment without the physical limitations of the real world (Narin, 2021). Users in the metaverse can engage in a variety of activities such as gaming, social interaction, shopping, working, attending events, and so on. Metaverse environments are frequently set up as 3D worlds with landscapes, buildings, objects, and other virtual entities. Metaverse has great potential in the field of education.

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The Metaverse allows educational institutions to create a virtual replica of a school or campus. In this way, students, teachers, and employees can communicate and interact as quickly as if they were in the same room, using video calls or video conferencing (Contreras et al., 2022). The use of metaverse in education can result in rich, interactive learning experiences. By leveraging the metaverse, educational institutions can create virtual environments that include elements such as Augmented Reality and Virtual Reality. In Indonesia, the metaverse concept and its application in education are still in the development and exploration stages. Although there have been several attempts to utilize virtual and Augmented Reality technologies in learning, the use of metaverse is still limited. However, with the advancement of technology and the growing interest in innovative learning approaches, the metaverse could be of great potential in the future. Several educational institutions in Indonesia are starting to explore the use of the metaverse as a means to create a more interactive learning experience. Application in tertiary education is currently in the early stages of exploration but has shown promising potential. Metaverse can be used as a platform for holding lectures and teaching virtually. Not only that but metaverse can also be used to create virtual laboratory rooms and simulations in a variety of educational settings. Students, for example, in a virtual medical science simulation, can practice medical diagnoses and procedures in a safe and controlled environment.

The metaverse era raises various challenges to the implementation of the education system in higher education. Generation Z is familiar with the principles of the metaverse. They are proficient in using and utilizing technology, so they are prepared to carry out learning activities or lectures using technologically advanced online systems. The metaverse, which is borderless or unlimited space, poses significant challenges that must be addressed. Some of the challenges of the metaverse era, including the presence of users as individuals in society in the virtual world are represented by avatars. Individuals are busy monitoring avatar activity all the time and reducing activity in the real world (Dr. Argyo Demartoto, 202 C.E.).

The application of the metaverse in higher education is currently still being developed and further explored to understand the potential and associated challenges. However, with the advancement of technology that continues to develop, the metaverse can be an innovative way to enhance the learning experience. To improve the quality of education through the metaverse, it is important for us to study the metaverse in depth. Unfortunately, in Indonesia, the use of metaverse-based education is still not popular. The purpose of this study was to evaluate the suitability of using metaverse in the context of learning in universities. In addition, this study aimed to provide broader insights into the potential use of the metaverse in creating innovative future education.

## II. RESEARCH METHOD

The method used in this study was a qualitative method based on a literature review. According to Walidin, a qualitative method is a process method for understanding human or social phenomena by developing a comprehensive and complex picture that can be presented in words, reporting detailed views obtained from informant sources, and carrying out the research in a natural setting (Fadli, 2021). Meanwhile, the literature review includes descriptions of theories, results, and other research literature obtained from references used as the foundation for research activities, literature reviews are derived from journals, articles, or other publications that contain the same topic as raised by the researcher, in order to produce a new piece of writing relating to a particular topic (Bojonegoro, 2022). As a result, articles were obtained via Google Scholar or Harzing's Publish or Perish application. The process of looking for articles used the keywords "metaverse", "metaverse education", and "metaverse in higher education".

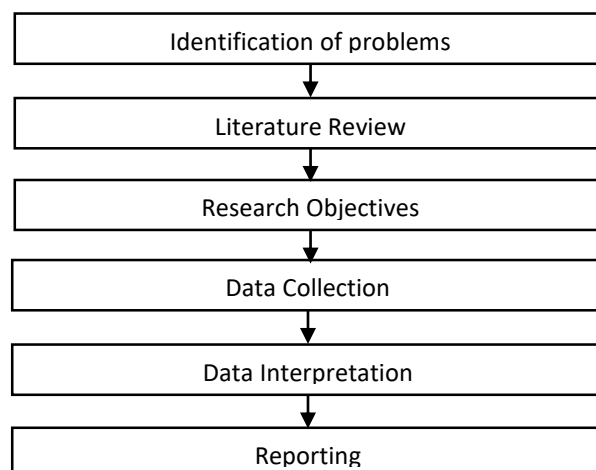


Figure 1. Stages of the Qualitative Method (Fadli, 2021)

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## III. RESULTS AND DISCUSSION

There were 15 scientific articles obtained from various national journals, spanning 2020-2023. The obtained articles were then analyzed using the Bibliometric method. Bibliometrics is defined as being able to measure or analyze books/literature using a mathematical and statistical approach (Royani & Idhani, 2018). The Bibliometric method may assist researchers study the contents of the bibliography, knowing the directions and trends being discussed from each article collected between 2020 and 2023. The 15 articles that have been examined are listed below:

**Table 1. Article Review Results**

No.	Title	Review Results
1.	Analysis of Potential Implementation of Metaverse in Interactive Educational Media ( <i>Analisis Potensi Implementasi Metaverse pada Media Edukasi Interaktif</i> ) (Akbar Endarto & Martadi, 2022)	This article discussed the potential implementation of metaverse technology as an interactive educational medium, employing a descriptive study method with a literature research approach and analyzing metaverse based on AR and VR from a design standpoint. This article also explored how the metaverse works, the benefits of using Augmented Reality (AR) and Virtual Reality (VR) in education, and the challenges and risks associated with metaverse technology. The conclusion is that while metaverse technology has great potential as an interactive educational medium, adequate infrastructure, training, and regulation are required to reduce risk and ensure equal access.
2.	Analysis of the Use of Metaverse Technology on Memory Formation in the Learning Process ( <i>Analisis Penggunaan Teknologi Metaverse terhadap Pembentukan Memori pada Proses Belajar</i> ) (Mulati, 2022)	This article discussed the use of metaverse technology in the learning process and its potential impact on memory formation in students. This article analyzed the effectiveness of the metaverse in memory formation based on Aristotle's law of association and highlights the benefits and risks of using this technology in education. While the potential of metaverse technology for memory formation in learning is promising, this article also emphasized the importance of control and digital literacy in ensuring responsible use.
3.	Analysis of Metaverse Potential in the Education Sector in Indonesia ( <i>Analisis Potensi Metaverse pada Dunia Pendidikan di Indonesia</i> ) (Setiawan, 2022)	This article discussed the use of bibliometric analysis to identify trends and patterns in the growth of scientific research on the metaverse of education. The analysis revealed that the metaverse of education has been actively debated by researchers in the last two years. This article also highlighted the advantages and potential challenges of implementing metaverse technology in education. The conclusion suggested that further research is required to thoroughly examine the metaverse potential in education in Indonesia.
4.	From Immersive to Metaverse: Learning and Technology Gaps in Application in Agricultural Education ( <i>Dari Immersive ke Metaverse: Kesenjangan Pembelajaran dan Teknologi dalam Penerapan di Pendidikan Bidang Pertanian</i> ) (Asfarian et al., n.d., 2022)	This article discussed the analysis of the gap between immersive technology implementation and mature metaverse in agricultural education. It concluded that most of the learning content and technology design elements of the metaverse have not been fully utilized. There are many implementation gaps between the current implementation of the mature metaverse. In addition, the education of the mature metaverse is complex and expensive. This study suggested careful long-term planning and identifies use cases for metaverse implementation in education. The authors encourage more research into the metaverse's potential for agricultural education.
5.	Readiness and Impact of Using Metaverse Technology in Education ( <i>Kesiapan dan Dampak Penggunaan Teknologi Metaverse dalam Pendidikan</i> ) (Salim et al., 2023)	This article discussed the impact of technology, particularly the metaverse, on education in Indonesia. This article emphasized the importance of quality education and the challenges faced by educators in adapting to technological advances. It also highlighted the significance of positive thinking and understanding change in effectively utilizing technology. This article concluded that metaverse technology has enormous potential in education, with the potential to increase motivation and expand traditional teaching practices.

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6.	Metaverse Potential and Opportunities in the Education Sector ( <i>Potensi dan Peluang Metaverse Dalam Dunia Pendidikan</i> ) (Bonafix & Nediari, 2022)	This article discussed the metaverse's potential and opportunities in education. Metaverse is a cutting-edge three-dimensional space technology that combines the real world and a sophisticated digital world. This article examined the challenges and impact of the metaverse in education, as well as how it can address emerging limitations in online learning. Although it has many advantages, the metaverse also has challenges such as freedom and students' readiness to enter the world of the metaverse. This article also emphasized the importance of collaborating between technology and educational research in order to create an effective and innovative metaverse educational platform.
7.	Metaverse: Learning Media in Society 5.0 Era to Improve Education Quality ( <i>Metaverse: Media Pembelajaran di Era Society 5.0 untuk Meningkatkan Kualitas Pendidikan</i> ) (Pangestu & Rahmi, 2022)	This article discussed the use of the metaverse as a learning medium in the era of Society 5.0 in order to improve the quality of education in Indonesia. Metaverse can be used in the skills-learning process to improve the quality of education in Indonesia. This article examined various aspects of using metaverse and other technologies in education, including strategies for preparing students for Society 5.0, the use of virtual reality in online learning, the potential of the metaverse in education, game-based learning with artificial intelligence and immersive technology, and the development of educational applications using augmented reality. This article also emphasized the possibilities and limitations of using metaverse in education, as well as the need for teachers to develop their competency in using this technology.
8.	Metaverse and Learning the History of Islamic Culture In Madrasah: Challenges And Opportunities ( <i>Metaverse dan pembelajaran sejarah kebudayaan Islam di madrasah: tantangan dan peluang</i> ) (Fauzian, 2022)	This article discussed the application of metaverse technology, particularly augmented reality (AR), in teaching Islamic culture and civilization in madrasah. This study aimed to analyze the implementation of the metaverse in teaching SKI and identify challenges and opportunities for teaching SKI in the metaverse era. The results revealed that using AR technology to teach SKI benefits students by improving education quality, student motivation, and media literacy. However, limited access to technology is a challenge. This article argued that digitalization is required for education to be able to adapt to technological advances and meet changing demands.
9.	Metaverse: Challenges and Opportunities in Education ( <i>Metaverse: Tantangan dan Peluang dalam Pendidikan</i> ) (Indarta et al., 2022)	This article discussed the challenges and opportunities of the metaverse in education, as well as how this technology is applied in education. Metaverse is considered to be capable of overcoming educational limitations, such as limited class capacity due to the pandemic, limited distance and time to enter class, and others. This article also discussed the benefits and risks of using metaverse in education, as well as the importance of integrating game-based learning and artificial intelligence with metaverse technologies to enhance cognitive and social skills in education. Meanwhile, there are some challenges that need to be overcome. Metaverse has the potential to improve the learning experience and educational quality in the future.
10.	Transformation of the Madrasah Education System in the Metaverse Discourse on the Indonesian Ministry of Religion Program ( <i>Transformasi Sistem Pendidikan Madrasah dalam Wacana Metaverse pada Program Kemenag RI</i> ) (Putri, 2022)	This article discussed the transformation of the Madrasah education system into a metaverse discourse in the future, the challenges faced, and the fundamental factors that make the metaverse discourse exist in Madrasah education. This article also discussed MadrasahLand as an innovation platform resulting from the transformation of the Madrasah education system into the metaverse. However, there are still a number of obstacles impeding its progress. This article also discussed the advantages and disadvantages of using metaverse technology in education, as well as the creation of MadrasahLand, a virtual platform for Madrasah education.

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11.	Metaverse as an Effort to Face Educational Challenges in the Future ( <i>Metaverse Sebagai Upaya Menghadapi Tantangan Pendidikan di Masa Depan</i> ) (Ujang Cepi Barlian, Nana Ismelani, 2022)	This article investigated the potential of the metaverse in education as a means of addressing future challenges. The metaverse is a virtual world in which users interact through digital avatars. This article described the metaverse concept and its potential applications in education, as well as the advantages and challenges of using it. This article also emphasized the importance of incorporating technological advancements into education in order to remain globally competitive.
12.	Utilization of the Metaverse in Education ( <i>Pemanfaatan Metaverse di Bidang Pendidikan</i> ) (Iswanto et al., 2022)	This article discussed the metaverse concept and its educational potential, as well as its limitations. This article also discussed four different metaverse categories, including augmented reality, lifelogging, mirror world, and virtual reality, as well as their implications for education. While the metaverse has the potential to revolutionize education and social communication, there are also privacy and data protection concerns that must be addressed. This article also analyzed the educational and entertainment applications of metaverse technology, as well as privacy and security concerns.
13.	Empowerment of Metaverse Technology for the Sustainability of the Education Sector ( <i>Pemberdayaan Teknologi Metaverse Bagi Kelangsungan Dunia Pendidikan</i> ) (Sultan & Tirtayasa, 2022)	This article discussed the potential of metaverse technology in increasing the sustainability of education in Indonesia. Metaverse is a 3D virtual world that makes use of augmented reality, virtual reality, and video technologies. However, the implementation of metaverse-based education still faces many challenges such as limited infrastructure and technology. This article also analyzed the challenges and limitations of the metaverse, as well as the potential use of augmented reality in education. Nonetheless, if used properly, the metaverse has the potential to significantly advance education.
14.	Implementation of Tri Kaya Parisudha's Teachings in Character Education in the Metaverse Generation ( <i>Implementasi Ajaran Tri Kaya Parisudha dalam Pendidikan Karakter pada Generasi Metaverse</i> ) (Mustofa & Novianto, 2022)	This article discussed the implementation of Tri Kaya Parisudha's teachings in character education for the metaverse generation. This article emphasized the importance of character education in facing the challenges of the metaverse era and the role of schools and teachers in shaping individual character. The concept of Tri Kaya Parisudha in Hinduism is also explained as a guide for good behavior and character building. This article also examined the rejection of the Hajj Metaverse by the Indonesian Ulema Council and the implementation of character education in Madrasah Tsanawiyah and Hindu teachings.
15.	Metaverse: Upcoming Education Concepts ( <i>Metaverse: Konsep Pendidikan yang Akan Datang</i> ) (Aripidi et al., 2022)	This article explored the metaverse concept in education and its potential to overcome the limitations of traditional online learning. This article employed qualitative methods with a literature review to gather data from various sources. The results revealed that the metaverse evolves over time and can be utilized to make online learning more interactive and flexible. This article also examined the history of online education and the impact of the COVID-19 pandemic on the education system. This article concluded that the metaverse has the potential to revolutionize education and create new opportunities for learning. However, while the metaverse has many educational benefits, it should be viewed as an additional tool rather than a substitute for traditional learning.

The results of the 15 articles demonstrate that the use of metaverse has significant benefits and potential in education, and can significantly increase educational progress. However, digitalization is required for education to be able to adapt to technological advances and meet changing demands.

As can be seen in Figure 1, the trend of research on the metaverse in education is illustrated based on articles from 2020-2023. The figure shows that much research has been conducted on education in the context of the metaverse and its relationship with technology-based learning. It is hoped that this will have a positive effect on educational quality in the future.

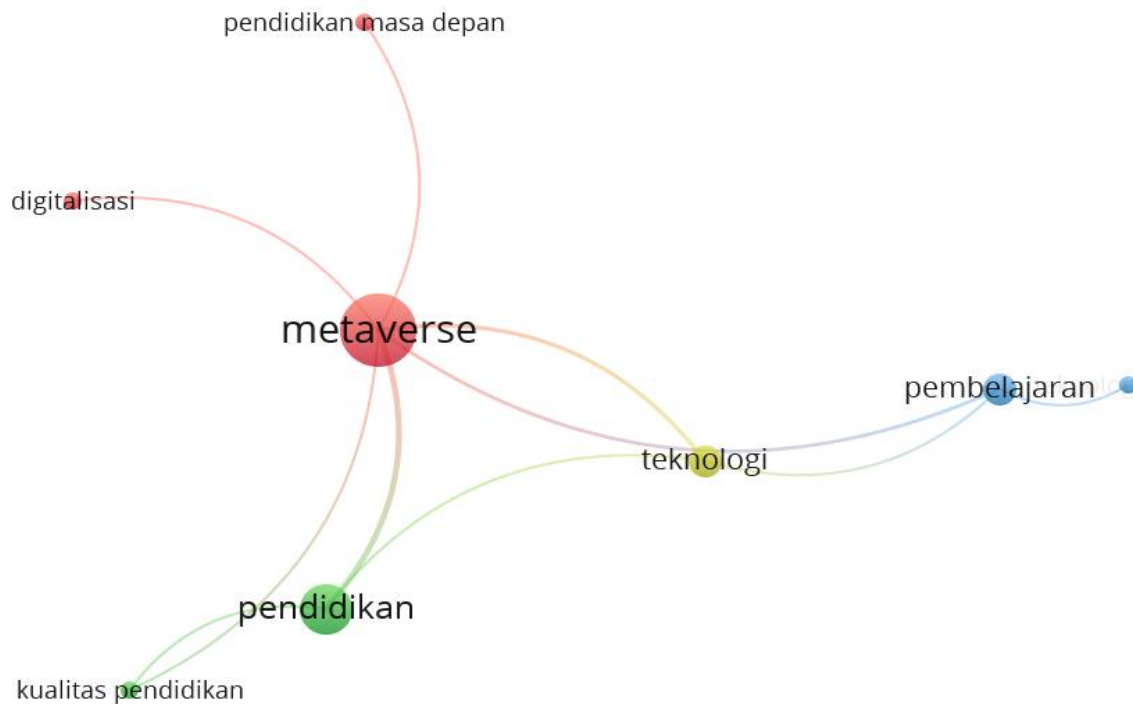


Figure 1. Visualization of Metaverse Trends in Education

#### IV. CONCLUSIONS

Based on the analysis of the research results regarding the metaverse in education, it is concluded that the application of the metaverse in education in Indonesia has great opportunities and potential to support the learning process. Although the concept of the metaverse and its application in education is still being developed and explored in Indonesia, technological advancements and growing interest in innovative learning approaches indicate that the metaverse has promising potential in the future. To improve the quality of education through the metaverse, we must conduct extensive research on the metaverse, including developing human resources, adequate infrastructure and access, and collaboration between educational institutions and industry partners in developing the use of the metaverse in education. Furthermore, digitization is required so that education can adapt to technological advances and meet the changing demands of the times.

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## Reviewing the Position of the Principle of Proportionality in Public Procurement Contracts



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**ABSTRACT:** Procurement of Goods / Services carried out by the Ministry / Institution / Regional Apparatus as needed in order to support their duties and functions. The goods/services procurement process includes two components, namely the user of goods/services (Ministry/Institution/Regional Apparatus) and the Goods/Services Provider. Goods/services users and goods/services providers are bound in a Goods/Services Procurement Contract. The Goods/Services Procurement Contract is usually standardized, where the Procurement Contract is made by one party, namely the Commitment Making Officer (PPK) and the service provider is only a signing party. The different position between the goods/services user and the goods/services provider in the standard goods/services procurement contract causes the distribution of rights and obligations between the parties to be unbalanced or does not reflect the principle of proportionality.

**KEYWORDS:** Goods/Services Provider, Goods/Services User, Public Procurement Contract, Principle of Proportionality

### I. INTRODUCTION

Government Goods/Services Procurement is an activity in order to obtain goods/services by Ministries/Institutions Regional Work Units/other institutions whose process starts from planning needs until the completion of all activities to obtain goods/services as stipulated in Presidential Regulation Number 12 of 2021 concerning the Second Amendment to Presidential Regulation Number 16 of 2018 concerning Government Procurement of Goods and Services. Government procurement of goods and services is divided into several procurement groups, namely; goods, construction work, construction services and other services. According to Christopher & Schooner, procurement is an activity to obtain goods or services transparently, effectively and efficiently in accordance with the needs and desires of its users.<sup>1</sup> In the process of procuring goods/services, e-procurement is also known. Adrianto defines e-procurement as the process of procuring goods/services through electronic auctions. In the process of procuring good/services, e-procurement is also known. Adrianto defines e-procurement as the process of procuring goods/services through electronic auctions.<sup>2</sup> Sutedi also said that e-procurement is an auction system in the procurement of government goods/services by utilizing information and communication technology based on the internet so that it takes place effectively, efficiently, openly and accountably.<sup>3</sup>

The importance of the goods/services procurement process in the implementation of national development for improving public services and developing the national and regional economies. In order to realize good government procurement of goods/services, it is necessary to regulate the procurement of goods/services that provide fulfillment of the maximum value of benefits (value for money) and contribute to increasing the use of domestic products, increasing the role of micro, small and medium enterprises and sustainable development.<sup>4</sup>

Procurement of goods/services involves two main components, namely the user of goods/services and the provider of goods/services. The relationship between the two is regulated in a contractual relationship. "The goods/services procurement contract is a variant of a contract where the government is a civil law subject and conducts civil relations with other civil law

<sup>1</sup> Badzlina D. Novitaningrum, "Accountability and Transparency of Government Procurement of Goods and Services through Electronic Procurement (Best Practices in Surabaya City Government)", *Journal of Public Policy and Management*, 2019, Volume 2 Number 1. 13-22.

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<sup>3</sup> Adrian Sutedi, 2012 *Legal Aspects of Procurement of Goods & Services and Various Problems*. Sinar Grafika. Jakarta. 254

<sup>4</sup> Government Procurement Policy Agency, "Overview of Public Procurement", 2020, Accessed from <https://virtuallibrary.lkpp.go.id/id/eprint/33/1/02.%20Buku%20Informasi%20A.%20Gambaran%20Uumum%20PBJP.pdf>



## Reviewing the Position of the Principle of Proportionality in Public Procurement Contracts

persons or entities subject to civil law norms (*sui generis*) or known as a procurement contract."<sup>5</sup> Therefore, the procurement contract must be subject to civil law norms or in other words, the concept of contract in civil law must be attached to the concept of procurement contract.

Ironically, procurement contracts are not based on the concept of civil law because procurement contracts are usually standardized. Munir Fuady explains that "a standard contract is a written contract made only by one of the parties to the contract. In fact, often the contract has been printed in the form of certain forms by one of the parties, in which case when the contract is signed, generally the parties only fill in certain informative data with little or no change in the clauses."<sup>6</sup> The procurement contract is also considered to be a manifestation of the free will of the parties in that the provider is limited by laws and regulations regarding the format of the contract, the clauses in the contract and its scope.<sup>7</sup> The dominance of the user of goods/services in the procurement contract reflects that the procurement contract does not reflect the application of the principle of proportionality because it puts the parties in an unbalanced or unbalanced position. This makes the distribution of rights and obligations of the parties unfair.

The principle of proportionality is one of the important principles and must be attached to the concept of goods/services procurement contracts. Agus Hernoko explained that "the principle of proportionality applies throughout the process of making a contract until the implementation of the contract in order to ensure a fair negotiation process, equality of rights, guaranteed distribution of the exchange of rights and obligations in proportion, and as a measure of the severity of the burden of proof."<sup>8</sup>

Departing from so many problems arising from the concept of goods/services procurement contracts in the field, the author is interested in further examining the standard contract for the procurement of goods/services with the title of the paper; REVIEWING THE POSITION OF THE PRINCIPLE OF PROPORTIONALITY IN GOVERNMENT PROCUREMENT CONTRACTS.

## II. LITERATURE REVIEW

### A. Overview of the Law of Treaties/Contracts

Article 1313 of the Civil Code provides a formulation of the Contract or agreement is an act by which one or more people bind themselves to one or more other people (Article 1313 Civil Code). Furthermore, Tirtodiningrat argues that "an agreement is a legal act based on an agreement between two or more people to cause legal consequences that can be enforced by law."<sup>9</sup>

There are three elements in the contract, namely; "the essential element, is an element that absolutely must exist for the occurrence of an agreement; The natural element, is an element that has been regulated in the law so that if it is not regulated by the parties in the contract, then the law regulates it; The incidental element, which is an element that will exist or bind the parties if the parties promise it. This element is an element that must be contained or referred to expressly in the agreement."<sup>10</sup> Furthermore, there are conditions for the validity or invalidity of a contract regulated in Book III of the Civil Code, namely: "<sup>11</sup>

1. Agreement of those who bind themselves (*de toestemming van degenen die zich verbiden*).
2. Capacity to make a contract (*de bekwaamheid om eene verbintenis aan te gaan*).
3. The object or subject matter is certain or can be determined (*eene bepaald onderwerp object*).
4. A cause or causa that is not prohibited (*eene geoorloofde oorzaak*)."

### B. Procurement of Government Goods/Services

Government Goods/Services Procurement, hereinafter referred to as Goods/Services Procurement, is the activity of procuring goods/services by Ministries/Institutions/Regional Apparatus financed by the APBN/APBD, the process of which starts from the identification of needs, up to the handover of work results. In Government Goods/Services Procurement there are several types of procurement, namely; a) Procurement of Goods, b) Procurement of Construction Work, c) Procurement of Consulting Services and Other Services.

In addition, there are also principles of goods/services procurement; a) efficient, b) effective, c) transparent, d) open, e) competitive, f) fair; and g) accountable.

<sup>5</sup> Riawan Tjandra, 2003 Contract Law from the Perspective of Business Law. Citra Aditya Bakti. Bandung. 121

<sup>6</sup> Munir Fuady, 2003 Contract Law from the Perspective of Business Law. Citra Aditya Bakti. Bandung. 76.

<sup>7</sup> Muskibah, Lili N Hidayah, "Application of the Freedom of Contract Principle in Standard Contracts for Government Procurement of Goods/Services in Indonesia", *Journal of Legal Sciences Legal Reflection*, 2020, Volume 4 Number 2, 177.

<sup>8</sup> Agus Yudha Hernoko, 2010 The Law of Treaties: The Principle of Proportionality in Commercial Contracts. Prendamedia Group. Jakarta. 323.

<sup>9</sup> *Ibid*.

<sup>10</sup> Sudikno Mertokusumo, 2010 Getting to Know the Law. Cahaya Atma Pustaka. Yogyakarta. 154-155.

<sup>11</sup> Muhammad Syaifuddin, 2012 Contract Law: Understanding Contracts in the Perspectives of Philosophy, Theory, Dogmatics and Legal Practice. CV Mandar Maju. Bandung. 110.

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### C. Goods/Services Procurement Contract

The types of contracts are as follows; a) Types of Contracts for Procurement of goods/Construction Works and other Services; Lump Sum, Unit Price, Combined Lump Sum and Unit Price, Turkey and Umbrella Contracts; b) Types of Consulting Services Procurement Contracts consist of Lump Sum, Assignment Time and Paying Contracts; c) Forms of Government Goods/Services Procurement Contracts consist of; proof of purchase/payment; receipts; work order (SPK); agreement letter; and order letter.

### D. Legal Principle of Proportionality

Herlien Budiono argues that the principle of proportionality as an ethical principle and as a juridical principle. As an ethical principle, there is an idea of balance where there is a recognition of the equal position of individuals and communities in a common life.<sup>12</sup> It is also intended that the agreement between the parties is considered binding as long as it is based on a balanced relationship between the interests of both parties as each party expects it. Furthermore, the principle of proportionality as a juridical principle where every agreement between the parties based on the principle of balance can give rise to proper and fair juridical attachments. The principle of proportionality must have certain criteria so that a contract can be qualified as a fact or condition that gives rise to legal binding which in turn can be tested by juridical attachment based on the principle of proportionality.<sup>13</sup>

## III. RESEARCH METHODS

The approach method of this research is normative juridical. The normative juridical method is legal research conducted by examining library materials consisting of primary legal materials, secondary legal materials, and tertiary legal materials. Conducted through literature studies that examine secondary data in the form of laws and regulations, court decisions, agreements, contracts, or other legal documents, as well as research results, assessment results, and other references. In addition to the legislative approach, this research also uses a conceptual approach. Data collection is carried out by literature study to obtain data in the form of documents and writings through searching for laws and regulations, documents, scientific literature, research by experts.

## IV. DISCUSSION

The concept of the principle of proportionality in procurement contracts means that in procurement contracts there is a balanced and fair exchange of rights and obligations between the parties in the entire contractual process. As a manifestation of the doctrine of fairness in contracting, the principle of proportionality is interpreted as the concept of justice. Aristotle defines justice in his work "Nicomachean ethics", as doing good or justice is the main virtue. According to Aristotle, "justice consists in treating equals equally and unequals unequally, in proportion to their inequality." This principle proceeds from the assumption "that equals should be treated equally, and unequals unequally, in proportion to their inequality."<sup>14</sup> In addition, Ulpianus also described justice as "justitia est constans et perpetua voluntas ius suum cuique tribuendi" which means "justice is the continuous and permanent will to give to each what is due to him" or "tribuere cuique suum" - "to give everybody his own", giving to each person what is due to him.<sup>15</sup>

The principle of proportionality as a manifestation of the doctrine of fairness in contracting must guarantee freedom of contract. The meaning of freedom of contract is that the contract is born *ex nabilo*, namely the contract as a manifestation of the freedom of will of the parties who make the contract.<sup>16</sup> This means that the standard contract does not provide space for one party to impose its free will on the other party or place the position of the other party as a party who must comply with the contract. In line with Lyon, according to Lyons, a real contract climate essentially provides opportunities for differences of opinion, bargaining, or even differences in relevant differences between the parties. Only in such a process will the outcome of an agreement truly reflect the interests of all parties.<sup>17</sup>

The principle of proportionality itself is actually not regulated in legislation. Herlien Budiono argues that the principle of proportionality is the result of extracting the principles that apply in Indonesian society based on Indonesian legal awareness

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<sup>12</sup> Herlien Budiono, 2015 *The Principle of Balance for Indonesian Treaty Law Treaty Law Based on Indonesian Principles of Obligations*. PT Citra Aditya Bakti. Jakarta. 304-305.

<sup>13</sup> *Ibid.*

<sup>14</sup> Mohammad Iqbal Rahmawan, et al, "APPLICATION OF THE PROPORTIONALITY BASIS IN A FRANCHISE AGREEMENT", *NOTARIUS Journal*, 2019, Volume 12 Number 2. 910.

<sup>15</sup> O.Notohamidjojo, 1997 *The Problem of Justice: Its Nature and Application in the Fields of Society, Culture, State and Inter-State*. Tirta Amerta. Semarang. 18-19.

<sup>16</sup> Muskibah & Lili N. Hidayah, *Op. Cit.*, 177.

<sup>17</sup> Andre Ata Ujan, 1999 *Justice and Democracy (An Analysis of John Rawls' Political Philosophy)*. Kanisius. Yogyakarta. 140.

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and also customary law, namely mutual cooperation, kinship, harmony, proper, appropriate, and barrel.<sup>18</sup> This means that even though it is not regulated, this proportionalist principle must be used as one of the principles in the concept of making government goods/services procurement contracts. But ironically, one example where the goods/services procurement contract is not based on the principle of proportionality is as stipulated in Government Regulation No. 29 of 2000 concerning the Implementation of Construction Services related to the Obligation of Service Providers, namely service providers signing construction work contracts within the time limit specified in the tender document. This obligation shows that the service provider is only placed as a party who signs the contract and is not involved in the process of forming the contract, meaning that a balanced and fair exchange of rights and obligations is not created. Indeed, the contractual relationship in a standard contract according to Rayno Dwi Adityo has a currency dimension where one side of the standard contract becomes invalid and on the other hand the standard contract can be said to be legal and its existence is needed.<sup>19</sup> But in principle, the standard contract must still guarantee the rights and obligations of the parties proportionally. This means that the standard procurement contract must place the bargaining position between the user of goods/services and the goods/services provider must be balanced. Therefore, the application of certain clauses by the party in a stronger position that results in harm to the weaker party is usually known as misuse of circumstances. Misuse of circumstances occurs when a person knows or should understand that the other party due to a special situation such as an emergency, dependence cannot think long, abnormal mental state or inexperience is moved to perform a legal act, even though he knows or should understand that he should actually prevent it.<sup>20</sup> So that the procurement process is carried out in accordance with the procurement principles, namely; a) efficient; b) effective; c) transparent; d) open; e) competitive; f) fair; and g) accountable.<sup>21</sup>

Seeing the magnitude of the role of goods/services procurement in the process of increasing national economic development, the procurement process must be carried out properly, including in terms of the goods/services procurement contract which must guarantee the rights and obligations of the parties proportionally. In the procurement contract, the position of the principle of proportionality must already exist starting from the process of making the contract to the implementation of the contract in order to ensure a good negotiation process, equality of rights and guaranteed distribution of rights and obligations accordingly and also as a measure of the severity of the burden of proof.<sup>22</sup> In addition, in the perspective of applying the principle of proportionality in standard contracts regarding the transparency of proportional rights and obligations as well as showing the principle of good faith.<sup>23</sup>

Agus Yudha Hernoko provides an overview of the characteristics of contracts based on the principle of proportionality, as follows;<sup>24</sup>

- a. A contract based on the principle of proportionality is a contract that recognizes the rights, opportunities and equal opportunities for the parties to the contract to determine a fair exchange for them. Equality is not in the sense of equality of results but in the position of the parties, namely the existence of equality of position and rights (eguitability), the principle of equal rights / equality of rights;
- b. Based on the equal rights/equality of rights, the contract with the principle of proportionality is a contract based on the freedom of the contractors to determine the substance of what is fair and what is unfair to them (principle of freedom);
- c. A contract with the principle of proportionality is a contract that is able to guarantee the exercise of rights while at the same time distributing obligations proportionally to the parties. It should be underlined that fairness does not necessarily mean that everyone should always get the same amount of something, in which case different outcomes are possible. In this case, the principle of proportional distribution of the rights and obligations of the parties must refer to a fair exchange (principle of proportional distribution).
- d. In the event of a contract dispute, the burden of proof, the degree of fault and other related matters must be measured based on the principle of proportionality to obtain an elegant settlement and win-win solution.

The characteristics of contracts based on the principle of proportionality place the parties in a balanced position or do not create domination by one party. A position dominated by one party, especially the party making the procurement contract, opens up a wide opportunity for him to abuse his position where he only regulates his rights but not his obligations. Nieuwenhuis argues that if "the factual position of one party against the other is stronger so that it affects the content of the

<sup>18</sup> Herlien Budiono, 2014 General Principles of Covenant Law and Its Application in the Field of Kenotariatan. Publisher of PT Citra Aditya Bakti. Bandung. 32.

<sup>19</sup> Rayno Dwi Adityo, "The Effectiveness of Standard Contracts in Business Mobility", Journal Court, 2016, Volume 1 Number 2. 111-119.

<sup>20</sup> Dedi Harianto, "The Principle of Freedom of Contract: Problems of Its Application in Standard Contracts Between Business Actors and Consumers." Samudra Keadilan Law Journal, 2016, Volume 11 Number 2. 152.

<sup>21</sup> *Ibid.*,

<sup>22</sup> Agus Yudha Hernoko, *Op. Cit.*, 323.

<sup>23</sup> Rayno Dwi Adityo, *Op. Cit.*, 123.

<sup>24</sup> *Ibid.*, 88-89.

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contract, both the content, purpose and objectives of the contract, the contract must be rejected, because of the inequality of performance in the contract."<sup>25</sup> Similarly, Lyon argues that "a contractual climate of disagreement, bargaining or even relevant differences between the parties indicates a free exchange of ideas that creates a mutual agreement based on principles of fairness."<sup>26</sup>

In the end, the principle of proportionality has a very important function in a procurement contract both in the formation of the procurement contract and in the implementation of the procurement contract. The function of the principle of proportionality in a contract as stated by Agus Yudha Hernoko, namely;<sup>27</sup>

- a. In the pre-contract stage, the principle of proportionality opens negotiation opportunities for the parties to make a fair exchange of rights and obligations. Therefore, it is disproportionate and must be rejected by the negotiation process in bad faith;
- b. In contract formation, the principle of proportionality guarantees equality of rights and freedom to determine/set the proportion of rights and obligations of the parties in a fair manner;
- c. In the implementation of the contract, the principle of proportionality guarantees the realization of the distribution of the exchange of rights and obligations according to the agreed proportion / imposed on the parties;
- d. In the event of a failure in the implementation of the contract, it must be assessed proportionally whether the failure is fundamental (fundamental breach) so as to interfere with the implementation of most of the contract or just simple things/minor errors (minor importance).
- e. Even in the event of a contract dispute, the principle of proportionality emphasizes that the proportion of the burden of proof to the parties must be divided according to fair considerations.

Therefore, the standard contract for the procurement of government goods/services both in the stage of forming a standard procurement contract and at the stage of implementing a standard procurement contract must be based on the principle of proportionality in order to ensure equal distribution of rights and obligations between the parties to the standard procurement contract proportionally. The emphasis on the equality of the position of the parties in the procurement contract must be seen in the aspect of the formation of the contract not on the achievement achieved as stated by Niewenhuis, namely as long as the agreed achievement is reciprocal, it presupposes the equality of the position of the parties, which in the event of an imbalance, the focus of attention will be on equality related to the way the contract is formed, and not on the final result of the achievement.<sup>28</sup> This certainly reflects the concept of the principle of proportionality in contracts where there is equality of position and achievement between the contracting parties.

## V. CONCLUSIONS

The formation of public procurement contracts must pay attention to aspects of the values of the principle of proportionality where there is involvement of each party in the contract-making process. In the process of making contracts for the procurement of goods/services based on the principle of proportionality, the exchange of rights and obligations between users of goods/services and providers of goods/services. Contracts for the procurement of goods/services that are not based on the principle of proportionality will create domination of one party over the other so that there is unfairness in contracting between the parties.

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<sup>26</sup> Agus Yudha Hernoko, *Op. Cit.*, 86.

<sup>27</sup> Agus Y. Hernoko, "The Principle Of Proportionality As The Basis For The Exchange Of Rights And Obligations Of The Parties In Commercial Contracts", *Journal of Law and Justice*, 2016, Volume 5 Number 3. 459.

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## Languages of Empathic Teaching: An Overview of Bulsu Hagonoy Campus Faculty Members' Role as Second Parents to Students



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### INTRODUCTION

One of the fundamental aspects of achieving quality teaching and student learning is the development of positive teacher-student relationships. Positive teacher-student relationships promote a sense of belongingness as well as encourages the students to actively and cooperatively participate in school. The confidence of students to explore learning and their ability of becoming successful is developed thru an environment which is not constrained by their fear of failure. Teachers motivates the students in setting their goals and maximize their potential towards the achievement of their goals. In addition, teachers are responsible for the students holistic development.

According to Gillespie (2002) as cited by Hattie (2015) the inherent qualities of a student-teacher relationship such as caring, knowing, trust and mutual respect as well as the teacher's rapport with students resulted in a classroom environment where students were affirmed and supported to achieve their best.

Also, John Hattie (2015) identified a number of influences related to effective learning and achievement such as teaching strategies, classroom discussion, cohesion and behavior, as well as teacher expectation, immediacy and credibility. An atmosphere of positive and supportive classroom environment with a blend of productive relationships between teachers and their students provides a platform in which students are encouraged and motivated to grow not just academically but also personally. Hattie have noted in his study that a harmonious classroom can assist with the development of creativity as well as reduce anxiety levels amongst students. The impact of teacher-student relationships upon a student's mental health should not be ignored. With the help of a support framework, it is thought that the risk of young people struggling with mental illness can be diminished. In this instance, teachers act as a powerful and effective means of support and encouragement when this may not always be available in the students home environment.

For such reasons, the young generation of today search for great teachers who shows kindness to colleagues, parents, and to other persons they dealt with specially to the students. A teacher changes the atmosphere inside and outside the classroom and school where the students feel welcomed, loved and cared for. Teachers have their own unique ways of making things better and improve things inside and outside of the classroom.

Morover, teaching also involves compassion which is the utmost feeling of showing others that someone is concerned and understands them. Another important ingredient of teaching is compassion in which a teacher models that characteristic to the students in each and every actions he/she has, leading the students to be more open to appreciate, love and understand the world around them.

One more integral aspect of teaching is empathy which is an important trait for educators to have and to develop since they have a powerful impact on the actions, decisions and overall development of the students inside and outside the school. An empathic teacher has a strong desire to educate students by establishing a genuine connection and understanding inspite and despite of the diversity of their origin and individual peculiarities. A teacher modeling empathy in the classroom also have the ability to foster it to the learners which is an effective pathway of imparting knowledge and lifelong learning. Significantly, teachers can have a great impact on the students well being if they involve themselves to both intellectual and emotional development of their students. As empathic teacher provides each student a framework to build on and a structure to respond with, all thoughts, opinions, feelings and differences are uplifted giving each student the perception that their teacher has the best interest at heart.

Another point to take into account is that empathy provides a foundation for guiding an individuals' behaviors toward others, said Chris Allen Thomas in 2013. According to him, there are two kinds of empathy in the human experience: affective empathy and cognitive empathy. The subjective state resulting from emotional contagion which is a persons' automatic drive to

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respond appropriately to another's emotion is referred to as affective empathy, also called primitive empathy or emotional empathy. This kind of empathy happens unconsciously and automatically and has also been referred to as remote sharing of emotions. Cognitive empathy on the other hand is sometimes called perspective taking and is considered as the principal conscious drive to recognize accurately and understand others' emotional state.

### **REVIEW OF RELATED LITERATURE**

Some of the factors of becoming a great teacher are credentials, intelligence, critical thinking and experience. Hence, a great teacher should be much more than the aforementioned factors because teaching is a profession that requires the heart and educators should be aware of the various ways of becoming an empathic teacher to achieve and realize this task.

Bobette Bouton (2016) mentioned in his study *Empathy Research and Teacher Preparation: Benefits and Obstacles* that teaching and training the socio-emotional trait of empathy is an important skill for pre-service teachers to develop. Much more of the teacher practitioners that needs to develop such skill, since it is their deemed responsibility to facilitate teaching and learn to the students.

White (1999) outlined that one of the four personal-social emotional feelings that impact teaching and classroom learning is empathy and understanding of the student. Every student may be characterized by their individual differences that the teacher is expected to differentiate for him/her to understand each of the students and address their needs.

According to Joseph Alan Hendershott (2014), The need to understand empathy and the important role it can play in school cultures and students' lives requires that educators first understand the current perceptions of empathy. Our ability to appreciate others' surroundings, cultural norms, differences, or perspectives can impact our teaching and learning preparations and processes. The logical progression is that through establishing empathic connections and modeling an empathic posture with students, children will learn empathy with one another. Developing a perspective to appreciate and respect others' differences is not only beneficial to everyone in the school yard, but it evolves into a lifelong asset in one's character. In addition, it is believed that every student should have the opportunity to understand and feel empathy through education and experiential learning. Educating the whole child is an educator's ultimate responsibility.

According to Carolyn Casale et al. (2017) about *Developing Empathetic Learners*, there is a need to create empathetic learners who think critically, reflect, and have compassion. The findings of this study suggest that students are more likely to express empathy toward those who are different from themselves in classroom environments that explicitly foster openness to diverse views.

Endacott & Brooks (2013) studied that historical empathy includes seeing how individuals from the past idea, felt, decided, acted, and confronted outcomes inside a particular or within a specific historical and social context. Also it is the process of students' cognitive and affective engagements incorporating historical figures to better understand and contextualize the students lived experiences, decisions, or actions.

Stojiljkovic, Snezana et al. (2012) studied empathy and teachers role which discusses that teaching as a profession is related to various roles such as: plain teaching of teachers, teachers as motivator and evaluator, teachers as social relations manager and partner in the emotional interaction. The purpose of the study is to investigate whether empathy (empathy quotient and emotional empathy) is connected to the self-assessment of success in teachers; role performing. The research findings show that empathy may contribute to the successful professional roles. Empathy is often cited as a very important characteristic of teachers, which enable adequate communication between the participants of the educational process. Emotional competencies are essential for successful carrying out the various professional roles of teachers

Rusul Alrubail (2015) discussed in his study *The Heart of Teaching: What It Means to Be a Great Teacher*, the qualities of a great teacher such as kindness, empathy, and a focus on building community. It is important to develop and to have empathy in ourselves and in our students. The ability to put yourself in someone's shoes and see things from their perspective can greatly influence our decisions and actions. Students are at their highest capacity to learn and become excellent when surrounded by positive relationships. Modelling empathy in the classroom promotes such relationships.

Today's youth initially enters the educational environment with all types of problems and concerns. In order to counteract this situations, an empathetic teacher promotes nurturing and support to the students and sets appropriate guidelines on how students interact with one another, In such a way every student is given a safe place to work with and overcome issues on cultural, racial, socioeconomic, and personal matters. Empathy is considered as an important tool for teachers and students to socially, intellectually, and emotionally learn and grow. Empathetic teacher can cultivate the minds of young students. The best ways of becoming a more empathetic teacher (2018).

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<https://www.wabisabilearning.com/blog/6-ways-becoming-a-more-empathetic-teacher>

Summarizing the above cited related literatures, having empathy is an individual's ability to see, understand and work with other individual's perspective. It is also a skill where in they are able to see and put themselves in the situation of others. These traits are most expected from teachers who are responsible in moulding the individuality of each students towards their fullest potential. It is the ultimate happiness of teachers to see how the seeds of knowledge that they have planted to every student grows and nourishes over time. The fulfillment of this task depends on how the teachers played their role of being the second parent of their students. For every parent dreamed of having the most wonderful children and so does teachers too.

### **Purpose and Objectives of the Study**

Indeed, the need to realize the purpose of this study which is to establish an overview of the various languages of empathic teaching that the faculty members of Bulacan State University Hagonoy Campus employ in their teaching is really an avenue to highlight the vital role of teachers as second parents to the students.

This study aims to examine how may the responses of the respondents may be described in terms of their demographic profile such as age, sex and length of teaching experience. Also this study aims to elaborate on how the respondents see themselves based on the traits being described on the instrument. In addition with, this study also aims to extricate affective empathy with cognitive empathy as two distinct types of empathy as well as to examine if there is no significant difference between affective empathy and cognitive empathy that the faculty members of BulSU Hagonoy Campus possess.

### **Significance of the Study**

Significantly, this study will be beneficial to the faculty members of BulSU Hagonoy Campus since they could have a chance to reflect on their own ways of teaching and interacting with the students. Similarly, the top managers of the different program offerings of BulSU HC will have an insight of how the faculty members treat their students, how to they dealt with them and how they address the needs of their students. Additionally, the campus administrator will have an overview of how the faculty members satisfy their role of being a second parent to the students. Ultimately, this study will be very much beneficial to the students of BulSU HC since they are the primary individual to experience empathic teaching from their teachers.

### **Scope and Delimitations of the Study**

The study is only intended for the benefit of BulSU Hagonoy Campus faculty members since they are the key components of the continous growth and development of the campus and of the success of every students. The researcher have utilized quantitative method of research to realize the objectives of the study. Also, the researcher also utilized purposive sampling since only the full time faculty members of BulSU Hagonoy Campus are the target respondents of the study. The researcher have used survey questionnaires to gather the necessary information to which the respondents responded based on how they see themselves having the traits of the teachers as described in the research instrument. Also the instrument of this study have utilized likert scale with a scale of 1-4 that is an orderly scale from which respondents choose the option that best supports their opinion. Likert scale was used to measure teachers' attitude by measuring the extent to which they agree or disagree with a particular question or statement. A scale of 1-4 does not allow the participant to give a neutral answer which enables the repondents to play safe in answering the questionnaire.

## **METHODOLOGY**

This study have utilized Descriptive Research which was defined by Koh E.T., Owen W.L. (2000) as a study of status and is widely used in education, nutrition, epidemiology, and the behavioral sciences. Through observation, analysis, and description problems can be solved and practices can be improved. Correspondingly, descriptive research also aims to accurately and systematically describe a population, situation or phenomenon and it can answer what, when, where, when and how questions, but not why questions. The research instrument that was used in this study was divided in two parts, which is the profile of the respondents (Part I) and a questionnaire containing described traits of a teacher (Part II) which was adopted from Empathy Formative Questionnaire by Erickson Gaumer et al. (2015). <http://www.researchcollaboration.org/uploads/EmpathyQuestionnaireInfo.pdf>

Purposive Sampling was used in 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, sex and length of teaching experience. For the presentation of the languages of empathic teaching of BulSU Hagonoy Campus, the researcher considered mean as the measure of central tendency to identify how may the demographic profile of the respondents affect their responses and how the respondents see themselves based on the traits being described. Also T-test is also utilized in examining the significant difference between affective and cognitive empathy.



## Languages of Empathic Teaching: An Overview of Bulsu Hagonoy Campus Faculty Members' Role as Second Parents to Students

There are 32 fulltime faculty members from the different programs of BulSU Hagonoy Campus that was purposely targeted as respondents.

To measure and interpret the evaluation results of the study, the following Likert scale was used;

Rating	Descriptive Interpretation	Range of Weighted Mean	Description
4	Very like me	3.26 – 4.00	The respondent believes that the trait being describe on that criterion is very like him or her.
3	Like me	2.51 – 3.25	The respondent believes that the trait being describe on that criterion is like him or her.
2	Slightly like me	1.76 – 2.50	The respondent believes that the trait being describe on that criterion is slightly like him or her.
1	Not very like me	1.00 – 1.75	The respondent believes that the trait being describe on that criterion is not very like him or her.

### RESULTS AND DISCUSSION

The profile of the respondents according to age are as follows: 28.125% came from ages 20-25 years old, 15.625% with ages 26-30 years old, there are 9.375% for ages 31-35 years old and 36-40 years old, another 15.625% for ages 41-45 years old, 6.25% for ages 46-50 years old, another 9.375% for ages 51-55 years old and another 6.25% for ages 56-60 years old. The data shows that the teaching force of BulSU Hagonoy Campus is composed of a larger percentage of teachers from early twenty's and ages 26-30 is the second highest group according to age. Ages 31 and beyond incorporates a lesser number of teachers. Hence, these ages may or may not affect the responses of the respondent but rather how they see themselves on the described traits provided in the instrument.

For the profile of the respondents according to sex, there are 59.375% male and 43.625% female. The researcher have observed from the responses that there are more male respondents who have considered choosing "slightly like me" compared to female. Perhaps this comparison leads to the idea that female respondents are more empathic than male.

Lastly, for the profile of the respondents according to the length of teaching experience, there are 40.625% with 1-5 years teaching experience, 34.375% with 6-10 years teaching experience 3.125% with 10-15 years of teaching experience, 15.625% with 16-20 years of teaching experience and 6.25% with 21 years and above teaching experience. The data shows that about 60 percent of the teachers of BulSU Hagonoy Campus have atleast 6 years teaching experience that may or may not have affect their responses to the questions.

The Languages of Empathic Teaching of BulSU Hagonoy Campus Faculty Members are measured based on the evaluation criteria presented on the table below:

## Languages of Empathic Teaching: An Overview of Bulsu Hagonoy Campus Faculty Members' Role as Second Parents to Students

### Frequency Distribution and Descriptive Interpretation of the Languages of Empathic Teaching of BulSU Hagonoy Campus Faculty Members

Evaluation Criteria	Frequency				Mean	Descriptive Interpretation
	4	3	2	1		
I try to see things from the point of my student's view.	19	12	1	0	3.56	Very like me
When I don't understand my student's point of view, I ask questions to learn more.	21	11	0	0	3.66	Very like me
When I disagree with my students, it's hard for me to understand their perspective.	3	15	12	2	2.59	Like me
I consider my student's circumstances when I am talking with them.	22	10	0	0	3.69	Very like me
I try to imagine how would I feel if I am in my student's situation.	22	9	1	0	3.66	Very like me
When anyone of my student is upset, I try to remember a time when I felt the same way.	14	15	3	0	3.34	Very like me
When my students is feeling excited, I feel to get excited too.	17	11	4	0	3.41	Very like me
Sometimes I wonder what it would feel like to be in my students' situation.	17	13	2	0	3.47	Very like me
When a one of my student is upset, I try to show them that I understand what they feel.	14	18	0	0	3.44	Very like me
I say things like "I can see why you feel that way".	15	16	1	0	3.44	Very like me
When anyone of my students is sad, my actions let them know I understand and I am willing to listen to them whenever they feel like talking.	18	14	0	0	3.56	Very like me
I say things like "Something like that happened to me once, I understand how you feel.	19	11	2	0	3.53	Very like me
I always listen to what my students are saying without judging them.	22	9	1	0	3.66	Very like me
When I know that anyone of my students is upset, I try to talk to them about it.	15	14	3	0	3.38	Very like me
I try not to interrupt when one of my students is explaining.	17	14	1	0	3.50	Very like me
I allow my students to express their feeling and offer my support.	25	7	0	0	3.78	Very like me
I accept each of my student's peculiar ways of knowing, being and feeling each day.	17	15	0	0	3.53	Very like me
I am able to identify wounded (upset) students in the classroom.	14	15	3	0	3.34	Very like me
I know how to work with wounded (upset) students in the classroom .	12	19	1	0	3.34	Very like me
I feel adequately equipped as an educator to be emphatic towards my students.	15	17	0	0	3.47	Very like me
<b>Weighted Mean</b>					<b>3.47</b>	<b>Very like me</b>

The results of the evaluation showed that the measure of central tendencies of the respondents in all of the criterion have a mean value that ranges from 3.34 – 4.00 except for criterion number 3 which has a mean value of 2.59. The highest mean was 3.78, which shows the language of emphatic teaching of BulSU Hagonoy Campus Faculty members on that criteria to be very like them as they believe that they allow their students to express their feelings and offer their support. The lowest mean was 2.59 which shows the respondents to be like as what was described on that criteria when they disagree with their students, it's hard for them

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to understand the students perspective. The weighted mean of the evaluation was 3.47 for which descriptive interpretation was "Very like me". Based from the results, majority of the repondents believe that the languages of emphatic teaching of BuLSU Hagonoy Campus Faculty members as described in all of the criteria was very like them.

### Frequency Distribution and Descriptive Interpretation of the Languages of Empathic Teaching of BulSU Hagonoy Campus Faculty Members according to Affective Empathy

Evaluation Criteria	Frequency				Mean	Descriptive Interpretation
	4	3	2	1		
I try to imagine how would I feel if I am in my student's situation.	22	9	1	0	3.66	Very like me
When anyone of my student is upset, I try to remember a time when I felt the same way.	14	15	3	0	3.34	Very like me
Sometimes I wonder what it would feel like to be in my students' situation.	17	13	2	0	3.47	Very like me
When anyone of my students is sad, my actions let them know I understand and I am willing to listen to them whenever they feel like talking.	18	14	0	0	3.56	Very like me
I accept each of my student's peculiar ways of knowing, being and feeling each day.	17	15	0	0	3.53	Very like me
I am able to identify wounded (upset) students in the classroom.	14	15	3	0	3.34	Very like me
I feel adequately equipped as an educator to be emphatic towards my students.	15	17	0	0	3.47	Very like me
<b>Weighted Mean</b>					<b>3.48</b>	<b>Very like me</b>

Considering that affective empathy relates to an individual's capacity to share in another's feelings and includes mirroring what the other individual is feeling or having his/her own unique physical or emotional reaction about something. The results revealed that among the twenty traits being described there are seven of which that illustrates affective empathy and the respondents believe that they were very like those traits which resulted to a weighted mean of 3.48.

### Frequency Distribution and Descriptive Interpretation of the Languages of Empathic Teaching of BulSU Hagonoy Campus Faculty Members according to Cognitive Empathy

Evaluation Criteria	Frequency				Mean	Descriptive Interpretation
	4	3	2	1		
I try to see things from the point of my student's view.	19	12	1	0	3.56	Very like me
When I dont understand my student's point of view, I ask questions to learn more.	21	11	0	0	3.66	Very like me
When I disagree with my students, its hard for me to understand their perspective.	3	15	12	2	2.59	Like me
I consider my student's circumstances when I am talking with them.	22	10	0	0	3.69	Very like me
When my students is feeling excited, I feel to get excited too.	17	11	4	0	3.41	Very like me

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When a one of my student is upset, I try to show them that I understand what they feel.	14	18	0	0	3.44	Very like me
I say things like "I can see why you feel that way".	15	16	1	0	3.44	Very like me
I say things like "Something like that happened to me once, I understand how you feel.	19	11	2	0	3.53	Very like me
I always listen to what my students are saying without judging them.	22	9	1	0	3.66	Very like me
When I know that anyone of my students is upset, I try to talk to them about it.	15	14	3	0	3.38	Very like me
I try not to interrupt when one of my students is explaining.	17	14	1	0	3.50	Very like me
I allow my students to express their feeling and offer my support.	25	7	0	0	3.78	Very like me
I know how to work with wounded (upset) students in the classroom .	12	19	1	0	3.34	Very like me
<b>Weighted Mean</b>					<b>3.46</b>	<b>Very like me</b>

On the other hand, Cognitive empathy is being able to understand another's perspective and comprehend why a particular person might be feeling a certain way. By way of this, thirteen out of the twenty traits being described that shows how cognitive empathy was employed by the BulSU Hagonoy Campus faculty members in fulfillinf their role as second parents to their students and this have resulted to a weighted mean of 3.46.

Noticeably, there is a very small difference with the weighted mean of both affective and cognitive empathy. Somehow the results reveals that empathy integrates this two kinds.

### Significant Relationship of Affective Empathy and Cognitive Empathy as Languages of Empathic Teaching of BulSU Hagonoy Campus Faculty Members

Variables	Standard Deviation	Mean	T-Value	Interpretation	Decision
<b>Affective Empathy</b>	9.99	3.48	0.005	Not Significant	Accepted
<b>Cognitive Empathy</b>	7.61	3.46			

**(Less than 1.960 at 0.05 level of significance – Accepted)**

**(Greater than 1.960 at 0.05 level of significance – Rejected)**

As shown on the table, the T-Value obtained between the two variables affective empathy and cognitive emphy is 0.005 which was interpreted as not significant and it is less than the critical value of 1.960 at 0.05 level of significance therefore the null hypothesis will be accepted.

### CONCLUSION

Through the conduct of this study, the researcher had determined that the faculty members of BulSU Hagonoy Campus are empathic teachers and that they varied languages of employing empathy to their teaching profession. Also, distinguishing affective empathy from cognitive empathy is sometimes hard because a person needs to develop first empathy within themselves

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before they understand it thoroughly. But it should be noted that affective empathy is automatic while cognitive empathy is a skill that can be deliberately learned and is required to acquire by everyone.

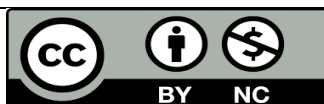
### RECOMMENDATIONS

In view of the findings, results and conclusion of the study, the following recommendations are drawn:

1. A need for a more comprehensive research may be conducted to examine the effects of empathic teaching towards the academic performance of students.
2. Another parallel study may be conducted to further understand the effects of the demographic profile of the respondents in their responses and how does their demographic profile affect their teaching styles.
3. Also, an in-depth study on the comparison of affective and cognitive empathy may be pursued to examine its effect on the personal and professional growth of teachers.
4. In addition with, another study of empathic teaching may be conducted taking the students as the primary respondents visavis faculty members to examine the significant relationship between the point of views of the two groups.

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## The Influence of Principal Leadership Behavior and Work Environment on Teaching Satisfaction of High School Teachers



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**ABSTRACT:** This study aimed to determine the effect of the principal's leadership behavior and work environment on teacher teaching satisfaction at Teladan Private Senior High School Pematang Siantar. The problems discussed in this study are the principal's leadership behavior and the work environment that affect teacher teaching satisfaction at Teladan Private High School Pematang Siantar. This study uses a quantitative approach, namely the measurement of quantitative data and objective statistics through scientific calculations derived from the sample/population who were asked to answer a number of questions about the survey to determine the frequency and percentage of responses. According to the results of hypothesis testing, it was found that the leadership and work environment together influences the teaching satisfaction of Teladan Private Senior High School teachers. Based on the results of data processing, it is stated that Leadership (X1) has increased by 1%, so teacher job satisfaction (Y) will increase by 0.284, and work environment (X2) has increased by 1%, teaching job satisfaction (Y) will increase by 0.198.

**KEYWORDS:** Leadership, teaching satisfaction, work environment

### I. INTRODUCTION

Human Resources are people in the organization who are directly related to their work in the organization (Anggoro KR et al., 2022). Leadership is one of the issues in management that is still very interesting to discuss. The electronic and print mass media often present opinions and talk about Leadership (Silalahi et al., 2020). Leadership's very strategic and vital role in achieving an organization's vision, mission, and goals is one of the motives that encourage people always to investigate the ins and outs associated with Leadership (Hariandja, 2002). Effective Leadership and a positive work environment can motivate teachers and school staff. Teachers and staff are more motivated to work well when the principal provides support, rewards, and clear direction (Lie, Dharma, et al., 2021). This directly impacts teaching quality and student performance (Ciptoringnum, 2013). Good school principals have strong leadership skills to overcome challenges and solve problems that arise in high school education (Indajang et al., 2021). They can make informed decisions, identify resources, and develop effective strategies. This helps create an environment that is responsive to change and can deal with various complex situations (Candra et al., 2019).

Likewise, the world of education requires a good leadership style for all educators for the sake of the ongoing learning process and improving the quality of education. The role of a teacher is significant; with an optimal teacher role, the learning process in education will run well. Therefore, teacher quality is essential in improving education quality (Romy et al., 2022). In this case, an educational institution or school leader is the principal. The principal is a leader in an organization or formal institution, namely a school, that determines the school's success (Efendi et al., 2022). Successful principals understand the school's existence as a complex and unique organization, can carry out the duties of the principal, and can be responsible for leading the school (Lie, Sherly, et al., 2021). Each principal has the ability to lead his subordinates in different ways. On the other hand, every teacher has a different perception of the principal's leadership style (Lie, Sherly, et al., 2021). Whatever the principal's leadership style, the important thing is that the principal's Leadership can support the performance of his subordinates.

In addition to the Leadership of the principal, a teacher, of course, expects the environment in which he works to be a safe, comfortable, and peaceful environment. This environment can be divided into themes, the work environment concerning the physical aspect and the working environment conditions concerning the psychological aspect (Sudirman et al., 2021). The conditions of the work environment that involve physical aspects include the condition of the building, the availability of several

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facilities, and the strategic location of the building or workplace (Nitisemito, 1998). Meanwhile, the conditions of the work environment that involve psychological aspects include feelings of security from employees in carrying out their duties, two-dimensional (vertical and horizontal) loyalty, and feelings of satisfaction among employees. Peace will make someone feel at home to keep working in that place (Ahyari, 1999). Also, good co-workers and the existing school facilities and infrastructure will influence teachers in carrying out their duties.

Teladan private high school is located on Jl. Singosari No. 3 Bantan sub-district, West Siantar sub-district, Pematang Siantar City. There have been several changes in Leadership. This change of principal was caused by mutation or retirement. Each leader has a different leadership type, so they approach teachers differently. This causes some teachers to think the principal is fun; some even think otherwise. This condition will make the teacher feel comfortable or uncomfortable working at the school. In addition, the principal's Leadership in the school environment also affects teachers and employees who feel comfortable or uncomfortable being in the school environment. The exemplary private high school environment is quite good, starting from the availability of facilities and infrastructure, other supporting facilities, and good study rooms, but there are still obstacles that sometimes arise at certain times.

Principal Leadership Behavior and Work Environment are critical in high school education. The leadership behavior of school principals and the work environment created by them directly impact the quality of education provided by schools. School heads play a role in creating a positive school culture. Through good leadership behavior, they can inspire and guide teachers, staff, and students to achieve common goals. A positive school culture creates an inclusive, safe learning environment that supports student development. The success of high school education is highly dependent on the quality of teaching and teacher performance. Teachers who are satisfied with their work give their best in the educational process. Research on Principal Leadership Behavior and Work Environment can provide valuable insights for improving the quality of education by increasing teacher job satisfaction. High job satisfaction can contribute to teacher retention in schools. Satisfied teachers tend to stay in their profession rather than seek other job opportunities. This research can help identify the factors that influence teacher job satisfaction so that schools can take appropriate action to increase teacher retention and reduce turnover. From this description, it is necessary to research to examine the influence of the principal's Leadership and work environment on job satisfaction in Pematang Siantar Teladan Private High School.

## II. METHOD

The type of research used in this research is quantitative research, which is one whose specifications are systematic, well-planned, and structured from the beginning to the making of the research design. This study uses a quantitative approach, namely the measurement of quantitative data and objective statistics through scientific calculations derived from the sample/population who are asked to answer several questions about the survey to determine the frequency and percentage of responses.

The population in this study were all 30 teachers at Pematang Siantar Private High School. In this study, the population is small, so the sampling is done by Total Sampling, so the sample is 30 people. The research variables consist of the dependent variable and the independent variable described in Figure 1. Below:

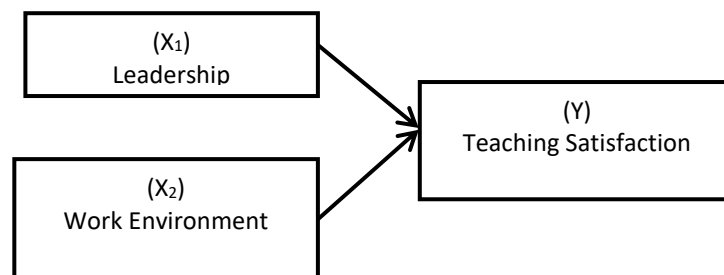


Figure 1. Research variables

Data retrieval is from primary data, namely data from Pematang Siantar Private High School teachers, and secondary data in the form of data containing documentation, notes, and writings supporting this theory. Primary data were collected from interviews, questionnaires, and observations.

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## III. RESULT AND DISCUSSION

To answer the problems in this study, multiple linear regression analysis was used. The program to analyze this regression uses SPSS 26 software to analyze the effect of the independent variable, namely Leadership and work environment, on the dependent variable, namely team member job satisfaction. The results of data processing using the SPSS program are as follows:

**Table 1. Results of Multiple Linear Regression Measurement**

Coefficients		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	5,491	1,490		3,685	,001
	Leadership	,284	,116	,448	2,446	,021
	Work Environment	,198	,078	,467	2,548	,017

a. Dependent Variable: Work Satisfaction

Source: IBM SPSS 26

Based on the results of the regression measurements shown in Table 1. the regression equation formed is:

$$Y = 5.491 + 0.284 X_1 + 0.198 X_2 + e$$

The regression equation above can be concluded as follows:

- 1) The constant of 5.491 means that if X1 and X2, the value equal 0, then Y (Job Satisfaction) is 5.491.
- 2) The regression coefficient of the Leadership variable (X1) is 0.284, meaning that Leadership has increased by 1%, so employee job satisfaction (Y) will increase by 0.284
- 3) The regression coefficient of the Work Environment (X2) variable is 0.198, meaning that the Work Environment has increased by 1%, so team member job satisfaction (Y) will increase by 0.198.

The results of the multiple regression above show that the independent variables, namely Leadership and Work Environment, positively affect the dependent variable, namely team member job satisfaction.

### Hypothesis Test

a. t-test

The t-test is known as the partial test, which tests the influence of each independent variable on the dependent variable.

**Table 2. T Test Calculation Results**

Coefficients		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	5,491	1,490		3,685	,001
	TOTALX1	,284	,116	,448	2,446	,021
	TOTALX2	,198	,078	,467	2,548	,017

a. Dependent Variable: Work Satisfaction

Source: IBM SPSS 26

Based on Table 2, the results of the hypothesis testing of each independent variable partially on the dependent variable can be analyzed as follows:

- 1) Results of Hypothesis Testing The Effect of Leadership (X1) on Job Satisfaction (Y) The significance of the t-test results of Leadership showed a significant level of 0.021 < 5%.

The t-count value generated is 2.446, with the t-table value being 2.051. Because the t-count value is greater than the t-table, then H0 is rejected, and H1 is accepted, it can be concluded that Leadership affects Job Satisfaction significantly. The t distribution table is searched at = 5% (0.05) with degrees of freedom (df) = n-k-1 or 30-2-1 = 27.

- 2) Hypothesis Test Results of the Effect of Work Environment (X2) on Job Satisfaction (Y).

The significance of the t-test results from the Work Environment showed a significant level of 0.017 < 5%. The calculated t value is 2,548, with the t table value being 2,051. Because the value of t arithmetic is greater than the t table, then H0 is rejected, and



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H1 is accepted; it can be concluded that the work environment significantly affects job satisfaction. The t distribution table is searched at  $\alpha = 5\%$  (0.05) with degrees of freedom (df) =  $n-k-1$  or  $30-2-1 = 27$ .

b. F Uji test

The F test tests whether each independent variable significantly affects the dependent variable together = 0.05 and accepts or rejects the hypothesis. The results of the F test calculations can be seen in the following table:

**Table 3. F test calculation results**

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	163,851	2	81,925	49,029	,000 <sup>b</sup>
	Residual	45,116	27	1,671		
	Total	208,967	29			

a. Dependent Variable: Work Satisfaction

b. Predictors: (Constant), Work Environment Leadership

Source: IBM SPSS 26

To test whether the model can be used to compare Sig. In the ANOVA table with the significance level ( $\alpha$  0.05%). If Sig > 0.05, the model is rejected, but if Sig < 0.05, then the model is accepted. In Table 3 above, the value of Sig. 0.000 < 0.05, it can be concluded that the model is acceptable. ANOVA analysis shows that together the independent variables have a significant effect on the dependent variable.

This can be proven by the calculated F value of 49.029, more significant than the F table value (3.35). The model can predict job satisfaction, or leadership and work environment together affect job satisfaction. So that leadership and work environment affect teacher job satisfaction at SMA Teladan Pematangsiantar.

c. Uji Determinasi ( $R^2$ )

The coefficient of determination ( $R^2$ ) essentially measures how far the model's ability to explain variations in the dependent variable is. The value of the coefficient of determination is between zero (0) and one (1). The value of the coefficient of determination can be seen in Table 4.13 below:

**Table 4. Coefficient of Determination ( $R^2$ )**

### Model Summary

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate
1	,885 <sup>a</sup>	,784	,768	1,29266

a. Predictors: (Constant), Work Environment Leadership

The value of R describes the level of relationship between the independent variables (X) and the dependent variable (Y). From the processed data, the correlation coefficient value is 0.885 or equal to 88.5%, meaning that the relationship between the X variable (Leadership and work environment) on the influence of the Y variable (job satisfaction) is in a strong category. R square explains how significant the variable caused by X is from the calculation results obtained by the  $R^2$  value of 0.784 or 78.4%. This means that job satisfaction is influenced by leadership and work environment variables, while other factors outside the model influence the rest.

### Classical Assumption Test

a. Multicollinearity Test

Multicollinearity test to detect whether the regression model used is free from Multicollinearity problems can be seen from:

1) Large VIF (Variance Inflation Factor) and tolerance, where the VIF value is not more than ten, and the tolerance value is not less than 0.1. The coefficient shown in the output shows that the tolerance is  $X_1 = 0.238$ ,  $X_2 = 0.238$ , while the VIF is  $X_1 = 4.198$ ,  $X_2 = 4.198$ . This shows that VIF and tolerance have values above 0.1 and not more than 10, which means they are free from multicollinearity problems.

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**Table 5. Multicollinearity test calculation results**

**Coefficients**

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	TOTALX1	,238	4,198
	TOTALX2	,238	4,198

a. Dependent Variable: TOTALY

2) The value of R2 shows a smaller value than the simultaneous coefficient (R). The output data obtained, R = 0.885 AND R2 = 0.784, shows that R2 < R, which means that there is no multicollinearity problem in the model used. In the two detectors above, it is concluded that, in general, there is no multicollinearity in the regression model that will be used.

**Table 6. Determination test calculation results**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate	Durbin-Watson
1	,885 <sup>a</sup>	,784	,768	1,29266	2,289

a. Predictors: (Constant), TOTALX2, TOTALX1

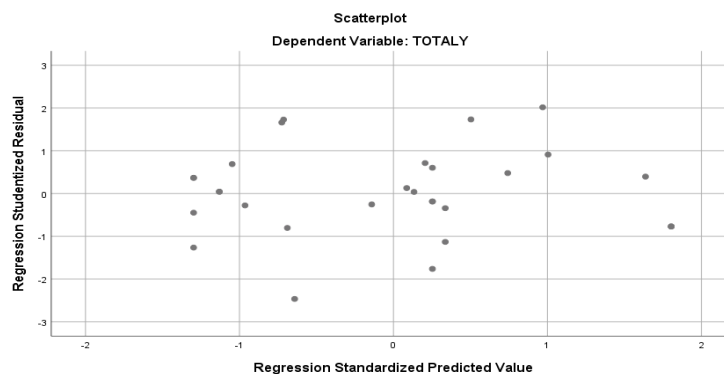
b. Dependent Variable: TOTALLY

**b. Heteroscedasticity Test**

A multiple linear regression model can be said to be free from Heteroscedasticity problems if:

- 1) Data points spread above or around the number 0
- 2) The data points do not collect only above or below
- 3) The spread of data points must not form a wavy pattern, then widens, narrows, and widens again.
- 4) The point spread should be different from the pattern.

Based on the results of the Heteroscedasticity test with SPSS version 26, it can be seen in the scatter plot image below:



**Figure 2. Heteroscedasticity test results in the scatter plot**

Figure 2 shows that the data points spread around zero and do not collect the needs of these data points at one point. So, the regression model of this study does not experience heteroscedasticity problems.

**c. Normality test**

The normality test aims to test whether, in the regression model, the residual variable has a normal distribution. This study detected normality testing by analyzing the P-P plot images produced by SPSS. The results can be seen in Figure 3. below:

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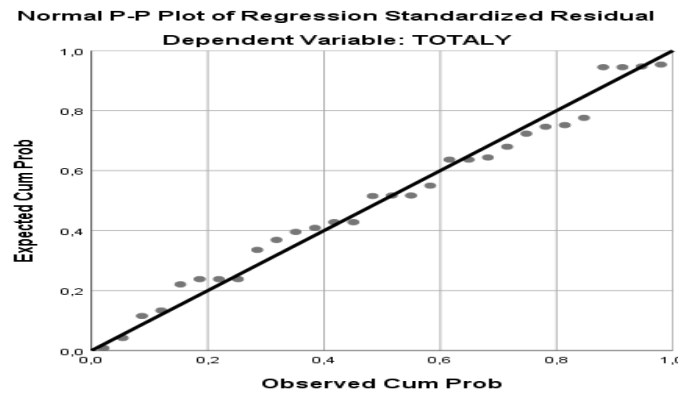


Figure 3. Normality test detected through P-P plot analysis

Figure 3 above shows that the distribution of the points of the increase in the variable spreads around the diagonal line, which can be concluded that the data presented can be expected.

### d. Autocorrelation Test

An autocorrelation test is carried out to test whether there is an influence between the confounding variables in each independent variable. In this study, the autocorrelation test used the Durbin-Watson test with the following conditions:

$dW < dL$  means that there is a positive autocorrelation (+)

$dL < dW < dU$ , cannot be concluded

$dU < dW < 4-dU$ , it means that there is no autocorrelation (-)

With the number of samples  $n = 30$ ,  $\alpha = 0.05$ , and the number of independent variables  $k = 3$ , the critical values obtained are  $dL = 1.2138$  and  $dU = 1.6498$ . The results of the autocorrelation test in this study using SPSS 26 as shown in Table 7. Below:

Table 7. Autocorrelation Test

Model Summary					
Model	R	R Square	Adjusted R Square	Std. The error in the Estimate	Durbin-Watson
1	,885 <sup>a</sup>	,784	,768	1,29266	2,289
a. Predictors: (Constant), TOTALX2, TOTALX1					
b. Dependent Variable: TOTALY					

## IV. CONCLUSION

Based on testing the previous hypotheses, some are proven hypo, and some are not. For this reason, this discussion section will contain a more detailed discussion of each. It can be explained that Leadership significantly increases the job satisfaction of Pematangsiantar Private High School teachers; their Leadership is good in teacher teaching satisfaction. Positive Principal Leadership Behavior includes providing support and recognition to teachers. Principals who understand and value the contribution of teachers create a motivating work environment. This support and recognition can be through mentoring, training, positive feedback, and achievement rewards. Teachers who feel supported and valued by the principal tend to be with good leadership behavior can have good leadership behavior and can establish effective communication with teachers. They openly listen to views, ideas, and input from teachers. Good communication allows for clear channels for sharing information, expectations, and needs between principals and teachers. This helps create a transparent and collaborative work environment, which in turn increases teacher job satisfaction. It can be explained that the work environment significantly increases the teaching satisfaction of Pematangsiantar Private High School teachers; their work environment is good in teacher teaching satisfaction. A positive work environment includes factors such as good relations between co-workers, mutual support, and a friendly atmosphere. When teachers feel supported, valued and have positive relationships with colleagues and other school staff, they tend to be more satisfied with their jobs. A positive work climate creates a sense of community, collaboration, and support, which can increase teacher job satisfaction. A work environment that supports work-life balance can contribute to teacher job satisfaction. Teachers who have flexibility in work schedules, support for activities outside of school, and sufficient time to attend to their personal needs tend to feel more balanced and satisfied with their jobs. A work environment that prioritizes work-life balance can increase job satisfaction and help prevent burnout or burnout. The data processing results show that leadership and work

## The Influence of Principal Leadership Behavior and Work Environment on Teaching Satisfaction of High School Teachers

environment affect teaching satisfaction. So that the hypothesis is that leadership and work environment together (simultaneously) affect the teaching satisfaction of Pematangsiantar Model Private High School teachers. Based on the results of data processing, it can be said that Leadership (X1) has increased by 1%, so teacher job satisfaction (Y) will increase by 0.284, and work environment (X2) has increased by 1%, teaching job satisfaction (Y) will increase by 0.198. The research implication is the importance of providing professional development opportunities to teachers. Principals and schools can provide training, seminars, workshops, or other development programs to help teachers improve their teaching skills and meet job demands. Focusing on professional development can increase teachers' job satisfaction by providing them with a sense of accomplishment, increased competence developing career growth. Furthermore, developing policies and procedures that support a positive work environment is necessary. Principals and education policymakers must consider factors such as working climate, adequate resources, work-life balance, and career development opportunities in designing school. Increasing teacher job satisfaction. Increasing open and transparent two-way communication is essential for school principals and teachers. This can be done through regular meetings, discussion forums, or other communication channels that allow teachers to convey their views and receive feedback from the principal.

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## National Protected Areas in Mexico: The Case of Pico De Orizaba



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**ABSTRACT:** The present research focuses on the Orizaba peak, the tallest volcano in Mexico and one of the Natural Protected Areas of the Veracruz state. Without disregarding detailed information about the volcano's geographic location, climate, and the most representative species inhabiting the area, the environmental, social, and economic benefits that this protected area provides to nearby populations are highlighted. Additionally, the studies demonstrating how environmental conservation can have a positive impact on the local economy are specified. Likewise, the role of education in imparting knowledge related to volcanoes and the different aspects to be considered within the same topic is analysed.

**KEYWORDS:** Natural resources, Ecotourism, Endemic species, Public policies, and Environmental education.

### I. INTRODUCTION

The Citlaltépetl, also known as Pico de Orizaba, is the highest volcano in Mexico. With an altitude of 5,636 meters above sea level and an area of 19,750 hectares, it is located between the municipalities of Calchualco to the northeast, La Perla to the southeast, Tlachichuca to the northwest, and Chalchicomula de Sesma and Atzitzintla to the southwest, spanning the states of Veracruz and Puebla. This volcano was declared a Natural Protected Area (NPA) on January 4, 1937. The Citlaltépetl has a temperate subhumid, cold, and sub-cold climate. Several animal species inhabit its territory, including the wildcat (*Felis silvestris*), the weasel (*Mustela nivalis*), the rabbit (*Oryctolagus cuniculus*), the badger (*Taxidea taxus*), the raccoon (*Procyon*), the coyote (*Canis latrans*), the hawk (*Falco*), the bluebird (*Sialia*), the mockingbird (*Mimus polyglottos*), the hummingbird (*Trochilidae*), and others, according to information from the Ministry of Environment and Natural Resources (SEMARNAT).

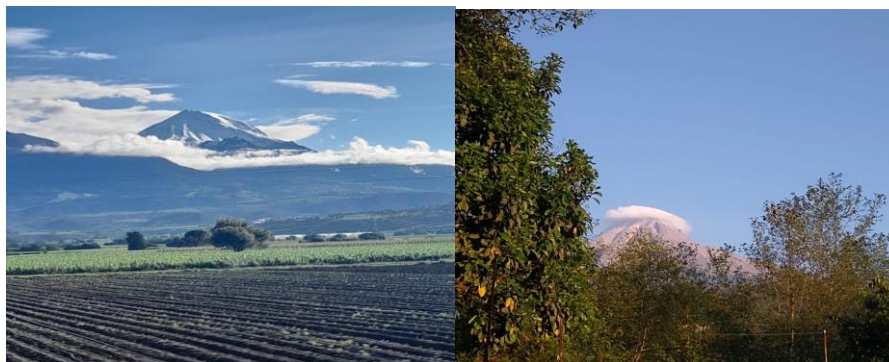


Figure 1. View of the Pico de Orizaba. On the left, seen from the municipality of Esperanza, Puebla. On the right, seen from the municipality of La Perla, Veracruz

One significant aspect regarding the Citlaltépetl, Mexico's tallest volcano, is its role in generating the Blanco, Cotaxtla, Jamapa, Metlac, and Orizaba rivers, which gives it great importance in terms of regulating the region's hydrological cycle. However, it is important to note that the volcano also provides drinking water to at least 25 municipalities in the state of Veracruz. In terms of

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vegetation coverage within its Protected National Area, a diversity of forest types can be found, including oyamel forest, pine forest, grassland, and high-altitude paramo, distributed between 3,200 and 3,600 meters above sea level. In particular, the pine forest (*Pinus hartwegii*) is located between 3,600 and 4,300 meters above sea level.

Furthermore, the Citlaltépetl stands out not only for its rich diversity of flora and fauna but also for offering visitors a unique panoramic view of the surrounding territory. This allows for various outdoor activities such as hiking, mountain biking, or simply walking, making this volcano a popular tourist destination. In addition to being the tallest volcano in the country, the Citlaltépetl is a tourist attraction that allows people to connect with nature and enjoy the breathtaking landscapes and panoramic views it offers. The main tourist attractions are located at an altitude of 3,400 meters above sea level, namely the Pico de Orizaba and Puerta del Cielo villages, situated on the southeast side, belonging to the municipality of La Perla in the state of Veracruz.

These places offer accommodation for those interested in witnessing a sunrise or stargazing, as they are located in an area free from light pollution, enabling optimal viewing conditions. However, it is important to consider that weather conditions can affect the realization of these activities. During winter, for example, snowfall can hinder their execution, while during the rainy season, hailstorms or landslides may make access to the Protected National Area difficult. Despite these potential challenges, the Citlaltépetl remains a popular tourist destination due to its natural attractions and the diverse range of activities that can be enjoyed in its surroundings.

Regarding the legal framework for the conservation of natural resources in Mexico, as established by the National Commission for the Knowledge and Use of Biodiversity (CONABIO), several laws have been enacted to protect the environment. These include the General Law on Climate Change of 2012, the General Law on Ecological Balance and Environmental Protection of 2012, the General Law on Sustainable Forest Development of 2018, the General Law on Wildlife of 2018, the Biosafety Law on Genetically Modified Organisms of 2005, the Federal Law on Rights of 2016, the Law on Sustainable Rural Development of 2018, and the Law on Sustainable Fishing and Aquaculture of 2018. Despite these laws, their enactment has occurred in the last 10 years, in a context of accelerated loss of natural resources in Mexico, which is particularly concerning in the case of Pico de Orizaba and its surroundings.

It is undeniable that numerous laws, both at the national and global levels, exist to preserve natural resources, especially in protected areas such as the country's highest volcano. According to the National Commission of Natural Protected Areas (CONANP, 2022), Mexico has a total of 185 natural protected areas, of which 148 are exclusively terrestrial, 31 are terrestrial and marine, and 6 are exclusively marine. Collectively, these areas cover an extension of 90,958,494 hectares or 1.964 million km<sup>2</sup> of Mexican territory. These spaces are conserved with the aim of protecting the different species that inhabit them, many of which are endangered, and they also represent an alternative to address the current consequences of climate change.

When it comes to deforestation in the territory of Pico de Orizaba, it is important to highlight that tree cutting is a common practice, but there are also other factors that contribute to the loss of forest cover, such as forest fires and the natural life cycle of trees. The lack of reforestation can have negative consequences in the affected area. That is why the National Commission of Natural Protected Areas (CONANP), together with the Government of the State of Veracruz, private actors, and the community in general, have carried out a campaign to reforest the area, with the aim of planting 250,000 high-altitude pine trees (*Pinus hartwegii*).

The practice of tree planting is carried out in stages, particularly during the rainy seasons that extend from May to mid-July and again from August to October. Reforestation is a critical measure to conserve biodiversity and maintain ecological balance in the deforestation-affected area, such as the territory of Pico de Orizaba. Additionally, tree planting is a key action to mitigate the negative impact that this practice has had on the environment in the region.

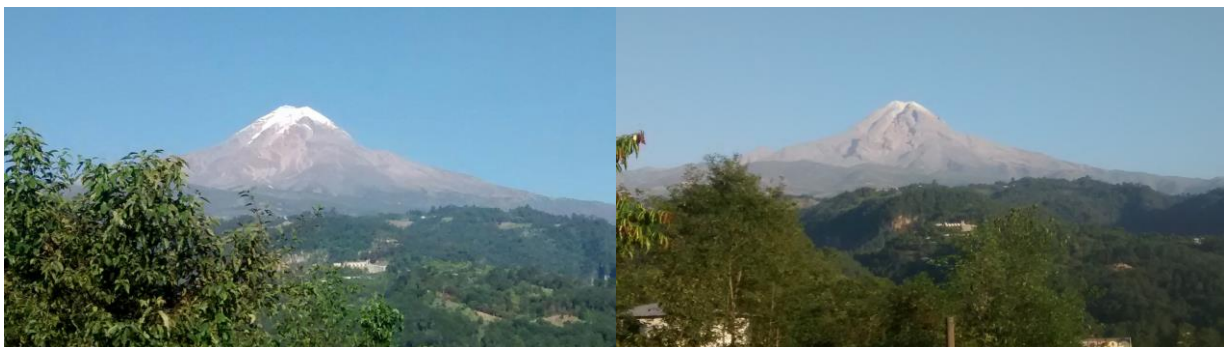
Furthermore, it is important to point that the Glacier of Pico de Orizaba has undergone significant changes in recent decades due to climate change. This phenomenon has led to an increase in glacier melting, with long-term repercussions that many are unaware of. These changes have both environmental and water security implications for residents on the slopes of the volcano. Figure 2 shows the comparison of the glacier change on Pico de Orizaba in the years 1958 and 2019. According to the displayed cartography, the remaining glacier is located above 5,000 meters above sea level.

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**Figure 2. Comparison of the Pico de Orizaba glacier in the years 1958 (left) and 2019 (right), Taken (Guillen & De Miguel, 2021).**

The figure depicts a comparison between the Pico de Orizaba glaciers in two different years: 1958 and 2019. The image likely shows two side-by-side photographs or maps representing the glacier during these two time periods. The purpose of the comparison is to illustrate the changes that have occurred in the glacier over several decades due to the effects of climate change. The comparison of the Pico de Orizaba's glacier in the years 2018 and 2019 is in figure 3.



**Figure 3 depicts a comparison of the Pico de Orizaba's glacier in the years 2018 and 2019.**

The melting of the Pico de Orizaba glacier would not only disrupt the ecological balance but also impact the surrounding soils, flora, fauna, and microclimate of the mountain, as the glacial meltwater plays a crucial role in these aspects. Experts such as Víctor Soto, who has also conducted research in the Nevado de Toluca and currently works on a project related to retrospective climate analysis in Cofre de Perote, have pointed out that the degradation of the glacier would have a domino effect (Reyes, 2023). This would result in severe impacts, especially on the water supply for communities near the volcano that rely on the natural glacier meltwater as a source of drinking water. The hydrological basins of Jamapa-Cotaxtla originate in the Pico de Orizaba, supplying water to over 2 million inhabitants in Veracruz and other regions in the neighboring state of Puebla.

Furthermore, the rivers Blanco, Cotaxtla, Metlac, and Jamapa, which have their source in the Pico de Orizaba, provide water to 31 municipalities in the Altas Montañas region. Important cities such as Córdoba, Orizaba, Huatusco, Coscomatepec, Puerto de Veracruz, and Boca del Río depend on the waters coming from the Jamapa glacier (Reyes, 2023).

## II. DEVELOPMENT

Regarding the outline on protected areas, various research studies have been conducted in Mexico on designated National Protected Areas. These studies have covered diverse aspects such as biodiversity, conservation, management, and the significance of these areas for society at large. In particular, numerous investigations have been carried out on Pico de Orizaba, a mountain located in the state of Veracruz, Mexico. These studies have encompassed different fields, including social, ecological, scientific, and educational aspects.

For example, in a study conducted by García-Mendoza and Toledo-Aceves (2010), the importance of biodiversity in the area for the conservation of endemic species was analyzed. The authors emphasized the need to protect these areas to prevent the

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extinction of endangered species. In another study, Sánchez-Sánchez et al. (2017) examined the tourist carrying capacity in the Pico de Orizaba National Park to assess its impact on the ecosystem. The authors found that the area was being visited by a greater number of tourists than the ecosystem could sustain, posing a risk to biodiversity conservation.

Furthermore, scientific research has also focused on understanding the ecological processes and dynamics within the Pico de Orizaba region. Studies have investigated the effects of climate change on the glacial retreat and the subsequent implications for water resources and the surrounding ecosystems (Soto et al., 2015). These investigations contribute to the understanding of the long-term ecological changes occurring in the area and provide valuable insights for conservation strategies.

Moreover, educational initiatives have been developed to raise awareness about the importance of Pico de Orizaba and its protected status. Environmental education programs, guided tours, and interpretive signage have been implemented to promote a deeper understanding of the ecosystem's value and the need for its preservation (CONANP, 2019). These educational efforts aim to foster a sense of stewardship among visitors and local communities, encouraging responsible behavior and sustainable practices.

In summary, the research conducted in the Pico de Orizaba area and its designation as a protected area have provided valuable insights into biodiversity conservation, the impacts of tourism, ecological dynamics, and the need for environmental education. These studies contribute to the ongoing efforts to protect and preserve the natural and cultural heritage of Pico de Orizaba, ensuring its sustainability for future generations.

In addition, efforts undertaken by other countries for the conservation of their protected areas have been studied. In this regard, the work carried out by the International Union for Conservation of Nature (IUCN), which has proposed various strategies for the conservation of protected areas worldwide, is worth mentioning. In conclusion, a wide range of research has been conducted on National Protected Areas in Mexico, including the Pico de Orizaba. These studies have covered different aspects and have significantly contributed to the knowledge and conservation of these areas, both at the national and international levels. It is essential to continue deepening our understanding of these areas and to promote their conservation through national and international proposals that seek to protect biodiversity.

On the other hand, Soto and Delgado (2020) conducted a study with the objective of examining air and soil temperatures on the northern side of the Pico de Orizaba over a two-year period, from January 1, 2016, to December 31, 2017. The authors also highlight that the volcano is composed of three stages of evolution and that there are human settlements surrounding the volcano that rely on water to meet their daily needs. According to the results obtained by the authors, "at higher altitudes, the soil is more susceptible to temperatures; this fact is manifested from 4584 m above sea level, where the winter season causes a greater drop in values compared to air records" (Soto & Delgado, 2020, p. 12). This suggests that soil temperature is more sensitive to climatic variations at higher altitudes, especially during the winter season. Figure 4 shows The Pico de Orizaba and its biodiversity.



**Figure 4. The Pico de Orizaba and its biodiversity. It has an elevation of 5636 m above sea level. View from the State of Veracruz**

It is important to highlight that the information obtained through this study can be highly useful for understanding the climatic conditions in the Pico de Orizaba and for making decisions regarding the conservation of this important protected natural area. Additionally, this study can be of great significance for future research on the impact of climate change in this area. The proximity of human settlements to a volcano poses a potential threat to surrounding populations. Volcanic eruptions can lead to



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the release of lava and ash, severely affecting the quality of life of nearby communities and, in some cases, even jeopardizing their survival.

In Alcalá-Reygosa et al. (2020), they emphasize the importance of understanding the different eruptive phases of each volcano to prevent the risks associated with volcanic activity. The authors found that the most recent eruptions of the Pico de Orizaba date back to the 16th and 17th centuries, suggesting the need to be prepared for the possibility of future eruptions. Despite significant advances in understanding volcanic activity, it is not possible to predict when an eruption will occur, highlighting the need for a disaster prevention and response program.

Therefore, it is important to implement programs that enable communities near a volcano to take preventive and responsive measures in the event of a volcanic eruption. This entails not only training local residents about the risks associated with volcanic activity but also constructing safe shelters and developing clear emergency plans. Additionally, effective coordination among local authorities, scientists, and aid organizations is required to ensure a prompt and effective response in case of a volcanic emergency.

Studying the eruptive phases of a volcano and implementing disaster prevention and response programs are crucial to reducing the risks associated with volcanic activity and protecting nearby communities. Investment in research and proper preparedness can save lives and minimize the damage caused by extreme natural events such as volcanic eruptions. There are various studies focusing on the geomorphology of the Pico de Orizaba National Protected Area, specifically identifying different types of terrain and factors that may influence its morphology. Some studies have focused on observing tree positions, which can be useful in hard-to-reach areas where the presence of large rocks can hinder exploration. In this regard, Vázquez-Ríos and Franco-Ramos (2022) highlight the relevance of the results obtained in their research, which allow for the establishment of a more efficient working program for the Pico de Orizaba.

Furthermore, Morales-Martínez et al. (2016) conducted a study on mass movement caused by Hurricane Ernesto in 2012 in two municipalities in the state of Veracruz. These authors explored the different factors influencing the displacement of rocks and land masses and how they can affect the terrain morphology in the region. It is important to highlight that the study of geomorphology is crucial for understanding landscape evolution and the impact of natural and anthropogenic factors on them.

In this regard, identifying the characteristics of the terrain and its relationship with the processes occurring in the region is essential for implementing conservation measures and land management to ensure the preservation of species inhabiting these protected areas and the sustainability of the ecosystems they support.

In the current context, the need to reconsider intervention approaches in Natural Protected Areas (NPAs) is a crucial issue for environmental conservation. According to Vallejo-Román and Rodríguez-Torrent (2022), the increase in the number of NPAs worldwide has led to the need to rethink intervention strategies in these protected spaces. In this sense, co-management is an alternative that would allow for shared responsibility towards the environment and balance the interests among stakeholders, effectively contributing to combating climate change. The co-management proposal for NPAs suggested by Vallejo-Román and Rodríguez-Torrent (2022) is based on collaboration among different stakeholders, such as local communities, governments, researchers, and entrepreneurs. This strategy aims to enhance the management and conservation of NPAs, considering the diverse needs and perspectives of those involved.

It is important to highlight that co-management of NPAs would not only contribute to environmental conservation but could also generate economic and social benefits for local communities. According to the authors, the active participation of local communities in the co-management of NPAs could create green jobs and promote ecotourism, thereby contributing to the sustainable development of the regions. In conclusion, the co-management proposal for NPAs put forward by Vallejo-Román and Rodríguez-Torrent (2022) is a promising alternative for achieving more effective and sustainable management of these protected spaces. Collaboration among different stakeholders and the consideration of diverse needs and perspectives could contribute to environmental conservation while generating economic and social benefits for local communities.

In the study conducted by Gale et al. (2021), the researchers explored the perceptions of soundscapes in the Coyhaique National Reserve (RNC) in Chile. The authors used surveys to examine how visitors experience and respond to different sounds, including wind, birds, insects, forest noises, water, and voices. The objective was to gather information about how people perceive and react to the soundscapes of the reserve. Additionally, the study also assessed the differences between local visitors and national or foreign tourists in their reactions to these soundscapes. The authors found that local visitors perceived and valued the sounds of the reserve differently compared to tourists.

In their study, Filardo and Rossi (2021) focus on the integration process of the Montes del Queguay area into the National System of Protected Areas in Uruguay. The research aims to identify the conflicts that arise between stakeholders and their interests regarding the appropriation of ecosystem services. The authors conducted semi-structured interviews with key

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informants to delineate the phases of the process and show how the configuration of conflict and the position of the stakeholders vary over time.

On the other hand, Durán et al. (2021) examine the control and possession of high-altitude environments located in the southernmost region of the Tawantinsuyu Empire, which encompassed parts of present-day Argentina, Chile, and Bolivia. The authors provide a detailed analysis of how these spaces were appropriated for political or economic purposes and discuss the social and cultural implications associated with this process. This study offers a deeper understanding of historical practices related to the use of protected areas and how these practices can impact the current understanding of natural resource management.

Continuing with research related to protected areas in order to conserve the environment and the species they host, not only in Mexico but also in different scenarios around the world, Ramírez-Terrazo et al. (2021) conducted a study on the traditional knowledge of mushrooms in the Antelá and Tzisco communities in the municipality of La Trinitaria, located within the Montebello Lakes National Park.

In this study, interviews were conducted with local residents to gather information about traditional knowledge of mushrooms, as well as the collection and taxonomic identification of specimens. The results showed a total of 31 different species among both communities, with some aspects sharing similarities with other regions of the country. Additionally, a previously unknown species was discovered, referred to as *Lactarius aff. deliciosus* (locally known as K'anchaya). This finding is relevant as it is crucial to understand the knowledge held by people living in the vicinity about these resources and whether they have any practices for their conservation. As stated by Ramírez-Terrazo et al. (2021), "Traditional knowledge is fundamental for the identification of species with economic, cultural, and ecological value, as well as for the development of strategies for the sustainable management and conservation of natural resources."

In conclusion, the identification and documentation of traditional knowledge held by local communities is an important tool for sustainable management of natural resources and environmental conservation. Such studies can also contribute to the identification of new species and the expansion of understanding of local biodiversity. Vallejo-Román and Rodríguez-Torrent (2020) conducted a case study in the Cofre de Perote National Park, Veracruz, Mexico, focused on analysing the relationship between common goods, environmental conservation, and peasant economy. The study aimed to discuss the tensions that arise among those who inhabit and those who designate, plan, organize, and control Protected Natural Areas (PNAs), including local or national governments, community or indigenous groups, as well as scientists and researchers.

On the other hand, López-Sánchez et al. (2020) conducted an assessment of the population structure of *Alnus jorullensis* (ilite) in Cofre de Perote National Park in Veracruz, Mexico. Ilite is an important species for the regeneration of temperate forests and a primary source of firewood for families living in the area. The study aimed to evaluate the population structure during April 2016 and 2017 in five localities within the national park and interviewed 80 families about their use of extracted firewood. The results of the study showed a significant decrease in ilite density from 2016 to 2017. Additionally, notable differences were observed between juvenile and adult individuals during both periods, although no significant differences were found between them.

Continuing with the outline of research on protected areas, Pérez-Amezola et al. (2020) conducted a study in the Cañón de Santa Elena Flora and Fauna Protection Area in Mexico. The objective of the study was to identify bird species, terrestrial mammals, fish, and vegetation found in the area using different monitoring techniques. A total of 166 species were recorded, including 73 birds, 24 terrestrial mammals, two fish, and 67 plants. Some species were listed by NOM-059-SEMARNAT-2010 and the International Union for Conservation of Nature's Red List, indicating their importance for conservation.

In the study by Rodríguez-Franco et al. (2020), social participation in the management of the Gulf of California Islands Flora and Fauna Protection Area is analyzed. The authors used direct observation techniques and interviews with various stakeholders, including government officials, specialists, and users of the protected area, to examine perceptions of social participation in the management of the protected area. The results of the study indicate that the National Commission of Natural Protected Areas lacks credibility due to the top-down implementation of strategies without properly considering affected communities. According to the authors, it is necessary to implement proposals to strengthen environmental governance in the management of protected areas. In this way, the perception of the various stakeholders could be improved, and their participation in the management and conservation of these natural areas could be encouraged. This study calls for reflection on the importance of integrating society into the management of protected areas to achieve effective biodiversity conservation and sustainable development in local communities.

Regarding Serna-Lagunes et al. (2019), an analysis of mammal diversity and conservation status was conducted in Pico de Orizaba National Park (PNPO) during the dry and rainy seasons. The study relied on the use of 14 camera traps to record the presence of 10 different species belonging to six families. The carnivore order was the best represented, with 60% of the

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mammals detected in the camera traps. According to the authors, some of the recorded species are at risk and require conservation measures to improve their habitats. The results obtained in this study could be highly useful in planning appropriate strategies for the conservation of the park's ecosystem.

On the other hand, Vidal et al. (2019) focused on the perception of local residents regarding the socioeconomic and conservation impacts of dolphin tourism in Anavilhanas National Park, Brazil. A descriptive qualitative study was conducted using a semi-structured survey among 20 local residents to gather their opinions. The results indicated that the majority of the interviewees had a positive perception of dolphin tourism, as they believed it created employment and generated income, thus stimulating the tourism industry and facilitating access to natural resources in the area. According to the authors, these results suggest that dolphin tourism can be an important source of economic benefits for local communities, although appropriate measures need to be implemented to ensure the conservation of the park's biodiversity.

Furthermore, Alva-Rivera (2018) conducted research analysing how the conservation of natural resources is not perceived as a relevant issue among Mexican society. To achieve the objective of the study, qualitative techniques based on semi-structured interviews and secondary sources were used, focusing on the analysis of the public policy process through a case study. The main aim of this research is to find the appropriate balance to meet social needs and interests while preserving the environment.

On a different note, Buendía-Rodríguez et al. (2018) evaluated the effect of excluding a protected area on tree composition and structure. The authors measured normal diameter, height, basal area, total volume, and density in three selected sites. The results of their study showed that forests within the park require timber harvesting to regenerate the forest mass, while the forest outside the park is under forest management and fulfills this condition.

In summary, Alva-Rivera (2018) emphasizes the need to find an adequate balance between social needs and interests and environmental preservation in the public policy process, while Buendía-Rodríguez et al. (2018) highlight the importance of considering the exclusion of protected areas in forest management to ensure proper forest regeneration. Salazar et al. (2018) conducted an evaluation of the perception held by students from certain professional programs in the state of Nuevo León regarding the beauty of the landscape of the Cerro de la Silla Natural Monument, which is a representative symbol for the Metropolitan Area of Monterrey. The study focused on areas considered important by the National Association of Universities and Higher Education Institutions (ANUIES). The research aimed to assess students' perception of the landscape beauty and its importance in the conservation of the Natural Monument.

On the other hand, Cruz-paz et al. (2018) focused on multicriteria analysis to identify Priority Conservation Areas (PCA) within the Usumacinta hydrological basin, located in Mesoamerica. These PCAs are regions with higher aptitude for conservation based on vulnerability and irreplaceability criteria. The authors used a multicriteria methodology to identify priority areas for conservation within the hydrological basin. The results of their study indicate that approximately 23.7% of the area is considered as PCA; however, less than half of them are protected by the 124 existing natural spaces. In summary, Salazar et al. (2018) highlight the importance of evaluating students' perception of landscape beauty and its impact on the conservation of natural monuments, while Cruz-Paz et al. (2018) emphasize the need to identify Priority Conservation Areas to ensure proper conservation of the Usumacinta hydrological basin.

The study conducted by Bobadilla-Jiménez et al. (2017) focuses on the success of the Cabo Pulmo National Park (CPNP) as a protected natural area. The research aims to examine the factors that contributed to the success of CPNP, including the support of the local community and key stakeholders, as well as the policy adopted by the federal government for its preservation. The authors highlight how CPNP has provided economic benefits and improvements in the quality of life for its inhabitants through sustainable tourism. The study explores the importance of environmental conservation and how sustainable tourism can be a tool for economic development and nature conservation. In conclusion, the work emphasizes the importance of community support and government policy in the success of protected natural areas like Cabo Pulmo National Park, and how sustainable tourism can provide economic benefits and improve the quality of life for the local population while promoting environmental conservation.

The study conducted by Larios-Lozano et al. (2017) focuses on the identification and enumeration of bird species within the Los Mármoles National Park, located in Mexico. The research objective is to use data collected over five years to identify and characterize the 195 bird species present in the area, including some that are at risk and others that are unique to Mexico. The authors highlight the importance of understanding the diversity and distribution of bird species within Los Mármoles National Park, as this can help improve conservation efforts. Additionally, they emphasize the need to continue monitoring the presence and behavior of these birds in order to implement effective protection measures. In conclusion, the work of Larios-Lozano et al. (2017) underscores the importance of knowing the diversity and distribution of bird species in protected natural areas like Los

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Mármoles National Park, in order to implement effective conservation measures and ensure the survival of these species in their natural habitat.

On the other hand, Lebreton and Imbernon (2017) conducted an analysis of discursive practices surrounding a territorialized public action in the case of changing the protection category of the Nevado de Toluca Protected Natural Area, Mexico. Their study specifically focused on the discourse that led to the construction of the environmental problem of deforestation and its proposed solution: the reclassification of the protected area as a Flora and Fauna Protection Area, to allow for the exploitation of its natural resources. This approach allowed the authors to examine the discursive practices that underpin these public policy decisions.

While Torrescano-Castro et al. (2016) conducted a study on the impact of artisanal fishing in an unprotected marine area in Isla Isabel, Mexico. In this work, a one-year monitoring of fishing grounds was carried out with the aim of identifying the most commonly used gear and species in artisanal fishing. The results indicated a low species diversity in the area, with few species dominating the catches. This finding suggests a potential negative impact of artisanal fishing on species diversity in Isla Isabel.

In Ortiz and Romos (2016), a study was conducted on the social and environmental impacts derived from water management in the Cuatro Ciénegas Protected Area, Coahuila. The main objective of the study was to analyze the positive and negative effects of water management on the ecology and local human communities. To achieve this, the authors used a methodology of semi-structured interviews with key stakeholders in the area to gather relevant information about water management.

Lastly, Pallanez and Moreno (2016) conducted a study on the socio-environmental conflict that arose between miners and Mexican governmental institutions regarding the creation of a protected natural area called the Mavavi Biosphere Reserve. Their article examines the dynamics, actors, and strategies used by both parties to understand how the project ultimately failed. The authors point out that the elements employed by the opponents led to the lack of conservation policy, due to factors such as national and local politics, lack of public involvement, and lack of coordination among the government agencies responsible for the project.

### III. METHOD

For the present research, a detailed analysis was conducted on subjects that address relevant aspects related to the Pico de Orizaba, such as volcanoes, protected areas, topography, climate, hydrology (rivers and lakes), vegetation, and other related topics. This search was carried out in freely available textbooks used in public primary education, with a specific focus on the state of Veracruz. Subsequently, a table is presented with the obtained information.

**Table 1. Self-compiled data**

Degree	Subject	Lesson	Activity	Pages	Indication
Third	Veracruz la entidad donde yo vivo.	Mi localidad en la entidad.	Action plan in risk situations.	107-109	Students are asked to make an action plan for a volcanic eruption. Putting before an example of before, during and after the natural disaster.
Fourth	Atlas de México	Placas tectónicas, regiones sísmicas y principales volcanes.	There is no activity, only the seismic zones and the main volcanoes of Mexico are analyzed	11	There is no activity, but students will be able to analyze the different volcanoes in Mexico, as well as their location in the territory.
Fourth	Atlas de México	Áreas Naturales Protegidas federales	There is no activity; only the analysis of different types of areas and their locations within the country.	23	There is no specific activity, but students will be able to locate the protected areas and identify their types.
Fourth	Atlas de México	Veracruz	Said map of the entity of Veracruz details data	125	There is no activity, but students can find various

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			referring to economic activities, archaeological and historical sites, fauna, national protected areas, among others.		aspects that the entity of Veracruz has.
Fourth	Geografía	Regiones de climas y vegetación.	Draw on the map the vegetation symbols in the corresponding regions according to the table specified on page 32.	32-33	The students place the vegetation symbols according to the climate of the country.
Fourth	Geografía	Las regiones naturales de nuestro país.	The students will locate the type of vegetation according to the altitude that it has.	61-64	Students will be able to learn the type of vegetation that the regions have are according to the altitude in which they are located.
Fifth	Atlas de geografía del mundo	Componentes naturales	In this lesson students will address the movement of tectonic plates, seismicity and volcanism, and the relief of the continents. As well as the water and the rivers and lakes of the continents and the climates and the regions of the continents.	25-67	Students will be able to compare information on plate tectonics, seismicity, volcanism, and the relief of the continents. As well as the water, the rivers and lakes of the continents and the climates and the regions of the continents with Mexico.
Fifth	Geografía	¿Cómo localizó?	Latitude and longitude.	30-31	Students will be able to identify characteristics of longitude and altitude.

In relation to the educational levels of upper secondary education in the state of Veracruz, various study options were identified. Analysis of the content taught in different secondary school modalities was not included due to the presence of various educational institutions such as community secondary schools, telesecondary schools, general secondary schools, and technical secondary schools. Among the options for upper secondary education offered in the state, there are general high schools, the Colegio de Bachilleres del Estado de Veracruz (COVAEV), the Telebachilleratos de Veracruz (TEBAEV), the Colegio Nacional de Educación Profesional Técnica (CONALEP), the Bachillerato en Línea de Veracruz (BELVER), among others.

Considering the context of the municipality of Perla and the available educational options in the region, telesecondary school was considered the most suitable modality for secondary education. On the other hand, for upper secondary education, telebachillerato was considered a viable option. It is important to highlight that the choice of educational modality will depend on various factors, including the educational offerings available in the area, the needs and preferences of the students, and other relevant aspects. In the case of telesecondary school, first-year students take the subject of geography, which covers aspects such as volcanoes, topography, climate, vegetation, and others. It is similar to what is taught in primary school, but the content is adapted to the students' age. Similarly, for upper secondary students, geography is taught in the fifth semester, and it is considered that all three levels cover content related to volcanoes and related topics.

Based on the studies considered as supporting evidence, the importance of protected natural areas, particularly the Pico de Orizaba, stands out. These areas not only guarantee the conservation of species but also provide benefits to nearby populations. In this sense, it is evident that work in these areas is not only focused on environmental protection but also takes into account the social and economic impacts generated by spaces like the protected area of Pico de Orizaba. As specified in the studies, a space like this not only provides opportunities but also requires knowledge to face unexpected risk situations such as a volcanic eruption. Due to its significant significance, an interesting anecdote exists in the cartography of the Orizaba peak concerning its

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geographical location within the states of Veracruz and Puebla. It was contended that due to the greater number of municipalities (extension) belonging to Puebla in the proximity of the Orizaba peak, it should rightfully belong to the State of Puebla, Redaccion, 2021. Finally, the peak of Orizaba was returned to the State of Veracruz, Lopez, 2021.

### IV. RESULTS

The results found show a wide range of research on protected national areas that focus not only on conservation but also on the sustainable use of natural resources that benefit the immediate populations within the protected area. Additionally, the historical and risk aspects are considered to prevent accidents caused by a volcanic eruption, even though the last eruption of the volcano dates back to 1876. There are several aspects to consider for the study of the country's largest mountain, but it is considered that the relevant importance has been given to all necessary points, as there are precedents that support this aspect. However, it is essential for the population to have a better understanding of the role that this volcano plays in their daily lives, without disregarding the risks associated with living near it.

Regarding education, topics related to the present research article are addressed. These can be found in textbooks, specifically in geography or natural sciences, which students at different educational levels, from primary to high school, study. However, it is necessary to align the suggested knowledge with the knowledge that students possess. For example, a student living in a community near the volcano may describe it differently from another student who has only seen the volcano in photos and has researched it online or in textbooks.

### V. DISCUSSIONS

The conducted research demonstrates the significance of national protected areas and the importance of the Pico de Orizaba in the high mountains region of Veracruz. However, it also highlights the need for methodologies and projects that involve multiple stakeholders, including governmental and educational institutions, as well as the general population. Each year, the loss of the Pico de Orizaba's glacier, water distribution, and the destruction of trees due to forest fires are reported, consequently impacting the species that thrive in the area. The development of a volcanic eruption evacuation plan should also be considered. It is important to note that this aspect specifically focuses on the municipality of La Perla. Although manuals of this kind exist, it is relevant to have one tailored to the specific needs of the municipality, enabling the specification of appropriate actions that residents can take in the event of such a disaster.

### V. CONCLUSIONS

The Pico de Orizaba goes beyond being just the tallest mountain in Mexico. In addition to being an emblematic place in terms of nature and adventure, it has also become a cultural and social destination for visitors seeking a unique experience. The mountain offers a variety of activities and attractions for the whole family. Apart from enjoying the breathtaking view from the summit, visitors can immerse themselves in the rich local culture by interacting with the residents of nearby communities and savouring the delicious regional cuisine.

Furthermore, local inhabitants provide transportation and guiding services to tourists, allowing them to explore the area in a safer and more effective manner. Local guides are familiar with alternative routes that visitors may not discover on their own, making their visit even more exciting and enriching. In summary, the Pico de Orizaba is much more than just a mountain. It is a place where nature, culture, and adventure come together to offer a unique and unforgettable experience for visitors.

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### CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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## Representation of Fisha's Female Image in the Novel Tears of God by Aguk Irawan M.N



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**ABSTRACT:** This study aims to: to obtain an objective picture of the representation of the female image of Fisha in the Novel *Air Mata Allah* by Aguk Irwan M.N. The approach used in this study is a qualitative research approach. The qualitative research approach is a research procedure that produces descriptive data in terms of physical images and psychic images. Analysis and discussion of the image of Fisha Agustina in the Novel Tears of God, tells about the journey and struggle of Fisha's character in facing various complex life problems.

**KEYWORDS:** Female image, physical, psychic

### I. INTRODUCTION

Imagery is a way of expressing a clear picture and fostering a special atmosphere, bringing the image to life in the mind and senses and to attract attention. (Pradopo, 2005: 78) suggests that images are defined as mental impressions or visual images evoked by words, or sentences that are typical basic elements in prose and poetry works. As for (Suprpto, 2007: 18) suggests that image is an inner impression or visual image that arises in a person caused by words or expressions in literary works he reads, image formation in literary works. In addition, (Sofia, 2009: 24) suggests that the image of women is all forms of mental, spiritual images and daily behavior of women that show women's faces and characteristics.

According to (Sugihastuti, 2008: 85) girls at a certain age can also make various decisions because of their secondary characteristics as physical characteristics. It depends on what the provisions are regarding women. Talking about women or women, the most important thing and absolutely should not be forgotten is the nature of women. One of the things that distinguishes men and women is only in nature, women have a natural nature that is impossible to violate which is also a limitation that must be accepted, for example women experience things that are typical for women that will never be experienced by men such as menstruation, pregnancy, childbirth and breastfeeding. Women who are often called women, daughters, wives and mothers are creatures who have subtlety of mind, skin, weak bone joints, which have little difference in body arrangement or shape with men (Chalil, 2008: 8). From some of the opinions above, it can be concluded that the image of women is a reflection of women as presented in female characters contained in novels or literary works. This condition makes women in an oppressed, inferior position, do not have freedom over themselves and their lives. Women are conditioned as weak beings whereas men are conditioned as strong beings. As a result, the role of women is often ignored in public life because women are only suitable in family roles. The psychic aspect of women is inseparable from the so-called femininity. This principle of femininity by (Sugihastuti, 2008: 95) is referred to as something that is a tendency that exists in women; These principles include the characteristics of *relatedness*, *receptivity*, love, nurturing various life potentials, orientation, and maintaining interpersonal relationships.

From the explanation above, the novel entitled *Tears of God* raised by the researcher is very suitable for research because it is in line and relevant to the purpose of this study, namely examining the Image of Women. Tears of *God* Novel As one of the narrative works that is required with the elements of the story, this novel tells about the journey and struggle of the female character named Fisha in facing various complex life problems. The formulation of the problem raised in this study is, 1) How is the manifestation of the Physical Image of Fisha character in the Novel *Tears of God* by Aguk Irwan M.N? and 2) How does Fisha's Psychic Image manifest in Aguk Irwan M.N's *Tears of God*?, while the goal that the author wants to achieve in this study is to obtain an objective picture of the female image of Fisha in the Novel *Air Mata Allah* by Aguk Irwan M.N.

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### II. METHOD

The research method used by the researcher, refers to The approach used in this study is a qualitative research approach. The qualitative research approach is a research procedure that produces descriptive data. According to (Satoto, 2013: 127) "The qualitative research approach is an approach that consists of qualitative data, namely tangible data not numbers but descriptions or statements. "The descriptive data referred to in this study is data collected in the form of words, sentences or paragraphs. These descriptive data aim to describe complex realities, in such a way that sociological or anthropological elevation is achieved. This technique is deciding, explaining, identifying, analyzing and interpreting (Satoto, 2013: 15).

The literary approach is basically a theory to understand a certain type of literature according to its nature. This approach must be in accordance with the subject matter to be studied. The selection of one type of approach is based more on the nature, characteristics, specifications of literary works as objects of study and goals to be achieved. In this case, researchers use objective research. An objective approach is one that focuses attention on the literary work itself. The approach views literary works as structures that are autonomous and free from their relationship with reality, author or reader.

### III. RESULTS AND DISCUSSION

#### A. Physical Image Aspects of Fisha Characters

Physical Image is a picture of women that is seen based on physical or external characteristics, such as age, gender, body condition, and facial characteristics. Physical images are usually formed first and are concerned with physical appearance, attractiveness, conformity and incongruence with gender. the physique of young and adult females. experiencing changes such as tearing of the hymen, experiencing menstruation, childbirth and breastfeeding. has the potential to progress, wants change and progress in himself both physically and intellectually. This fact can be seen from the following quote:

*Fisha Agustina is an extraordinary female figure, beautiful, kind, humble, optimistic and likes to work hard, time discipline, helpful, face-wise, seems to mean another girl of Padang blood, sweet and beautiful eyeballs. Her eyeballs are round, her frizz in line with her charming dimples. The smile that always adorned his lips always seemed sincere, not made up. His voice was clear and didn't tremble in the slightest when he spoke. (AMT, 2015:17).*

There are several aspects included in the physical aspect, namely:

#### 1) Beautiful

Beautiful is every woman's dream. With her beauty, a woman will be more confident in interpreting her existence. Fisha is an Indonesian woman of Javanese and Padang descent who comes from a simple family. Fisha, a beautiful female figure.

This fact can be seen from the following quote:

*Fisha Agustina's beautiful figure, of Padang blood, has a sweet face, it seems that she is the same as another Padang blood girl, sweet and beautiful eyeballs. Her eyeballs are round, her frizz in line with her charming dimples. The smile that always adorned his lips always seemed sincere, not made up. His voice was clear and didn't tremble in the slightest when he spoke. appearance, and so on. When she wears a red hijab, combined with a pink dress and a long skirt that matches the same color, the angel will be embarrassed in front of her. The stature is not too tall, but also not too short, not fat, but also not too thin, graceful appearance, beautiful face, white skin, beautiful eyebrows, that is the figure of a fisha character in the novel. (AMT, 2015:17).*

The quote above can be concluded that Fisha's character is

The female figure is extraordinary, beautiful, kind, likes to work hard, time discipline, likes to help, besides she has a humble nature. Fisha is also a girl who was born to a simple family as a result of love from her father and mother who came from different cities, her father came from Java, Cilacap, and her mother from the city of Padang. They met each other and formed their love in the region, Riau, Then from Riau, the small family moved to Padang, from Padang to Cilacap, and now settled in Jogjakarta. Fisha grew up to be a beautiful, beautiful, polite, articulate, devoted adult to her parents.

Above beauty, there is still beauty, although the beauty of the face is not comparable to the beauty of the heart and soul. Patient and steadfast in facing every problem both family, friends and education and maintaining her life with all struggles, never give up, besides that she is a smart and smart woman.

Fisha is a beautiful and attractive woman and a tough personality, An aura of gentleness radiates on her face, her smooth speech and style that often blushes make Fisha look different from other female students. Fisha is a woman to be proud of, she is always optimistic and mature-minded in responding to every problem of life as a woman who is able to accept all trials, and has a strong stand. All her behavior reflects the personality of a dynamic young woman. Fisha's figure inside the house and outside the house in various activities. All trials and struggles of life are lived sincerely and patiently. Fisha's love in the family as a happy individual lives her life. Fisha was sincerely able to survive and fight for her life and organize in the world of education. Fisha lives

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it all with a sense of pride and happiness, because what she has done has made her life more meaningful, she does not feel discouraged and hopeless, even she is optimistic about living her life.

### 2) Body Shape

Body shape is the state of the body, posture and stature of a person. The body is the entire merit of a human or animal visible from head to toe. Body posture is a body shape or posture that is visible from head to toe. The body is formed according to age development, but body shape is more dominantly influenced by the offspring of both parents. Apart from heredity, body shape can be changed and changed in our own way, for example exercise and consumption of food and drinks. The body shape we want we can achieve ourselves as long as we take care of it regularly.

This fact can be seen from the following quotes:

*When she wears a red headscarf, combined with a pink dress and a long skirt in the same color, the angel will be embarrassed in front of her. Her stature is not very tall, but also not short, not fat, but also not thin, Graceful in appearance, Beautiful face, White skin, Beautiful eyebrows. Fisha grows as a beautiful fir. Like a ferret that will become strong and mighty with every stroke of the wandering stick on its body, Fisha's face shines more and more day by day. Her pair of round and clear eyeballs are getting more beautiful in the eye, Her smile is more beautiful to look at, her dimples are more and more impressive.*

(AMT, 2015:17,126).

The quote above can be concluded that Fisha's character is

Extraordinary figure She is indeed beautiful, besides being beautiful She has a beautiful body shape pleasing to the eye. From a stature that is not too tall, nor too short, not fat and also not thin, slender cypress body, makes a man infatuated or fascinated with everything he has. The ideal body still looks beautiful outwardly and inwardly. Combined with beautiful speech, ayu, she is never arrogant but still humble. Fisha is beautiful and attractive and has a tough personality.

Fisha has a beautiful body, but all of that does not guarantee overall health, including she is a perfect female figure, Fisha's body condition is actually not healthy, because she has uterine cancer because of that disease she has no children, but Fisha is not a weak female figure, but she is a strong female figure living life and continues to work hard and fight for her family. He had a very spreading heart, facing a trial of life. He is always optimistic and mature-minded in responding to every problem in his life, both physical and spiritual.

### B. Aspects of psychic imagery

Psychic image is a picture of women seen from a psychological perspective, such as mentality, moral measures, can distinguish good and bad, and between right and wrong, temperament, desires, and personal feelings, attitudes and behaviors, and / or intelligence levels. Female psychic with a fragile personality, has a strong conscience, has a psyche that is never silent. Women who are strong, strong, independent and optimistic, have stable characteristics, stick to their choice of roles both as mothers and women in general are not easily discouraged and do not depend on men.

#### 1) Thought

The mind is the image, it thinks in the form of images, so you judge yourself also in the form of images, besides you react to these images as well. If you describe yourself as cheerful, vibrant, sociable, confident, successful and happy, this image you imagine continuously and your feelings become happy over this image, eventually this image will settle and remain in your subconscious.

This fact can be quoted as follows:

*Fisha couldn't say more. Finally, despite sadness, regret, disappointment, hurt, pain, and tears, Fisha left the hospital without saying goodbye and asking her beloved husband for permission. O, how painful is that heart? Painful, painful. That's also how Fisha feels at this time. On the third night in her solitude, Fisha's condition became even more painful. Somehow her husband's state in the hospital, she doesn't know. When her husband fell asleep beside her, Fisha couldn't close her eyes in the slightest. Looking at her husband's face with all love, full of love, but at the same time wondering: Is this child's problem a big obstacle until he turns like this?*

(AMT, 2015:272-305).

The quote above can be concluded that Fisha's character is

A strong and optimistic woman, Fisha's spirit is also a fragile individual. Actually, Fisha herself was worried about whether her domestic journey would be able to accept this ordeal, to be honest, she felt capable. Psychologically, Fisha is a woman with a strong instinct sensitivity, especially Fisha is described as a patient, strong and optimistic young woman.

Fisha felt uncomfortable and uneasy when far away from her husband, she felt that Fikri's attitude had really changed, and she was often left behind by her husband, only tears became the focus of grief that fell on her. The problem of children that made Fikri suddenly changed because her husband craved the presence of a baby born from his wife's womb. But all her husband's

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hopes turned away from the reality of the life they lived. Fisha hides her illness from her husband. Her husband never knew the suffering, pain, pain, pain that Fisha experienced. All these diseases resulted in Fisha being unable to produce, and provide offspring for her small family.

### 2) Personality

Personality is a translation of the word *personality*. The word *personality* comes from the Latin *persona* which means the mask used by the actor in the show, in the show the actor hides his real personality and presents himself according to the personality of the mask worn. Personality is a relatively stable system of internal character that contributes to consistency in thoughts, feelings and behavior. Patience is like the sweet fruit of a bitter seed.

This fact can be quoted as follows:

*And prayer is fertilizer for the soul that always expects His love and defense. Perfect, it's a word that might describe Fisha's mood. Of course, Fisha's appearance as she is with her natural beauty captivated the attention of many people. (AMT, 2015:45).*

The quote above can be concluded that Fisha's character is

Natural beauty without being made up with branded cosmetics. Fisha's appearance as she is captivated the attention of many people. So beautiful, Fisha is always balanced by fearing God, namely by praying because prayer is fertilizer for the soul that always expects love and defense. All her behavior reflects the personality of a young woman who is dynamic, strong, appropriate, towards religious teachings.

Fisha who was raised from a simple family, active inside the house and outside the home in various activities. Patient and sincere in facing all the trials of life. Fisha tumbu becomes, a kind, polite and devoted girl to her parents, when her parents experience a disaster Fisha is here as a motivator to raise and encourage her parents to remain patient and strong, do not despair, Allah does not close her eyes when she sees her suffering servant because we have to pray and ask for guidance from her so that all our suffering and heavy burdens feel light. Every difficulty must have ease if we try to face the trials of life with patience. The beautiful Fisha has a very extraordinary personality, faith which is based very firmly. Perfect He continued through difficult times patiently. She is a hardworking and tireless woman, she still fights for her future. And organize in the world of education. Fisha lives it all with pride and happiness because what she has done has made her life more meaningful, she does not feel discouraged and hopeless, even she is optimistic about living her life.

## IV. CONCLUSIONS

### A. Conclusion

An image is a form, image, in the form of a picture that many people have about a person, or a visual mental impression (shadow) generated by a word, or sentence that appears from its role or function in social life described by characters in a story. The image of women in this study is in the form of mental, spiritual and daily behavior expressed by Fisha's character who shows women's faces and characteristics. The image of women can be imaged as individual beings related to their roles as mothers and wives. Social beings who are heavily involved in the public, In this case are divided into two roles based on norms namely

- a) Women who have an active and passive role.
- b) Women who have negative roles.

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## Pait at Paet (Pain and Chisel): The Struggles and Victories of a Santo Maker



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**ABSTRACT:** Religious arts and crafts are culturally and spiritually relevant for many, leading to an interest for deeper understanding. The emergence of religious carving industries is essential to exploring this field. However, there has been limited research on people who decided to pursue this line of work. This study then aimed to provide a thorough understanding of the experience of individuals who start their own religious carving business. Using a case study design, results of the study provided in-depth account of the journey of individuals who start their own religious carving business which also included their motivations, difficulties, approaches, and coping techniques. Individuals in this venture can work toward achieving both personal and professional well-being by understanding the complex relationship between familial and entrepreneurial roles, addressing the challenges encountered, and putting into practice effective marketing and coping mechanisms.

**KEYWORDS:** religious carving, familial and entrepreneurial roles, religion and entrepreneurship

### I. INTRODUCTION

Religious art and craftsmanship hold significant cultural and spiritual importance in societies worldwide (Smith, 2010; Jackson, 2015). Within this realm, religious carving businesses have emerged as unique entrepreneurial ventures, merging artistic expression, cultural heritage, and economic viability (Gupta et al., 2018). However, little research has focused on the experiences of individuals who have embarked on this path. Therefore, this study aims to delve into the narratives of these individuals, uncovering the factors that influenced their decision to establish a religious carving business, their ability to balance familial and entrepreneurial roles, the marketing strategies employed to achieve financial stability, and the coping strategies implemented to overcome challenges.

Understanding the influential factors driving individuals to establish their own religious carving business is crucial for understanding their entrepreneurial motivations (Davenport, 2013; Kim & Park, 2017). Personal passions, cultural heritage, artistic skills, religious beliefs, economic opportunities, and market demand may all contribute to this decision (Clark et al., 2019; Roberts, 2021). By identifying these factors, researchers, policymakers, and aspiring entrepreneurs can gain deeper insights into the driving forces behind these ventures, allowing them to create an environment that nurtures the growth and success of religious carving businesses.

Entrepreneurship often poses unique challenges in maintaining a work-life balance, particularly when familial responsibilities are involved (Brush et al., 2018; Patzelt & Shepherd, 2014). Exploring how individuals in the religious carving business navigate these challenges can provide valuable lessons and strategies for other entrepreneurs facing similar circumstances. By understanding the approaches used to harmoniously integrate familial and entrepreneurial roles, researchers can provide guidance and support to aspiring entrepreneurs seeking a balanced and fulfilling personal and professional life.

The success and sustainability of any business venture hinge upon effective marketing strategies and financial stability (Kotler et al., 2020; Weaver & Moreno, 2016). Religious carving businesses are no exception. Investigating the factors that contribute to the marketing efforts of these entrepreneurs can offer insights into their target audience, pricing strategies, promotional

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techniques, and distribution channels (Rizk et al., 2018; Raval & Grönroos, 2020). Such understanding can assist aspiring entrepreneurs in positioning their businesses strategically, enhancing visibility, and achieving financial stability in a competitive marketplace.

Entrepreneurship is a journey riddled with various challenges, both in personal and professional realms (Shepherd & Haynie, 2009; Cardon & Patel, 2015). The ability to cope with these challenges is vital for the success and well-being of individuals and their businesses. By identifying and sharing the coping strategies employed by individuals in the religious carving business, this research can provide valuable guidance and support for entrepreneurs facing similar adversities. The insights gained can foster resilience, enhance problem-solving skills, and contribute to the overall well-being of entrepreneurs and their families.

In sum, the establishment and growth of religious carving businesses have been an important aspect of entrepreneurial endeavors. However, there is a lack of comprehensive understanding regarding the journey of individuals who have embarked on this path. This research aims to address this gap by exploring the influential factors that inspire individuals to establish their own religious carving businesses, the challenges they face in balancing familial and entrepreneurial roles, the marketing factors contributing to their financial stability, and the coping strategies employed to overcome various challenges. By examining these aspects, this study seeks to provide valuable insights into the experiences of religious carving business owners and offer practical guidance for aspiring entrepreneurs in this industry.

### **II. RESEARCH OBJECTIVES**

This research aims to provide a comprehensive understanding of the journey of individuals who establish their own religious carving business.

Specifically, this research aims to:

1. describe the influential factors that motivate individuals to establish their own religious carving business;
2. narrate how individuals balance familial and entrepreneurial roles upon starting their religious carving business;
3. identify factors contributing to marketing strategies for financial stability; and
4. Discuss coping strategies used to overcome challenges in both family and business contexts.

### **III. SIGNIFICANCE OF THE STUDY**

The current study holds theoretical, methodological, and practical implications. By exploring the journey of individuals in establishing their own religious carving businesses, the present study contributes to the existing literature on entrepreneurship, specifically within the context of artistic and cultural industries. In addition, the use of qualitative methods contributes to the existing body of research by providing a rich and contextualized understanding of the experiences of religious carving business owners. Lastly, by understanding the influential factors, balancing strategies, marketing approaches, and coping mechanisms employed by successful entrepreneurs, aspiring individuals can gain practical knowledge to navigate the challenges they may encounter. Additionally, the findings can inform the development of supportive policies and programs to foster entrepreneurship in the religious carving industry. It can help policymakers understand the specific needs, challenges, and opportunities faced by individuals in this industry, leading to the creation of targeted interventions and support systems. Furthermore, the study contributes to the broader understanding and appreciation of the cultural and artistic significance of religious craftsmanship. It underscores the importance of recognizing and sustaining cultural heritage and craftsmanship, both from an economic and cultural perspective. In sum, the significance of this study lies in its contributions to theoretical knowledge by expanding the understanding of entrepreneurship in the religious carving industry, family dynamics, and coping strategies in the context of creative and cultural industries, its methodological approach of capturing rich narratives and insights, and its practical implications for aspiring entrepreneurs, policymakers, and cultural stakeholders.

### **IV. SCOPE AND LIMITATIONS**

The present study is focused on exploring the journey of individuals who have established their own religious carving businesses. It aimed to provide a comprehensive understanding of the factors that inspire their entrepreneurial decision, the balancing act between familial and entrepreneurial roles, the marketing strategies contributing to financial stability, and the coping strategies employed to overcome challenges. The study involved qualitative research methods such as interviews and narratives to gather in-depth insights from participants who have experience in the religious carving industry. The research was conducted within a specific geographic region or community, which may limit the generalizability of the findings to other contexts or cultures. The experiences and challenges faced by religious carving business owners may vary in different cultural, economic, and religious settings. The study relied on self-reported data from participants. In sum, the study aimed to provide valuable insights into the

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journey of individuals in the religious carving industry and contribute to the existing knowledge base on entrepreneurship, work-life balance, and coping strategies in this specific context.

### **V. REVIEW OF LITERATURE**

The literature related to the journey of individuals establishing their own religious carving businesses encompasses various aspects, including entrepreneurship, cultural heritage, work-life balance, marketing strategies, and coping mechanisms. This review provides an overview of key studies and concepts relevant to understanding the experiences and challenges faced by religious carving business owners.

Entrepreneurship in the artistic and cultural industries has been a subject of growing interest. Scholars have explored the motivations and factors driving individuals to pursue entrepreneurial ventures in these domains. Clark et al. (2019) highlighted the importance of cultural embeddedness and personal passions in the entrepreneurial decision-making process. They emphasized the role of cultural heritage and identity in shaping entrepreneurial motivations. Additionally, Gupta et al. (2018) examined the influence of gender stereotypes on perceptions of entrepreneurs and intentions to become an entrepreneur, emphasizing the need for a comprehensive understanding of the multifaceted factors that drive individuals in establishing their own businesses.

Balancing familial and entrepreneurial roles is a significant challenge faced by entrepreneurs. Research has examined the work-life integration strategies employed by individuals in various entrepreneurial contexts. Patzelt and Shepherd (2014) investigated the negative emotions and regulatory coping behaviors experienced by entrepreneurs, highlighting the importance of managing stress and well-being. Brush et al. (2018) developed a gender-aware framework for women's entrepreneurship, emphasizing the need for support systems and policies that facilitate work-family balance. These studies offered insights into the challenges faced by individuals in managing both their business and family responsibilities.

Marketing strategies play a crucial role in the financial stability and success of religious carving businesses. Ravald and Grönroos (2020) emphasized the value of value propositions in business markets, emphasizing the need for businesses to effectively communicate their unique offerings to their target audience. Rizk et al. (2018) examined the influence of co-creation on entrepreneurial marketing, highlighting the importance of involving customers in the design and promotion of religious carving products. These studies provided insights into the marketing approaches employed by religious carving business owners to achieve financial stability.

Coping strategies are vital for overcoming challenges in both personal and professional arenas. Shepherd and Haynie (2009) explored identity management in entrepreneurship, emphasizing the importance of personal resilience and adapting to changing circumstances. Cardon and Patel (2015) investigated the trade-offs between stress-related health and wealth for entrepreneurs, highlighting the need for effective coping mechanisms to maintain well-being. These studies shed light on the strategies used by individuals to navigate the challenges and uncertainties of entrepreneurship.

The literature cited demonstrates the multidimensional nature of establishing a religious carving business. It emphasized the importance of personal motivations, cultural heritage, work-life balance, marketing strategies, and coping mechanisms in shaping the experiences of religious carving business owners. However, there remains a gap in research specifically focusing on the journey of individuals in the religious carving industry. This study aimed to contribute to this literature by providing a comprehensive understanding of the influential factors, role balancing, marketing strategies, and coping mechanisms employed by individuals in the religious carving business.

In addition to the aforementioned literature, there are studies that explored the intersection of entrepreneurship and the arts, which provide valuable insights into the entrepreneurial aspects of religious carving businesses. Davenport (2013) discussed "artpreneurship" and the unique challenges faced by artists turned entrepreneurs, highlighting the importance of creativity, innovation, and business acumen in the artistic domain. Jackson (2015) examined the impact of entrepreneurship in the creative arts, emphasizing the role of aesthetics, storytelling, and branding in creating a distinct identity for artistic ventures. Weaver and Moreno (2016) presented case studies of artists who have successfully integrated their artistic passion with entrepreneurial pursuits, shedding light on the strategies and approaches employed by artists in building their businesses.

The role of religion in entrepreneurship has also been explored in the literature. Smith (2010) investigated the impact of religion on business ethics, highlighting the influence of religious values and principles on ethical decision-making in entrepreneurial contexts. Roberts (2021) examined the relationship between religion and entrepreneurship, exploring how religious beliefs and practices shape entrepreneurial behaviors, motivations, and outcomes. These studies provided insights into the unique context of religious entrepreneurship and its potential implications for individuals in the religious carving industry.

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Furthermore, marketing in the digital era is a relevant aspect for religious carving businesses to consider. Kotler, Kartajaya, and Setiawan (2020) introduced the concept of Marketing 4.0, which emphasizes the integration of digital technology and customer-centric strategies to engage and attract customers in the digital age. Understanding how religious carving businesses can leverage digital marketing tools and platforms can enhance their visibility, reach, and customer engagement, contributing to their financial stability.

While these studies provided valuable insights into various aspects related to entrepreneurship, cultural heritage, marketing, and coping strategies, there is a need for specific research focusing on the journey of individuals in the religious carving industry. This study aimed to bridge this gap by providing a comprehensive exploration of the experiences, challenges, and strategies employed by religious carving business owners. By building on the existing literature, this research sought to contribute to theoretical knowledge, methodological approaches, and practical insights that can support aspiring entrepreneurs, inform policymakers, and promote the cultural and artistic significance of religious craftsmanship.

Additionally, it is worth noting that the literature on religious carving itself provided a foundation for understanding the cultural and artistic significance of this industry. Studies exploring the historical and cultural aspects of religious carving traditions, such as Rasmussen's (2012) examination of woodcarving in religious art and architecture, highlighted the deep-rooted traditions and craftsmanship associated with this art form. These studies underscore the importance of preserving and promoting cultural heritage through entrepreneurial initiatives.

Moreover, research on family businesses can offer valuable insights into the dynamics of familial involvement in entrepreneurial ventures. Family business literature, such as Chrisman et al.'s (2012) exploration of the challenges and benefits of family involvement in entrepreneurship, provided a lens through which to examine the unique familial and generational aspects of religious carving businesses. Understanding the interplay between family dynamics, succession planning, and entrepreneurial decision-making within the context of religious carving can contribute to a more holistic understanding of the challenges and opportunities faced by these businesses.

Lastly, research on coping strategies and resilience in entrepreneurship can inform one's understanding of how individuals in the religious carving industry navigate challenges and setbacks. Studies on resilience, such as Cardoso and Vieira's (2020) examination of resilience strategies among entrepreneurs, shed light on the psychological factors that contribute to overcoming obstacles and maintaining motivation in the face of adversity. By exploring the coping strategies employed by religious carving business owners, this study can contribute to the existing literature on resilience in entrepreneurship and provide practical insights for entrepreneurs in this industry.

Overall, the review of related literature demonstrates the significance of understanding the journey of individuals who establish their own religious carving businesses. By drawing on concepts from entrepreneurship, cultural heritage, work-life balance, marketing, coping strategies, and other relevant domains, this study aimed to provide a comprehensive analysis that contributes to theoretical knowledge, methodological approaches, and practical insights. It builds upon and synthesizes existing literature to fill the gap in understanding of the experiences, challenges, and strategies of individuals in the religious carving industry, ultimately offering valuable contributions to academia, practitioners, policymakers, and cultural stakeholders.

## **VI. METHODOLOGY**

This section provides an in-depth exploration of the research design, research participants, research locale, data gathering procedure, data analysis approach, and ethical considerations observed in this study. These elements collectively contribute to the rigor and credibility of the research, ensuring the reliability and validity of the findings. By delving into the various components of the methodology, this section sheds light on the systematic and ethical approach taken to conduct the study and obtain meaningful insights into the research questions at hand.

### **A. Research Design**

The chosen research design for this study is the case study design, which is highly appropriate for investigating the struggles and victories of santo makers in the religious carving industry. The case study design enables researchers to delve deeply into the experiences, challenges, and achievements of individuals within their real-life context. By employing in-depth interviews, observations, and document analysis, the case study design offers a rich and detailed exploration of the phenomenon under investigation. It allows for a comprehensive understanding of the influential factors that drive individuals to establish religious carving businesses, the coping strategies they employ to overcome challenges, and the dynamics between family and entrepreneurial roles. Additionally, the case study design facilitates an exploration of market conditions, including customer dynamics and marketing strategies. The use of multiple data sources enhances the validity and reliability of the findings. Furthermore, the case study design allows for flexibility and adaptability in data collection and analysis, enabling the exploration



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of new insights and unexpected findings. The practical implications of the study are significant, as it can provide recommendations for aspiring religious carving entrepreneurs, inform policymakers and cultural stakeholders, and contribute to the preservation of cultural heritage.

### B. Research Participants

The sampling procedure for this study involved purposive sampling with the following criteria: being the head of the family and being engaged in the religious carving business. Two participants were selected based on these criteria, allowing for an in-depth exploration of their experiences and perspectives. The purpose of using purposive sampling was to specifically target individuals who could provide valuable insights into the struggles and victories of santo makers.

These participants represent different backgrounds and circumstances within the religious carving industry. Participant 1's experience as a single parent and Participant 2's role as a provider for their siblings may introduce unique perspectives and challenges related to balancing familial responsibilities and entrepreneurial endeavors. The contrasting educational backgrounds and family dynamics of the participants further contribute to the diversity of experiences that can be explored in the study.

**Table 1. Characteristics Of The Participants**

Characteristics	Participant 1	Participant 2
Age	56	61
Educational Attainment	Attempted to pursue a vocational	AB Economics graduate
Civil Status	Married	Married to a Swiss national
Family Characteristics	Single parent	Provider to her siblings
Year started in the carving industry	Since 1986	Since 1996

### C. Research Locale

Paete, Laguna is a town located in the province of Laguna, Philippines. It is a notable research locale due to its rich cultural heritage and historical significance in the field of religious carving. Paete is often referred to as the "Carving Capital of the Philippines" because of its long-standing tradition and expertise in woodcarving, particularly in creating religious statues and images known as "santos."

One of the key factors that make Paete an ideal research locale is its deep-rooted tradition of religious carving. The town has been engaged in the art of carving for centuries, with skills and techniques passed down from one generation to another. This heritage provides a unique context for exploring the experiences of individuals who establish their own religious carving businesses in Paete.

The presence of numerous skilled artisans and craftsmen in Paete creates a conducive environment for studying the intricacies of the religious carving industry. Researchers have the opportunity to interact with and learn from these artisans, gaining insights into their artistic processes, inspirations, challenges, and achievements. The close-knit community of carvers in Paete fosters a supportive and collaborative atmosphere, providing a rich source of information and experiences for the study.

Additionally, Paete's geographical location and accessibility make it suitable for conducting research. Situated in the province of Laguna, Paete is easily accessible from major cities such as Manila. This allows researchers to conveniently travel to the locale, engage with participants, and immerse themselves in the cultural and artistic environment of the town.

Furthermore, Paete's cultural heritage extends beyond religious carving. The town boasts a vibrant art scene, with various art forms and expressions flourishing alongside carving. This diversity presents an opportunity to explore the interplay between different art forms and their influence on the religious carving industry.

The local government and cultural institutions in Paete also play a significant role in supporting and preserving the town's cultural heritage. The presence of initiatives, organizations, and festivals dedicated to promoting and showcasing the art of carving further enhances the research environment.

### D. Data Gathering Procedure

The data gathering procedure for this study involved conducting in-depth interviews with the selected participants, following a qualitative research approach. In-depth interviews are a valuable method for gathering rich and detailed data, allowing for an in-depth exploration of the participants' experiences, perspectives, and insights.

To begin the data gathering process, a semi-structured interview guide was designed. This guide consisted of open-ended questions that were aligned with the research objectives and areas of interest. The questions were carefully crafted to elicit comprehensive responses from the participants and provide a deeper understanding of their journey as santo makers in the religious carving business.

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The interviews were conducted in a comfortable and private setting, chosen in collaboration with the participants to ensure a conducive environment for open and honest discussions. The researcher adopted a conversational and empathetic approach, creating a safe space for the participants to share their stories, challenges, victories, and coping strategies. The interviews were audio-recorded with the participants' permission to ensure accurate capture of their responses.

Throughout the interviews, the researcher employed probing techniques and asked follow-up questions to delve deeper into the participants' narratives. This allowed for a more nuanced understanding of their experiences and facilitated the emergence of new insights. The researcher also took field notes during or immediately after the interviews, documenting contextual details, non-verbal cues, and personal reflections on the interview process.

### **E. Data Analysis**

The data analysis for this study utilized thematic analysis, a robust qualitative analysis approach suitable for uncovering patterns, themes, and relationships within the data. The analysis process began with a thorough familiarization with the data, involving multiple readings of the interview transcripts to immerse the researcher in the participants' narratives and experiences. Initial coding was then performed, where significant units of information were identified and labelled as codes. These codes were subsequently organized into preliminary themes, with related codes grouped together based on shared meanings and relevance to the research objectives.

A critical review and refinement stage followed, where the emerging themes were carefully examined and revised to ensure coherence and accuracy. The researcher constantly referred back to the original data to validate the themes and ensure they captured the complexities and nuances of the participants' stories. Each finalized theme was then assigned a concise name and provided with a detailed definition to encapsulate its content and meaning.

Data mapping was conducted by systematically analyzing the coded data within each theme, identifying, and extracting relevant quotations, segments, or extracts that supported and illustrated the themes. The interpreted themes were synthesized to form a comprehensive understanding of the participants' struggles, victories, coping strategies, and outcomes related to their involvement in the religious carving business. The findings were interpreted in relation to the research objectives, existing literature, and the participants' narratives, aiming to generate meaningful insights and contribute to the overall understanding of the research topic.

Throughout the data analysis process, rigorous validation techniques were employed to enhance the trustworthiness and credibility of the findings. This included engaging in reflection, discussion, and peer debriefing to ensure the analytical decisions were grounded and well-supported. Triangulation, member checking, and maintaining an audit trail of analytical decisions were additional measures used to ensure the reliability and rigor of the analysis.

Thematic analysis proved to be an appropriate and effective method for analyzing the qualitative data collected through in-depth interviews. By systematically organizing and interpreting the data, this analysis approach enabled the researcher to identify and understand the key themes that emerged from the participants' narratives, providing valuable insights into their experiences, challenges, and strategies as santo makers in the religious carving business.

### **F. Ethical Considerations**

Ethical considerations play a crucial role in research involving human participants. In this study, several ethical principles were upheld to ensure the protection, respect, and well-being of the individuals involved. Respect for human persons, beneficence, justice, research merit, and integrity were given due attention. Furthermore, ethical approval and oversight were obtained from relevant research ethics committees or institutional review boards to ensure compliance with ethical guidelines and regulations. The study adhered to the ethical principles outlined in the research ethics guidelines and codes of conduct, promoting responsible and ethical research practices.

## **VI. RESULTS AND DISCUSSION**

This section presents a comprehensive analysis of the findings, exploring the various aspects related to the journey of individuals who established their own religious carving business. This section delves into the influential factors that inspired the decision to enter the carving industry, shedding light on the motivations and aspirations of the participants. Additionally, it examines the intricate balance between familial and entrepreneurial roles, highlighting the challenges faced by individuals in managing family and business responsibilities. The role of the spouse in the business and the impact on family life and daily needs are also explored. Furthermore, the section investigates the factors contributing to marketing success and financial stability, uncovering strategies employed by participants to achieve their goals. Lastly, the coping strategies utilized to overcome challenges, including both family and business crises, as well as the adaptation to the impact of the COVID-19 pandemic, are discussed in

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detail. Through an in-depth analysis of these themes, this section provides valuable insights into the experiences, strategies, and outcomes of individuals involved in the religious carving business.

### **A. Influential Factors in Establishing a Religious Carving Business**

The results of the study reveal the factors that inspired the participants to establish their religious carving businesses. Participant 1's decision was influenced by her husband's involvement in the carving industry. She initially had no background in this line of work, but her husband's instructions and the opportunity to improve her skills sparked her interest. The unexpected order for a large image of Our Lady of Manaoag, which brought satisfaction to the client, further solidified her desire to be in the industry. As Participant 1 expressed, "Seeing their client's satisfaction made her want to be in the industry. Besides, this has been their bread and butter since the beginning of their family life." This quotation illustrates the importance of client satisfaction and the economic necessity of the carving business for her family's livelihood.

Participant 2, on the other hand, experienced a career transition from teaching to religious carving. The decision to establish a carving business came after receiving an order for a life-sized image of Our Lady of Lourdes from a satisfied customer who happened to be a seminarian. This positive feedback and the belief that it was a path chosen by the Divine influenced her decision to pursue the business. Additionally, Participant 2's realization of the family's history in the carving industry, dating back to her late father's involvement in the 1960s, further motivated her to give it a try. The quotation, "So, I told myself, since I have the roots of a magpopoon, why not give it a try? I had decided to focus on this business in 2006.", showcases the combination of personal conviction and honoring family heritage as factors that inspired her to enter the religious carving business.

These findings align with previous research that highlights personal motivations, economic considerations, and the influence of family background as factors contributing to entrepreneurship in the arts and crafts industry (Chong & Wong, 2019; Ramadani et al., 2019). The desire to showcase artistic skills, the economic viability of the business, and the sense of calling or connection to religious traditions are commonly reported inspirations for individuals entering the religious carving industry (Wong, 2013). The participants' experiences reflect the intertwining of personal aspirations, economic opportunities, and cultural heritage that shape their decisions to establish and pursue religious carving businesses.

The quotations from the participants provide firsthand insights into the factors that inspired their decisions to enter the religious carving industry. These findings are supported by existing literature, highlighting the significance of personal motivations, economic considerations, and cultural influences in entrepreneurial pursuits within the arts and crafts sector.

### **B. Familial and Entrepreneurial Roles and the Impacts on Family**

The results of the study shed light on the participants' experiences and challenges in balancing familial and entrepreneurial roles within the religious carving business. Participant 1 expressed the difficulty of managing both responsibilities and the need for financial stability to support their growing family. The quotation, "I hired a maid who would do the house chores because I did not have enough time to do that anymore.", reveals the extent to which Participant 1 had to allocate her time and prioritize the business. She acknowledged the importance of her involvement in the work to increase productivity and meet the demands of producing more products. Additionally, she even considered seeking employment in other shops to supplement their income and mitigate financial challenges.

Participant 2, on the other hand, highlighted her role as the family's breadwinner. Despite getting married at the age of 49, she took on the responsibility of providing for her family, particularly during times of financial difficulty. The quotation, "Since I was twenty, I have been solving problems in our family especially the financial aspects.", showcases her dedication and selflessness in supporting her siblings, to the point of giving her last peso to those in need.

These findings resonate with previous research that explores the challenges faced by individuals in balancing family obligations and entrepreneurship. Balancing familial and business responsibilities is a common struggle reported by entrepreneurs, particularly those operating small and family-owned businesses (Bruderl & Schussler, 1990; DeTienne & Chirico, 2013). The need for financial stability and the commitment to support the family's well-being are often driving forces behind entrepreneurs' efforts (Carsrud & Brannback, 2011). The experiences of Participant 1 and Participant 2 reflect the complex interplay between familial obligations, financial considerations, and the pursuit of entrepreneurial endeavors in the religious carving industry.

These quotations from the participants offer firsthand perspectives on the challenges and sacrifices they encountered while striving to fulfill their familial and entrepreneurial roles. The findings align with existing literature, emphasizing the significance of managing time, resources, and financial stability in the context of family-owned businesses. It highlights the dedication and selflessness demonstrated by these entrepreneurs in prioritizing the well-being of their families while pursuing their business goals.

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### **1) Role of the Family Members in the Business:**

The results of the study provide insights into the participants' approaches to managing their businesses in relation to their family members. Participant 1 emphasized the collaborative nature of their business with her husband. The quotation, "I was with my husband then. We were together in this business.", highlights their partnership in starting and operating the business. However, Participant 1 expressed confusion regarding the recurring issue of insufficient finances despite the perceived success of their business. This raises questions about the financial management aspect of their enterprise.

Participant 2, on the other hand, took a different approach to involving family members in the business. She mentioned making her siblings workers whenever there was a need, compensating them for their services rendered. The quotation, "I made them my workers whenever needed. Let's say, I would be asking my brother to do this and that and then afterwards, I would pay him.", demonstrates her willingness to provide employment opportunities to her siblings while also acknowledging their contributions by compensating them for their work.

These findings resonate with previous literature on family-owned businesses, highlighting the dynamics and challenges associated with involving family members in entrepreneurial ventures. Family involvement in business can bring both benefits and complexities (Chrisman et al., 2010). While family members can provide valuable support and contribute to the success of the enterprise, issues related to communication, decision-making, and financial arrangements may arise (Brunninge & Nordqvist, 2017; Sharma et al., 2018). Participant 1's puzzlement regarding the financial situation of their business suggests a potential area of improvement in financial management practices. Participant 2's approach of engaging family members as workers and providing fair compensation showcases a balance between family ties and maintaining professional relationships.

These quotations provide insights into the participants' experiences and strategies in involving family members in their businesses. The findings align with existing literature, emphasizing the importance of effective communication, clear roles and responsibilities, and fair compensation in managing family involvement within entrepreneurial ventures. The experiences of the participants highlight the complexities and opportunities that arise when family and business intersect in the religious carving industry.

### **2) Impact on Family Life and Daily Needs:**

The results shed light on the participants' experiences in managing their family's financial needs through their religious carving businesses. Participant 1 expressed initial optimism about the business's ability to provide for their needs, stating, "When I was the one who managed it, I noticed, yes, it could suffice our needs." However, she later discovered that financial challenges arose due to her husband's extramarital affair and his control over her projects. This situation created a strain on their financial stability, making it difficult to meet their family's needs.

Participant 2, on the other hand, shared her role as the dependable sibling whom others turn to in times of financial need. She stated, "It is funny to know that I am not the eldest. In fact, I am the fourth. But I guess, I am the tough one. Since I was single and even until now that I am married, they come to me whenever they are faced with problems." This highlights her sense of responsibility and the financial support she provides to her siblings, even before she got married.

The experiences of the participants reflect the complexities and challenges that can arise in managing both family dynamics and financial stability within a business context. Participant 1's situation highlights the impact of interpersonal issues and unequal power dynamics on the financial well-being of the family and the business. It underscores the need for effective communication, transparency, and shared decision-making processes to maintain financial stability and address potential conflicts in family-owned enterprises.

Participant 2's experience showcases the role of a reliable and financially supportive family member. This aligns with the concept of familism, which emphasizes the importance of familial relationships, mutual support, and collective decision-making within family-owned businesses (Danes et al., 2015). Participant 2's willingness to assist her siblings financially reflects the values of responsibility and reciprocity within the family system.

These findings resonate with existing literature on family dynamics and financial management in entrepreneurial families. Family businesses often face challenges related to financial decision-making, power dynamics, and the integration of personal and professional roles (Memili et al., 2015; Sharma et al., 2018). The experiences of the participants highlight the multifaceted nature of managing family and business responsibilities, emphasizing the need for open communication, trust, and equitable distribution of resources.

In conclusion, the results demonstrate the participants' experiences and challenges in managing their family's financial needs through their religious carving businesses. Participant 1's situation highlights the impact of interpersonal issues and power dynamics, while Participant 2 exemplifies the role of a reliable family member in providing financial support. These findings align with existing literature on family businesses, emphasizing the complexities of managing both family and business aspects.

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Effective communication, shared decision-making, and equitable resource allocation are crucial for achieving financial stability and maintaining harmonious family dynamics within entrepreneurial ventures.

### **C. Marketing Success and Financial Stability**

#### **1) Factors Contributing to Marketing Success:**

Participant 1 highlighted that the months with the highest demand for santos are September to December. These months are overwhelming for the participants due to the influx of orders. However, they prioritize maintaining the quality of their products and may decline orders if they reach their maximum capacity. Participant 1 mentioned the distinction between orders intended for the Holy Week season, which they are more likely to accept, and orders for the Christmas season, which may be declined due to high demand:

“Before this season comes, I secure wood from my supplier for I have to sundry the wood blocks because it is not ideal to carve the wood if it still contains moisture inside.

September to December. These months are overwhelming to us! There are times when we say no to an order for we do not have much time for its production. The quality might suffer, and I do not want that to happen. But if in case your desired item is intended for the Holy Week season, then I could accept it and have it listed on my bulletin board. But if what you are ordering is intended for the Christmas season such as the nativity scene or the Infant Jesus, I am sorry, but when we reached our maximum number of orders, I would say no to the client already.”

In terms of preparation, Participant 1 mentioned the importance of securing wood from their supplier and sun drying the wood blocks before carving. This step is crucial to ensure that the wood is free from moisture, which can affect the quality and durability of the finished product. Furthermore, Participant 1 mentioned the historical practice of sourcing wood locally in Paete, which was exempted from illegal logging regulations in the past:

“Before, we did not need to order it from Quezon for we were exempted from the illegal logging. You would just climb our mountains here in Paete whenever you need it.”

Participant 2 emphasized the need for a sufficient volume of wood to meet the demand. They emphasized the importance of stocking and drying the wood naturally, allowing the moisture to escape and preventing defects such as cracks or rashes in the finished product. However, Participant 2 also expressed concern about the scarcity of wood, highlighting the challenges faced by carvers in Paete despite being known as the Carving Capital of the Philippines:

“We have a scarcity of wood. I think that’s something that the new magpopoons do not know. It’s saddening that we who are in the Carving Capital of the Philippines are experiencing this.”

The participants' experiences align with the literature on seasonal demand and the importance of wood preparation in the carving industry. The high demand for Santos during specific months, particularly for religious occasions like Christmas and Holy Week, has been documented in studies on the carving industry in Paete (Sahagun, 2012). These findings reflect the seasonal nature of the market and the need for carvers to manage their capacity and prioritize quality.

The participants' emphasis on wood preparation aligns with the best practices outlined in carving literature. Proper drying of wood is essential to prevent deformities and ensure the longevity of the finished product (Soria & Labaro, 2017). The scarcity of wood mentioned by Participant 2 reflects the challenges faced by artisans in sourcing quality materials, which may have implications for the sustainability and future of the carving industry in Paete.

The results highlight the seasonality of demand for Santos in Paete and the participants' strategies for preparation and managing orders. The quotations provided by the participants give a firsthand account of their experiences and insights. These findings are supported by existing literature on the carving industry and contribute to a deeper understanding of the challenges and practices within this unique business context.

#### **2) Financial Stability and Support for the Family**

Participant 1 mentioned, “I look for repainting jobs, I ask my former clients if they have images to be repaired and repainted.” Also, my team does out of town services where we visit churches and stay there for a couple of days for us to repair or restore broken images. This quote highlights the participant's proactive approach to maintaining financial stability by seeking additional sources of income through repainting and restoration services. By capitalizing on their skills and expertise in Santos carving, they can generate revenue beyond the creation of new sculptures.

Participant 2 stated, “What they do not know is that I also make altars, I make carrozas.” People are even asking how I survive for I still have a monthly rental to settle. This quote illustrates the participant's resourcefulness in diversifying their product offerings to supplement their income. By expanding their craft to include altars and carrozas (carriage floats), they can cater to a broader market and generate additional revenue streams.

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Regarding pricing decisions, Participant 1 mentioned, "I make several computations from the wood, to the labor, and other materials needed in producing the santo." The participant's quote highlights the importance of considering various factors, such as material costs and labor, when determining the selling price of a santo. They also mentioned adjusting the price based on customer requests for discounts, aiming to strike a balance between meeting customer expectations and maintaining desired profit margins.

Participant 2 shared, "I make a quotation from the picture of the desired image by the customer." This quote emphasizes the participant's approach to pricing by assessing the complexity of the desired design. If a customer's requested style or intricacy of the carving requires additional effort, the participant adjusts the price accordingly. They also consider factors such as the quality of metal accessories and hair materials chosen by the customer, which contribute to the final pricing of the santo.

These quotes from the participants highlight their strategies for maintaining financial stability, such as seeking additional services and diversifying their product offerings. Additionally, their pricing decisions are informed by factors such as material costs, labor, and customer preferences, demonstrating their consideration of both profitability and customer satisfaction.

Literature on small business management and pricing strategies can support these findings. Small business owners often adopt diversification strategies to increase revenue streams and minimize dependence on a single product or service. According to research by Brouthers, Nakos, and Dimitratos (2015), diversification can enhance financial performance and stability. Furthermore, pricing decisions in small businesses are influenced by various factors, including production costs, market demand, and customer preferences (Luo, Sun, & Wang, 2011). The participants' approaches align with these principles, demonstrating their resourcefulness and consideration of key factors in maintaining financial stability and setting appropriate prices for their Santos.

The participants' quotes shed light on their alternative strategies to maintain financial stability and their pricing considerations. These strategies align with common practices in small business management, emphasizing the importance of adaptability, diversification, and customer-centric pricing.

Participant 1's focus on repainting jobs, repairs, and out-of-town services showcases their flexibility in leveraging their expertise beyond Santos carving. This approach allows them to tap into additional revenue streams and cater to a wider range of customer needs. The participant's proactive attitude towards seeking opportunities for repainting and restoration work demonstrates their commitment to sustaining their business's financial stability.

Similarly, Participant 2's engagement in creating altars and carrozzas reflects their willingness to explore complementary products to supplement their income. By expanding their offerings, they can cater to different customer preferences and capitalize on related markets. This diversification strategy aligns with the literature, which emphasizes the benefits of expanding product lines to maximize revenue potential and mitigate risks associated with relying solely on one product (Covin & Slevin, 1991).

Regarding pricing decisions, Participant 1's quote highlights their comprehensive approach, considering factors such as material costs, labor, and other production expenses. This aligns with the cost-based pricing approach, where businesses calculate their costs and add a profit margin to determine the selling price (Mankiw & Taylor, 2014). The participant's flexibility in offering discounts to customers while still aiming to maintain their desired profit margin demonstrates their ability to strike a balance between customer satisfaction and profitability.

Participant 2's quote emphasizes the importance of tailoring pricing to customer preferences and design complexities. By assessing the desired image from a customer's picture, they can provide accurate quotations based on the intricacy of the carving, materials used, and additional customization requirements. This approach aligns with value-based pricing, where businesses consider the perceived value of the product or service to customers (Nagle & Holden, 2002). By adjusting prices based on design complexity, material choices, and other customer preferences, the participant ensures that the pricing reflects the value provided to customers.

The participants' alternative strategies and pricing considerations reflect their entrepreneurial mindset and resourcefulness in navigating the challenges of the Santos carving business. These approaches are in line with established principles in small business management and pricing strategies, supporting their efforts to maintain financial stability and meet customer demands.

### **D. Coping Strategies for Overcoming Challenges**

Participant 1's statement, "My husband had a mistress..." highlights a significant challenge they faced within their marriage. The revelation of an extramarital affair can have far-reaching consequences, impacting various aspects of the individual's life, including their financial stability, business, and family dynamics.

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The financial instability mentioned by the participant can stem from several factors. The affair may have led to a loss of trust between the spouses, potentially affecting their ability to collaborate and make joint financial decisions. The participant may have experienced emotional distress and found it challenging to focus on their business or maintain productivity while dealing with the aftermath of the affair.

Moreover, the strain on the marital relationship can have cascading effects on other aspects of the participant's life. Research by Amato and Previti (2003) supports the notion that extramarital affairs can result in emotional distress for the betrayed spouse, causing feelings of betrayal, anger, and sadness. These emotional challenges can further exacerbate the strain on the individual's mental well-being and their ability to cope with other stressors in their life.

The impact of an extramarital affair on family life can be significant as well. The participant may have had to navigate difficult conversations with their children about the situation, leading to disruptions in the family dynamic and potentially affecting the overall harmony and stability of the household.

By referencing the study conducted by Amato and Previti (2003), the participant's experience is corroborated with existing literature on the emotional and relational consequences of extramarital affairs. This research highlights that infidelity can cause emotional upheaval and strain within a marriage, reinforcing the validity of the participant's struggles.

Participant 1 also revealed that she lost her mother: "On January 12, 2020, I lost my mother." This reveals a deeply personal and significant life event—the death of their mother. Losing a loved one, particularly a parent, is an experience that can have a profound impact on individuals and their families, generating a range of emotional burdens and challenges.

The loss of a mother can trigger intense grief and sadness in an individual. It represents not only the absence of a significant figure in their life but also the end of a nurturing and emotional bond. The participant may have experienced a profound sense of loss, longing, and emptiness following their mother's passing.

Grief is a natural response to loss, and it often manifests in various ways, including emotional distress, difficulty concentrating, changes in appetite, and disrupted sleep patterns. The participant may have encountered these emotional and physical manifestations of grief, which can significantly impact their overall well-being and daily functioning.

The literature, such as the work of Amato and Previti (2003), supports the understanding that the death of a loved one, especially a parent, can lead to grief and sadness. Their research emphasizes the emotional toll that such losses can have on individuals and families, underscoring the universality of these experiences.

Moreover, the participant's account suggests that the loss of their mother added to their existing emotional burdens, potentially compounding the challenges they were already facing. Coping with multiple stressors simultaneously can be overwhelming and may require additional support and coping strategies.

Navigating the grieving process is highly individual, and each person copes with loss in their own way and at their own pace. It is crucial for the participant to seek support from friends, family, or professional resources, such as grief counselors or support groups, to help them process their emotions and find healthy ways to cope with their loss.

By referencing the research of Amato and Previti (2003), the participant's experience is validated and connected to the broader understanding of grief and its impact. This literature reinforces the notion that the loss of a loved one, like the participant's mother, can be emotionally challenging and underscores the significance of addressing the associated grief and seeking support. Participant 1's account of losing her eldest brother to COVID-19 highlights the distressing experience of having a family member diagnosed with the virus: "My eldest brother was declared the first Covid-19 case in our town." The participant shares the emotional impact and the accompanying fear and uncertainty that surrounded their brother's illness.

The COVID-19 pandemic has brought about unprecedented challenges globally, affecting individuals' physical, mental, and emotional well-being. The participant's statement aligns with the extensive research conducted on the psychological effects of the pandemic, as cited by Pfefferbaum and North (2020) and Brooks et al. (2020). These studies emphasize the significant impact of the pandemic on individuals' lives, including the distress caused by the illness itself and the resulting disruptions to daily routines, social interactions, and economic stability.

The participant's reference to their brother being declared the first COVID-19 case in their town implies that the community was likely unprepared and unfamiliar with the virus's impact at that time. This lack of knowledge and experience could have amplified the fear and uncertainty surrounding the situation. The sudden onset of the pandemic and the emergence of COVID-19 cases in local communities have created a sense of vulnerability and heightened anxiety among individuals and families worldwide.

Losing a family member to COVID-19 is a tragic event that can have profound emotional consequences. The participant and her family likely experienced grief, sorrow, and a deep sense of loss. The sudden and unexpected nature of the illness may have made it particularly challenging to process and come to terms with their brother's passing.

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In addition to the emotional toll, the COVID-19 pandemic has posed practical challenges for individuals and families, such as navigating healthcare systems, adhering to safety protocols, and coping with financial implications. The participant's account reflects the broader impact of the pandemic on various aspects of life and the interconnectedness of these challenges.

Given the gravity of the situation, it is crucial for individuals and families affected by the loss of a loved one to seek support. Grief counseling, therapy, and support groups can provide a safe space for individuals to process their emotions, find solace in shared experiences, and develop coping strategies to navigate their grief.

The participant's narrative serves as a poignant reminder of the far-reaching consequences of the COVID-19 pandemic, not only in terms of public health but also on a deeply personal level. By referencing the works of Pfefferbaum and North (2020) and Brooks et al. (2020), the participant's experience is validated and connected to the broader body of research examining the psychological impact of the pandemic. This literature further reinforces the significance of addressing the emotional and social consequences of COVID-19 and the need for comprehensive support systems.

Participant 1's account of facing discrimination from their neighbors due to their perceived connection to COVID-19 sheds light on a distressing consequence of the pandemic: "We were discriminated by our neighbors." The participant shares the experience of being stigmatized and treated unfairly based on the assumption that their family was somehow responsible for the spread of the virus.

Discrimination and stigmatization towards individuals and families affected by COVID-19 have been well-documented during the pandemic. The reference to Zhang et al. (2020) supports the participant's narrative by highlighting the presence of such discriminatory behaviors in society. The study likely examines the social and psychological impact of stigmatization related to COVID-19, reinforcing the validity of the participant's experience.

The fear and uncertainty surrounding the virus have led to a rise in prejudiced attitudes and scapegoating, with individuals and communities looking for someone to blame. This scapegoating behavior can manifest as discrimination, isolation, and even hostility towards those perceived to be associated with the virus. In the participant's case, their family was unfairly targeted and discriminated against by their neighbors, highlighting the negative consequences of these stigmatizing attitudes.

Discrimination based on COVID-19 perceived connections can manifest in various forms, including verbal abuse, social exclusion, and even physical threats. Such mistreatment can have significant psychological and emotional effects on individuals and families already grappling with the challenges and grief associated with the pandemic.

It is crucial to address and counteract this discrimination and stigmatization through education, awareness campaigns, and community engagement. By promoting accurate information about the virus and fostering empathy and understanding, societies can work towards eliminating discriminatory behaviors and creating a supportive environment for those affected by COVID-19.

Additionally, support networks and resources should be available to individuals and families who experience discrimination due to their perceived association with the virus. This may include counseling services, helplines, and community organizations that can provide emotional support and guidance on dealing with discrimination and its impact on mental health and well-being.

Participant 1's account of facing discrimination serves as a reminder that the COVID-19 pandemic not only poses physical health risks but also has significant social and psychological implications. By referencing the literature of Zhang et al. (2020), the participant's experience is validated and connected to the broader research on discrimination and stigmatization during the pandemic.

Another stressor reported by participant 1 was the arrest of her eldest son: "In 2021, my eldest son was arrested."

Participant 1's revelation about her eldest son's arrest unveils another significant stressor that has deeply affected their family. The participant expresses the distress and challenges faced as a result of their son's involvement in illegal activities and the subsequent legal repercussions.

Legal issues and the involvement of family members in illegal activities can have severe consequences, both legally and emotionally. Dowling et al. (2019) likely discuss the emotional impact of family members' engagement in criminal behavior, supporting the participant's account by emphasizing the emotional toll it takes on the family.

The arrest of a family member can lead to a wide range of emotional responses within the family, including shock, anger, guilt, shame, and sadness. It disrupts the sense of stability and security within the household, creating a tumultuous and stressful environment for everyone involved. The participant's disclosure highlights the strain and emotional burden placed on them and the family as a whole due to their son's arrest.

In addition to the emotional distress, legal issues can result in financial strain, strained relationships with authorities, and a considerable disruption of daily life. Families often face legal expenses, court proceedings, and the potential for incarceration, which can further exacerbate stress and anxiety levels.



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The participant's experience resonates with numerous families who have faced similar circumstances, highlighting the profound impact that legal issues and family members' involvement in illegal activities can have on the well-being and dynamics of a household.

It is crucial for families facing these challenges to seek support and guidance from legal professionals, counselors, and community resources. Legal counsel can provide guidance on navigating the legal process, ensuring the rights of the accused are protected, and exploring possible avenues for rehabilitation and support. Additionally, emotional support through therapy or support groups can help individuals and families cope with the emotional turmoil and develop strategies for rebuilding and healing.

The broader society also plays a role in creating an environment that supports rehabilitation and reintegration. By focusing on prevention, education, and providing opportunities for individuals involved in illegal activities to reintegrate into society, communities can contribute to breaking the cycle of criminal behavior and offer a chance for individuals and families to rebuild their lives.

Participant 1's account of their son's arrest sheds light on the emotional and practical challenges that arise from legal issues and family members' involvement in illegal activities. By referencing the research of Dowling et al. (2019), the participant's experience is validated and connected to existing literature on the emotional impact of family members' engagement in criminal behavior.

The last stressor shared by participant 1 was that her son left the seminary: "My son who was in the seminary for nine years decided to go out from the seminary."

Participant 1's account of her son leaving the seminary after nine years reveals yet another significant stressor that has affected their family. The participant shares the emotional struggles and concerns that arose from her son's unexpected decision to depart from his religious vocation.

Leaving the seminary, especially after dedicating a significant amount of time to religious studies and preparation, can be a complex and emotionally challenging experience for both the individual and their family. The participant's disclosure aligns with the research of Amato and Previti (2003), who discuss the emotional impact of life transitions and uncertainties on individuals and families.

When individuals face life transitions that deviate from their previously established path, it can lead to a range of emotions such as confusion, disappointment, and worry. The participant's unexpected change of heart likely created a sense of uncertainty about her son's future and raised concerns about his well-being and fulfillment.

Moreover, the participant's experience reflects the broader concept of individuals navigating their personal and spiritual journeys, which can involve periods of introspection and reassessment of their beliefs, values, and life goals. The decision to leave the seminary may indicate a reevaluation of one's religious calling or a desire to pursue alternative paths in life.

For the family, this transition can be accompanied by feelings of loss, as they may have held certain expectations and aspirations for their son's religious vocation. It can also involve adjustments in family dynamics and relationships, as they navigate their own understanding and acceptance of their son's decision.

Support and understanding from the family and community are crucial during such transitions. Open and honest communication, along with empathy and respect for the individual's journey, can help facilitate a supportive environment. Seeking guidance from religious leaders, counselors, and support groups can also provide valuable insights and resources for navigating the emotional challenges associated with departing from a religious vocation.

It is important to recognize that individuals have the right to explore and determine their own paths in life. While the participant may have experienced initial distress and concern, it is essential to offer support and understanding to their son as he embarks on a new phase of his journey.

Participant 1's account of her son leaving the seminary highlights the emotional struggles and concerns that arise when individuals experience a change of heart regarding their religious vocation. By referencing the research of Amato and Previti (2003), the participant's experience is linked to existing literature on the emotional impact of life transitions and uncertainties.

Participant 2 emphasizes their recurring responsibility as the primary caregiver in settling medical bills for family members, stating, "Whenever a family member gets sick, I am always the one responsible in settling the bills". This role places a significant financial burden on the participant, as they bear the costs associated with healthcare and treatment for their loved ones. The financial strain of caregiving can lead to increased stress and anxiety. As Pinqart and Sörensen (2003) highlight, caregiving-related expenses can have a detrimental impact on the caregiver's financial well-being and overall quality of life.

Furthermore, Participant 2 shares the additional stressors caused by their sister's need for dialysis treatments, stating, "We learned that my sister needed to undergo dialysis." This introduces further challenges and complexities to their lives. Chronic illnesses often require ongoing medical interventions, such as dialysis, which can be physically demanding and financially

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burdensome for families. Amato and Previti (2003) emphasize that managing the care and expenses associated with chronic illnesses can place significant strain on families, affecting their emotional well-being and financial stability.

Participant 2 also reveals that their stress extends beyond their family, stating, "My stress is not only from my family but to people whom I trust." This highlights the emotional burden caused by trust-related issues with others. Betrayal and broken trust can have far-reaching consequences on individuals' emotional well-being and their ability to form and maintain meaningful connections, as noted by Van Lange et al. (2012). Trust is a fundamental element in interpersonal relationships, and when violated, it can result in feelings of hurt, anger, and disappointment, which can significantly impact the quality of relationships.

The quotations and discussions provided by the participants shed light on their personal experiences and struggles. These experiences resonate with the challenges faced by many individuals and families in similar circumstances, highlighting the universal nature of these stressors. By referencing relevant literature, such as the study by Van Lange et al. (2012), the discussions are further supported, reinforcing the understanding that trust-related issues can have significant emotional implications and impact individuals' overall well-being.

These insights emphasize the importance of addressing trust-related issues and seeking support to navigate the emotional distress caused by such challenges. They also underscore the need for fostering trust and open communication in relationships to build resilience and maintain healthy connections, both within families and in broader social contexts.

Participant 1 expresses their frustration and stress in dealing with carvers, stating, "They are too spoiled whenever they ask for advanced payments but they cannot meet our deadlines." This highlights the challenges they face with carvers who demand favors but fail to deliver work on time. Additionally, they mention their plan to convert their shop into a 24/7 mini mart, acknowledging the need for a significant capital investment.

Participant 2 shares a similar sentiment about dealing with carvers, saying, "Dealing with carvers is so stressful nowadays. You would give them all the favor they ask yet in return they will leave the work undone, thus, I am getting beyond the deadline." They express frustration with carvers who do not meet deadlines and fail to complete the work as agreed. Participant 2 also mentions their desire to shift to the gasoline station business if they had the resources.

These quotations reflect the participants' experiences and frustrations with carvers and their consideration of alternative business options. The challenges they face align with the common difficulties of managing personnel in small businesses, as highlighted in the study by David M. Stewart and Michael Rothkopf (2005). This emphasizes the need for effective management strategies and accountability in small business settings.

Furthermore, the participants' inclination to explore alternative business ventures aligns with entrepreneurial behavior in response to challenges, as discussed in the study by Hans Crijns and Robin Kleer (2009). It suggests that considering other business options is a natural response when faced with significant difficulties or when current ventures are not meeting expectations.

Switching to the impact of the COVID-19 pandemic, Participant 1 expresses their faith and perseverance, stating, "But I kept the faith. I believe that the Lord is gracious." Despite the uncertainties and financial strain caused by the pandemic, they choose to maintain their religious carving business and adopt a wait-and-see attitude.

Participant 2, on the other hand, demonstrates adaptability and entrepreneurial spirit in response to the pandemic. They identify the market demand for snacks and successfully start a business selling various snack items. They also show innovation by introducing new products, such as twisted potato sticks and repurposing waste parts into mojos.

These experiences align with the literature on entrepreneurship, highlighting the ability to recognize market opportunities, adapt to changing circumstances, and innovate to meet customer needs (Ruta Aidis et al., 2012). The participants' experiences underscore the importance of resilience, flexibility, and creativity in navigating challenges and seeking business success.

In summary, the participants' quotations shed light on their experiences and frustrations with carvers, their consideration of alternative business options, and their responses to the impact of the COVID-19 pandemic. These experiences align with the challenges of managing personnel in small businesses and the entrepreneurial behavior observed in response to difficulties and market changes. By referencing relevant literature, such as the studies by Stewart and Rothkopf (2005) and Crijns and Kleer (2009), the discussions are supported, emphasizing the universal nature of these challenges and the need for effective management and entrepreneurial mindset in business endeavors.

## **VI. SUMMARY AND CONCLUSION**

This qualitative research aimed to gain a comprehensive understanding of the journey of individuals who establish their own religious carving business. Through in-depth interviews with participants, the research explored the influential factors that motivate individuals to start such businesses, the challenges they face in balancing familial and entrepreneurial roles, the

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marketing strategies they employ for financial stability, and the coping strategies they utilize to overcome challenges in both family and business contexts.

The findings of this research shed light on the multifaceted experiences of individuals in the religious carving business. Several key themes emerged from the participants' narratives, providing valuable insights into their motivations, role balancing, marketing strategies, and coping mechanisms.

Firstly, the influential factors that motivated individuals to establish their own religious carving business were diverse and deeply personal. Some participants were driven by their artistic passion, seeing religious carving as a way to express their creativity and connect with their spiritual beliefs. Others were motivated by economic factors, recognizing the potential for financial stability and independence through the business. Family legacy and cultural significance were also influential factors, with participants valuing the preservation of traditional craftsmanship and passing it on to future generations.

Secondly, participants faced the challenge of balancing their familial responsibilities with their entrepreneurial endeavors. They shared the struggles of managing family expectations, time constraints, and the need to provide for their loved ones while nurturing their business. The participants demonstrated various strategies to navigate these challenges, such as involving family members in the business, establishing clear boundaries, and seeking support from their social networks. They emphasized the importance of open communication, understanding, and flexibility in maintaining harmony between their family and business roles.

Thirdly, participants highlighted the significance of effective marketing strategies for achieving financial stability. They utilized various approaches, including targeting specific customer segments, leveraging social media platforms, participating in religious events and exhibitions, and maintaining strong relationships with customers and suppliers. The participants recognized the importance of adapting to market demands and continuously innovating their products to stay competitive in the industry.

Lastly, participants shared their coping strategies for overcoming challenges in both family and business contexts. These strategies included maintaining a positive mindset, seeking support from their faith and social networks, developing resilience, and being adaptable in the face of adversity. Participants also emphasized the importance of self-care and work-life balance to sustain their well-being amidst the demands of their entrepreneurial journey.

In a nutshell, this research provides a comprehensive understanding of the journey of individuals who establish their own religious carving business. The findings highlight the diverse motivations, challenges, strategies, and coping mechanisms of these entrepreneurs. The research contributes to the existing literature on entrepreneurship, family-business dynamics, marketing strategies, and coping strategies in small business contexts. It offers valuable insights for aspiring entrepreneurs, policymakers, and support organizations seeking to foster the growth and success of individuals in the religious carving industry. By understanding the complex interplay between familial and entrepreneurial roles, addressing the challenges faced, and implementing effective marketing and coping strategies, individuals in this industry can strive for both personal and business fulfillment.

## **VI. RECOMMENDATIONS**

Based on the research objectives, this study provides several recommendations for further theoretical development, methodological approaches, and practical interventions in the context of individuals establishing their own religious carving business.

To deepen the understanding of the motivations behind starting a religious carving business, future research could explore additional influential factors. This could include delving into psychological, cultural, and social aspects that contribute to the decision-making process. By expanding the theoretical framework, researchers can gain a more comprehensive understanding of the complex interplay of factors that drive entrepreneurship in this industry.

Longitudinal studies would also be valuable in capturing the evolving experiences and challenges faced by individuals in the religious carving business. Tracking their journey over an extended period of time would provide insights into the long-term impacts, adaptive strategies, and changes in the industry. This would enhance our understanding of the dynamics of entrepreneurship within this specific context.

Also, employing a mixed-methods approach can offer a more holistic understanding of the religious carving industry. Integrating qualitative and quantitative methods would allow for a deeper analysis of both subjective experiences and objective indicators. Quantitative data such as financial performance metrics and market trends can complement the qualitative insights, providing a more comprehensive picture of the industry.

Furthermore, expanding the research scope to include participants from diverse regions, cultures, and religious backgrounds would offer a broader perspective on the religious carving business. This inclusion would help capture the nuances and

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variations in motivations, challenges, and coping strategies among entrepreneurs in different contexts. It would also provide a more inclusive and representative view of the industry.

To support individuals in the religious carving business, practical interventions can be implemented. First, tailored entrepreneurship support programs should be developed to meet the specific needs of individuals in this industry. These programs could offer training, mentoring, and resources in areas such as marketing, business development, financial management, and innovation. By providing targeted support, these programs would foster the growth and sustainability of religious carving businesses.

Encouraging collaboration and networking among individuals in the religious carving industry is another practical recommendation. Establishing platforms, workshops, and events that facilitate knowledge-sharing, skills development, and business opportunities would stimulate innovation and create synergies among entrepreneurs. This sense of community and collaboration can lead to increased market access, improved competitiveness, and overall industry growth.

Furthermore, recognizing the cultural and artistic value of religious carving businesses is crucial. Initiatives to preserve and promote this cultural heritage should be implemented, such as exhibitions, cultural festivals, and heritage preservation programs. Supporting entrepreneurs in accessing markets and promoting their products would enhance the visibility and appreciation of religious carvings, contributing to their economic viability and cultural significance.

Lastly, it is important to prioritize the mental health and well-being of entrepreneurs in the religious carving business. Providing resources and support for managing stress, maintaining work-life balance, and building resilience is essential. This can include stress management techniques, mindfulness practices, and access to counseling or support networks. Prioritizing the holistic well-being of individuals will contribute to their long-term success and overall quality of life.

By implementing these theoretical, methodological, and practical recommendations, policymakers, support organizations, and the religious carving community can foster an environment that supports the growth and sustainability of religious carving businesses. These recommendations aim to preserve cultural traditions, promote economic development, and empower individuals pursuing entrepreneurship in this field.

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## Consciousness Price, Store Image, and Variations in Quality Repurchase of Private Label Analysis



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**ABSTRACT:** The purpose of this study was to prove the effect of Store Image, Price Consciousness, and Quality Variations Repurchase on Private Label, samples were taken using convenience sampling of 179 respondents and data collection using a questionnaire which was conducted at the Superindo Superindo Cinere West Java Indonesia where all the obtained instruments were valid, with multiple regression results that there is a significant variation between price and quality awareness on the intention to repurchase private label products but for store image it has no effect on the desire to buy products from private labels, because it turns out that people buy private label products not because of the image of the store but because of variations quality and price because usually private label products issued by the supermarket concerned are cheaper than similar branded products.

**KEYWORDS:** StoreImage, ConsciousnessPrice, Repurchase, VariationQuality, PrivateLabel

### I. INTRODUCTION

Modern business and retail are expanding really quickly right now. Supermarkets, hypermarkets, and minimarts are rapidly proliferating, particularly in major cities. This is corroborated by the quick increase in the number of merchants, which in Indonesia reached 3.61 million in 2021. It is predicted that as Indonesia's economy grows in the next years, more and more foreign merchants will set up shop there, and established firms will become more aggressive in pursuing every market opportunity. As a consequence, there will be more intense competition, which will make all participants work harder to implement different methods to outperform one another.

These shops work hard to come up with the best plan of attack to beat the competition as it becomes more and more fierce. One of these is through releasing store labels, often known as private label items. According to Benny B. Tjandrasa's (2006) assessment, the retail industry's growth is still increasing year after year. The retail industry in Asia was still able to turn a profit despite the country's economic difficulties. National merchants must prepare for the fierce competition by consistently innovating since Indonesia, which has a sizable population, is the marketing focus of global retailers like Carrefour and Wal-Mart. Introducing private label items is one example of innovation that has been imported from elsewhere.

These shops work hard to develop the best plan to beat the competition as it becomes more and more ferociously competitive. One of these is by releasing items under private labels, sometimes known as shop labels. According to Benny B. Tjandrasa (2006), the retail industry's growth is continuing to exhibit signs of expansion. The retail industry in this region was still able to turn a profit even throughout the Asian economic crisis. Indonesia, which has a sizable population, is a target market for international retailers like Carrefour and Wal-Mart, therefore domestic businesses must prepare for the fierce competition by consistently innovating. Launching private label items is one way innovation is being imported from overseas.

Many contemporary shops, including hypermarkets and minimarkets, are vying to introduce goods under their own names (private label). For instance, out of a total of 40,000 product categories, Carrefour Indonesia presently has 2,000 to 3,000 private label product products. In reality, minimarkets like Indomaret alone have 500 or more products under their own store labels, followed by Alfamart, which is thought to have 100 items under its own private label. The existence of private brands seems inevitable given the intense rivalry that retailers face, especially when it comes to offering competitive rates. And one way to achieve that is by providing self-labeled goods. Private label items are widely available. Customers gain from it since they may get things at a low cost of -labeled products

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Private label items are widely available. Consumers profit from this since they may purchase things for up to 30% less than national brand products. Private label goods save marketing expenses and eliminate unnecessary distribution routes, enabling this. (Accessed on March 24, 2018) <http://swa.co>.

Private label, in the opinion of Arimbi Kusuma Utami (2012), has an impact on brand equity, and according to Kristof De Wulf, Gaby Odekerken-Schröder, Frank Goedertier, and Gino Van Ossel (2005), private label products can be offered alongside national branded products with better quality but at a lower price, as consumers choose private label products because of lower prices. In comparison to branded goods, additionally, private label products have their own existence when compared to national branded products, according to Thomas Kilian, Gianfranco Walsh, and Holger Buxel (2010), and Maciej Szymanowski and Els Gijsbrechts (2012) expressed their opinion that private label consumers learn from experience about their awareness of the quality of private label products, in line with that according to Kyoung-Nan Kwon, Mi-Hee Lee, and Yoo Jin Kwon (2008) that private label buyers depend on the characteristics of these products.

Meanwhile, according to Inge Geyskens, Katrijn Gielens, and Els Gijsbrechts (2010), premium private label products in the cornflakes and canned soup categories in the UK using a brand selection model that accommodates similarities with national brands, it turns out that national brands are still a compromise or choice for various retailers, as well as in South Africa, where private label products are still not taken into account compared to national product

Private brands provide the benefit of enhancing the store's reputation. Utami, (2008). Therefore, a private label retail company's growth and performance are greatly influenced by the store's image. According to Archana Vahie and Audhesh Paswan (2006), the environment of stores and store cleanliness have an impact on how well-liked private label goods are. Additionally, perceptions and attitudes about shop image are impacted by elements of the store's brand image, claim Haifa Rzem and Mohsen Debabi in 2012. According to study done in 2011 by Manyu Huang and Kevin E. Voges, Chinese consumers' decisions to purchase private brands are impacted by price sensitivity, variations in perceived quality, advertising sensitivity, and shop image. Additionally, Rajeev Batra claims impacted by sensitivity to pricing, disparities in how people perceive quality, susceptibility to advertising, and shop views. Additionally, Price Consciousness, Consequence of Purchase Error, Quality Variation, and the "Search versus Experience" nature of Product Feature (customer characteristics while making a purchase) are according to Rajeev Batra and Indrajit Sinha (2000), influence the sales of Private Label Brands items jointly and partially. In her study, Margaretha Ardhanari (2008) discovered that brand preference and customer satisfaction had an impact on the willingness to repurchase goods from Matahari Department Store. According to Susianti and Sutrisna (2018)'s research, shop image has a favorable and significant impact on buy intention, which implies that as the store's reputation rises, so will customer spending. Additionally, earlier studies (Mulatsih and Kusumawardhani, 2020) demonstrated that shop image perception has a favorable impact on the intention of private label brands.

Customer value, according to Konuk (2018), Le-Anh and Nguyen-To (2020), has a considerable impact on purchasing intentions. According to Watanabe et al. (2020) and Curvelodkk. (2019), a crucial component of product buyer value is customer value, which includes functional value, emotional value, economic value, and social value. The opinions of Konuk [6], Le-Anh, and Nguyen-To (2020) are supported by this opinion from Watanabe et al. (2020) and Curvel et al. (2019). Retnawat et al. (2018) define private label product purchase intention as the 'encouragement' of customers to sample, purchase, or consume private label items offered at the retail outlets they visit.

According to Byoungjo Jin and Yong Gu Suh (2005), price awareness for the category of home appliances products has no association with the desire to purchase those products, whereas perceptions of quality variations for the food category have no relationship with this desire to buy these items. While there is no correlation between price awareness and the willingness to purchase home appliance products, this conclusion differs for different product categories. According to research done by Bao (2010), quality factors have a negative correlation with the desire to purchase private label goods, however shop image has a favorable correlation.

Given that many supermarkets to minimarkets in Jakarta currently employ private label items (as previously reported), researchers are interested in re-examining private labels in relation to store image, pricing awareness, and quality differences. Additionally, the majority of the prior studies were carried out in other nations with respondents who were clearly different from the demographics in Jakarta, so this research will address the author's desire to determine whether the findings will be the same as or different from those of previous studies, leading to the formulation of the following problems: Do shop reputation, price sensitivity, and quality differences influence customers' decisions to repurchase private label products?



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## 1. Theory and Hypothesis Development

Today consumers can purchase the same item from a number of different retailers. Each retail format targets a different and increasing market share. Each type of retail offers different benefits, so consumers can subscribe to different retailers for different purchases and needs.

According to Ma'ruf (2006: 52), there are two shopping behaviors in Indonesian society. The first is shopping behavior with an orientation of "shopping is shopping". That is, the purpose of shopping is to find the items needed or wanted so that the functional aspects of the shopping center take precedence over the atmosphere of the shopping place. On the other hand, the other consumer shopping behavior is "recreation" oriented. Consumers with this pattern will look for shopping centers that are fun. While most consumers in Indonesia

Have shopping behavior like this second pattern.

### 1). Private Label

Private label is often called store brand, private label, own label, or housebrand. Private label products are products that have the brand name of the place where the product is sold (Kotler and Armstrong, 2010), store brand or private label is merchandise that uses the brand name of the distributor or retailer or a brand name created exclusively for the distributor or retailer.

### 2). Repurchase

According to Tsiotsou (2006), repurchase is a behavior in which consumers repurchase products that were previously purchased. A retailer is said to be successful if it is able to retain its customers to be loyal to the retailer.

Ndubisi and Moi (2005) in Indrianawati Usman & Rizky Adhitya Arnando say that repurchase varies depending on the level of durability of a product. For products that are not durable (non-durables), repurchase is defined as the act of buying again after the first purchase or trial. Hellier et al., (2003) state that repurchase intention is a person's planned decision to repurchase a particular service, taking into account the situation that occurs and the level of preference.

### 3). Store Image

In the context of the retail business, a brand can be interpreted as the retail brand itself or the brand of products or merchandise sold or offered by the retailer (Utami 2008). In accordance with the object of this research, the brand image referred to in this study is the image of the store (hypermarket). In Utami (2008) it is also stated that brands also affect customer confidence in decisions made to purchase merchandise from a retailer. Schiffman and Kanuk (2007) also state that retail stores have their own store image that helps influence perceived quality and consumer decisions about where to shop. In Ma'aruf (2006), several elements that support the image of a store or outlet are explained, namely: Merchandise: price, quality, category diversity, item availability (color, size, type), b. Location that is easily accessible, safe and located in a shopping center or close to other retail outlets. c. Prioritizing services to certain segments in accordance with the demographic characteristics of potential buyers. d. Service.

K. Theodoridis and Kalliopi C. Chatzipanagiotou (2009) store image attributes are all aspects that exist in stores that influence consumers in making purchasing decisions while shopping. And according to Haifa Rzem, and Mohsen Debabi (2012) perceptions and attitudes towards store image are influenced by the components of the store image, and according to Manyu Huang and Kevin E. Voges (2011) show that Chinese consumers to buy private brands are influenced by price sensitivity, differences in quality perceptions, advertising sensitivity, and store images. In line with that, Bao (2010) found that store image has a positive influence on the desire to buy private label products. In line with that according to Wu, Paul C S; Yeh, Gary Yeong-Yuh; Hsiao and Chieh-Ru (2011), Cudmore and Andrew (2000) Champion, Jennifer Clifton; Hunt, James B; Hunt and Tammy G (May 2010), that characterization has a direct effect on the repurchase of private label brands, and characterization is important in increasing the willingness to buy.

### 4). Price consciousness (Brand awareness)

Price consciousness is defined as the focus or sensitivity of consumers to product prices more than to their quality (Lichtenstein, et al 1993). Consumers who are said to be price consciousness are consumers who tend to buy at relatively cheaper prices. Generally, these customers do not pay attention to the advantages of the product, but only look for prices that have a high difference (Monroe, 1990) quoted from Isman Pepadri (2002).

Price consciousness is also widely used by researchers to show the consumer's assessment of the product, seen from the price of the product. An analysis shows that a decrease in disposable income can cause the market share of private label products to increase, although this does not change people's perception of the quality of the product. This means that a decrease in people's disposable income may cause them to have a higher level of price-consciousness about the price of a product. Manyu Huang and Kevin E. Voges (2011) showed that Chinese consumers to purchase private label brands are more likely to buy private label products than private label products. Personal preferences are influenced by price sensitivity, differences in quality perceptions,

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advertising sensitivity, and store image. Research conducted by Bao (2010) found that store image has a positive influence on the desire to buy private label products, while quality variables have a negative relationship with the desire to buy private label products. Meanwhile, according to Rajeev Batra, Indrajit Sinha (2000), Price Consciousness, Consequence of Purchase Mistake, Quality Variation, and the "Search versus Experience" nature of Product Feature (consumer characteristics when making purchases) affect both partially and jointly the success of Private Label Brands products. According to Champion, Jennifer Clifton; Hunt, James B; Hunt and Tammy G May (2010) good quality perceptions will influence consumers to make repeat purchases of private label products.

H1: Store Image has a significant effect on Repurchase of Private Label Products.

H2: Price Consciousness has a significant effect on Repurchase of Private Label products.

H3: Quality Variations have a significant effect on Repurchase of Private Label products.

## II. MATERIAL AND METHODS

**Table 1. Definition of Variable Operationalization**

Variable	Dimension	Indicator
Store Image	<ol style="list-style-type: none"> <li>1. Employee service</li> <li>2. Product quality (quality of products sold)</li> <li>3. Product selection</li> <li>4. Atmosphere</li> <li>5. Convenience</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide overall good service</li> <li>2. Provide high quality goods.</li> <li>3. Large selection of products</li> <li>4. Pleasant store atmosphere</li> <li>5. Comfortable room</li> </ol>
Price Awareness	Price awareness that consumers have of the product to be purchased	<ol style="list-style-type: none"> <li>1. Price comparison of several products before choosing, one of which is purchased</li> <li>2. Checking the price before making a purchase, even for inexpensive products.</li> <li>3. It is important to get the best price for the product to be purchased.</li> </ol>
Quality Variation		<ol style="list-style-type: none"> <li>1. All private label product brands are the same in terms of quality.</li> <li>2. There is no difference between different brands of private label products in terms of quality.</li> <li>3. Private label product brands do not matter (behind all products are coded).</li> </ol>
Repurchase		<ol style="list-style-type: none"> <li>1. The tendency to buy private label products again.</li> <li>2. Desire to buy private label products again.</li> <li>3. Buying private label products again. (6 months ahead with the same amount)</li> </ol>

### Sample Determination Technique

The sample was taken as many as 200 people (Uma Sekaran, 2009), by Convenience Sampling, who shopped at Superindo Cinere Supermarket.

### Data Collection

For all variables, data is taken using a questionnaire with a 5-point Likert scale, this is done considering that the questionnaire can be done when the respondent finishes shopping. previously conducted a brief interview on knowledge of private label products.

### Data Analysis

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Data is analyzed using Multiple Regression, as well as the use of classical assumptions by first passing the instrument through validity and reliability tests.

### III. RESULT AND DISCUSSION

#### RESULT

##### Description of Respondents

The data was collected using a questionnaire which previously made observations meaning that the respondents who bought private label products were given questionnaires and conducted interviews about private label products, distributed to 200 respondents but only 179 samples were eligible.

**Table 2. The respondent's data:**

Gender	Amount	Education	Amount	Income/ Mont (000)	Amount	Employment	Amount	Knowledge of Privat Label	Amount
Woman	131	Junior High School	7	3000- 5000	28	Other Profesi	14	Yes	161
Man	48	Senior High School	66	>5000	151	Trader	41	No	18
		College	106			Civil Servant	124		-
Total	179	Total	179	Total	179	Total	179	Total	179

From the data of respondents, most of whom are women (73%), it can be seen that 90% of them know about private label products so that they are sure of what they buy, besides that most of the respondents were college educated (59%) with an income level above Rp. 5000,000, - (84%) and almost all filled in as employees (69%).

The instrument test results for all variables fulfill the requirements with the validity test of all questionnaire items no drop, reliability above 0.7, as well as the classical assumption test all fulfill the requirements. The following are the regression results for store image variables, price consciousness and product quality variations on Repurchase Private Label:

**Table 3. Regression Result**

Variabel	$\beta$	Sig
Store Image	0,085	0,194
Price awareness	0,474	0,000
Quality variations	0,543	0,000

Adjst. R Square = 0.597

R = 0,780

F = 56,734 (Sig)

It can be seen that R is 0.780, meaning that the relationship or influence between store image, price awareness and quality variations on the desire to repurchase is 78%, while the rest of the respondents who repurchase private label products are influenced by other factors outside of this study.

This means that there is a significant influence between price awareness and quality variation on repurchasing private label products on private label products in Superindo Cinere, but store image has no effect on repurchasing private label products.

#### DISCUSSION

The results of this study, which discuss the effect of store image, price awareness and quality variations on the repurchase of private label products, are in line with research conducted by Manyu Huang and Kevin E. Voges (2011) which shows that Chinese consumers to buy private brands are influenced by price sensitivity, besides that these findings also have similarities with research from Rajeev Batra, Indrajit Sinha (2000), Price Consciousness (price awareness), affects the success of Private Label Brands

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products. However, contrary to the findings of Byoung-ho Jin and Yong Gu Suh (2005), it is said that the perception of quality variations for the food category has no relationship with the desire to repurchase these goods, while price awareness, namely for the category of household appliances products, has no relationship with the desire to repurchase these goods, meaning that these findings are different for product categories. Also, these findings on store image also contradict the research of Archana Vahie and Audhesh Paswan (2006), Utami, Christina Widya, 2008, and according to Haifa Rzem, and Mohsen Debabi (2012), Wu, Paul C S; Yeh, Gary Yeong-Yuh; Hsiao and Chieh-Ru (2011), Cudmore and Andrew (2000) Champion, Jennifer Clifton; Hunt, James B; Hunt and Tammy G (May 2010), also Susianti and Sutrisna (2018) in their research state that store Image has a positive and significant effect on purchase intention, meaning that the higher the store image, the more consumer purchases will increase. Also previous researchers conducted (Mulatsih and Kusumawardhani, 2020) showed that store Image Perception has a positive effect on Private Label Brands Intention while for the findings of this study store image has no effect on private label products, this is according to the respondents interviewed because they buy private label products because of the lower price but the same quality as branded products.

In this study, it is still not distinguishing product categories from private label products so that these contrasting results still have to be developed again in further research. But what is clear from previous studies is that it is the price that influences the desire to repurchase these private label products because these private label products have a lower price than branded products but have a quality not inferior to these brands. Because private label products do not need to do promotions to sell them, because there is already a supermarket brand, so production costs are low and the selling price can be lower than branded products that must be promoted at a large cost.

## IV. CONCLUSION

The research data shows that there is a significant influence between price awareness and quality variation on the repurchase of private label products, this is in accordance with the hypothesis made that there is a significant influence between price awareness and quality variation on the repurchase of private label products, but for store image it is found that there is no influence between store image on private label repurchase, this is contrary to the hypothesis made that there is a significant influence between store image on the repurchase of private label products. The results of this study are what was expected considering that the answers from the respondents support the fact that they buy private label products because of price.

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## The Effect of Sports Massage and Active Recovery on Fatigue Parameters among Karate Athletes



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**ABSTRACT:** This study aimed to investigate the effects of sports massage and active recovery on fatigue parameters (HR, RPE, and TQR) in 32 Karate athletes. Using a two-group pre and post-test design, participants were allocated to sports massage (n=16) and active recovery groups based on sex and resting heart rates. Both groups engaged in 90 minutes of submaximal karate training, followed by pre-test measurements, a 15-minute recovery period, and post-test assessments. Paired t-tests analyzed within-group HR and RPE differences, while independent tests compared HR, RPE, and TQR between groups. Results showed significant reductions in HR ( $p < 0.001$ ) and RPE ( $p < 0.001$ ) for both interventions. No significant differences were observed in post-test HR ( $p = 0.427$ ) and TQR ( $p = 0.524$ ) between groups. However, the sports massage group had significantly lower post-test RPE ( $4.7 \pm 1.2$ ) compared to the active recovery group ( $3.6 \pm 1.2$ ,  $p = 0.013$ ). In conclusion, both interventions improved HR and RPE, with sports massage demonstrating superior effects on reducing RPE. Future research should explore long-term effects, optimal timing, and personalized approaches for athletes.

**KEYWORDS:** sport massage, active recovery, fatigue parameter, karate

### I. INTRODUCTION

Karate, a hand-to-hand combat sport originating from Japan, has gained popularity in Indonesia since the early 1970s. Karate matches consist of two types of competitions: Kumite and Kata (Indrajaya & Ismalasari, 2017). Kata is a series of basic karate punching and kicking techniques that are combined into one fluid sequence, emphasizing both beauty and strength (Indrajaya & Ismalasari, 2017). On the other hand, Kumite involves applying the fundamental techniques of punches, kicks, and throws in a fight or match (Indrajaya & Ismalasari, 2017). Both Kata and Kumite competitions follow a reperchance system, which utilizes multiple rounds of matches to determine the finalists. Each round eliminates 50% of the competing athletes, leading up to the final round. However, if an athlete reaches the final round, the previously defeated athlete receives a second chance to advance to the next round together (Kolopita et al., 2019). The Kumite and Kata matches, from the preliminary round to the final, are conducted within a single day. Consequently, athletes only have a short break between matches, making it challenging for them to fully recover and restore their physical condition. Despite the need for good physical condition and aerobic capacity with a fast recovery process between matches, the limited break time hinders athletes from reaching their optimal performance (Chaabene et al., 2012). Moreover, fatigue can lead to injuries, especially in Kumite, which heavily relies on agility and speed in competition. If fatigue is not properly managed, athletes will struggle to move quickly and utilize their agility to attack their opponents. Athletes' performance in a match can be influenced by various factors, including physical condition and fatigue. When athletes undergo training and compete, their energy systems can be depleted, leading to fatigue (Fahmi & Ashadi, 2019; Septiani et al., 2010). Fatigue is a physiological phenomenon characterized by a decrease in the body's ability to sustain physical performance. In particular, intense physical activities like karate can cause local muscle fatigue due to the build-up of lactic acid in the muscles and bloodstream. This fatigue is associated with the energy synthesis (ATP) in fast-twitch (FT) muscle fibers, which play a significant role in muscle contraction (Fahmi & Ashadi, 2019; Septiani et al., 2010). If fatigue is not properly addressed, it can significantly impact an athlete's performance in subsequent matches. Therefore, it becomes crucial to implement effective treatments to restore the athlete's condition during the short rest periods, with one approach being the optimization of the recovery process. Active recovery refers to a rest period where athletes remain in motion rather than being stationary, allowing them to continue engaging in sporting activities. One effective method of active recovery is stretching, which targets multiple muscle groups. Stretching improves blood circulation, reduces tension and pain, increases joint range of motion, and restores muscle functionality during the cool-down stage (Rey et al., 2012). A recommended stretching technique during the cool-down stage is Proprioceptive

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Neuromuscular Facilitation (PNF) stretching. PNF stretching offers numerous advantages over other stretching methods as it enhances strength, control, stability, muscle endurance, joint mobility, and overall coordination, thereby enhancing an athlete's performance (Victoria et al., 2013). Compared to passive recovery, active recovery is highly recommended in the inter-match recovery process (Chatterjee et al., 2014). Another recovery technique involves the use of massage. Massage therapy aids in the recovery process by assisting athletes in relaxation and alleviating muscle soreness, ultimately promoting faster recovery (Chatterjee et al., 2014). Therefore, incorporating active recovery strategies such as stretching, particularly PNF stretching, and utilizing massage techniques may significantly contribute to the athlete's recovery process, enabling them to perform optimally in subsequent matches.

According to Wiewelhove et al. (2018), massage has been found to be an effective form of recovery for runners. However, its application in the field of karate has not been extensively explored (Kurniawan & Kurniawan, 2021). Kurniawan and Kurniawan (2021) explain that different massage techniques, performed with specific rhythms and pressures, can yield distinct effects. For instance, a gentle and relaxed rhythm with normal pressure can stimulate the nervous system, inducing a calming effect. On the other hand, stimulating manipulations activate body organs, while soothing manipulations address excessive imbalances in the nervous system, pain, and anxiety. The strength of the massage also plays a role in determining its effects. For example, gentle tapping provides a calming and invigorating effect, whereas strong pressure stimulates nerves and muscle fibers, enhancing their ability to respond, and increasing movement sensitivity, and reactivity. Kurniawan and Kurniawan (2021) further emphasize that sports massage involves a series of techniques specifically tailored to the needs of athletes. Therefore, it can be utilized effectively to support the recovery process of athletes. However, although massage has been proven effective for runners, its potential benefits for karate practitioners have not been extensively explored. However, research suggests that massage techniques, when applied with the appropriate rhythm, pressure, and strength, can have distinct effects on the nervous system and muscle response. Moreover, sports massage, designed specifically for athletes, can be a valuable tool for enhancing recovery in karate athletes. Therefore, this study aimed to study the effect of sports massage and active recovery on fatigue parameters among Karate athletes.

## II. METHOD

This study utilized a two group pre-test and post-test study, using the following research design

Group (A)	R	O <sub>1</sub>	X <sub>1</sub>	O <sub>2</sub>
Group (B)	R	O <sub>1</sub>	X <sub>2</sub>	O <sub>2</sub>

Figure 1. Two Groups Pre-test and Post-test Design

Description:

R : The Submaximal Exercise

O<sub>1</sub> : Measurement of fatigue parameters before the recovery method

X<sub>1</sub> : Sport massage recovery method

X<sub>2</sub> : Active recovery method

O<sub>2</sub> : Measurement of fatigue parameters after the recovery method is given

The research was conducted at the Martial Arts Building of the Faculty of Sport and Health Sciences, Yogyakarta State University at University Karate Club. The subject was 32 karate athletes. The sample size calculation was based on the assumption of two tails, the estimated effect size of both groups 1.05; power 0.8 and level of significance 0.05.

This study uses an ordinal pairing sampling technique divided by gender and group. Ordinal pairing is dividing the group into two so that both have the same ability or strength. Ordinal pairing division is carried out before the pre-test and post-test or resting pulse rate rating which is an indicator of athlete fatigue. The sample was divided into two groups with equal distribution of men and women into group (A) sports massage and group (B) active recovery, each consisting of 16 athletes, with a total of 32 athletes. The instruments used in this study were pre-test and post-test measurements on several pulse-per-minute measurements using a pulse meter and Borgs RPE (Rating of Perceived Exertion) to determine individual subjective responses to perceived activity levels. Furthermore, the quality of recovery was measured using TQR (Total Quality Recovery). The following is the procedure for implementing data collection in this study

1. Assessment of resting heart rate before the study as the bases of the ordinal pairing with sex to create two equal groups based on these characteristics
2. Conducting sub-maximal training with karate technique training and sparring so that it resembles a match developed based on the KSAT training (Karate Specific Aerobic Test).



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3. Measuring the pre-test pulse frequency (HR) and rating of perceived exertion (RPE) after training (prior to the recovery).
4. Providing recovery with techniques (Sports massage and PNF active recovery).
5. Conducting the last test, the Post-test (HR, RPE, and TQR) after treatment.

The pre-test and post-test HR and RPE in each group were assessed using paired t-tests. The independent tests were used to assess the pre-test and post-test HR and RPE as well as TQR between groups.

### III. RESEARCH RESULTS AND DISCUSSION

The average age of the subjects was 18 years, with a height of 162 cm and a body weight of 56 kg. Details of the overall characteristics of age, height, and weight can be seen in Table 1 below.

**Table 1. Mean and Standard Deviation of Age, Height and Weight of Study Subjects**

Characteristics	Sports massage			Active Recovery		
	Male (n=8)	Female (n=8)	Total (n=16)	Male (n=8)	Female (n=8)	Total (n=16)
Age	19.25±3.28	18.50±2.50	18.87±2.84	19.00±2.00	18.75±2.37	18.87±2.12
Height	165.25±3.77	160.00±2.92	162.62±4.24	162.00±6.03	155.50±6.94	159±6.57
Weight	58.87±9.31	53.12±5.48	56.00±7.95	55.87±6.03	50.75±3.49	53.31±5.44

**Table 2. Summary Statistics of Fatigue Parameters of Sport Massage and Active Recovery Groups**

Type Recovery	Test	Mean	Std. Deviation	Minimum	Maximum
Sport Massage	Pretest HR	153.94	11.246	131	170
	Posttest HR	80.00	8.626	68	108
	Pre-Post HR	73.9375	10.33098	51.00	86.00
	Pretest RPE	14.81	.834	13	16
	Posttest RPE	10.13	.619	9	11
	Pre-Post RPE	4.6875	1.19548	3.00	7.00
	TQR	14.94	1.063	13	17
Active Recovery	Pretest HR	154.75	8.315	140	167
	Posttest HR	82.13	9.674	70	111
	Pre-Post HR	72.6250	9.20779	56.00	94.00
	Pretest RPE	14.56	.629	14	16
	Posttest RPE	11.00	1.033	9	12
	Pre-Post RPE	3.5625	1.20934	2.00	6.00
	TQR	14.69	.793	13	16

#### A. Paired T-test

##### 1) Normality Test

**Table 3. The Normality Test for Sports Massage and Active Recovery Group**

Normality Test					
Type Recovery	Test	Statistics	df	Sig	Description
Sport Massage	Pre-Post HR	.917	16	.152	Normal
	Pre-Post RPE	.927	16	.218	Normal
Active Recovery	Pre-Post HR	.977	16	.931	Normal
	Pre-Post RPE	.906	16	.100	Normal

Based on the normality test results of the sports massage group and the active recovery group above, the data is normally distributed with a significance level > 0.05. **2) Hypothesis testing:**

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In testing the research hypothesis, it is based on the results of the prerequisite test data analysis using the paired samples t-test.

**Table 4. Hypothesis Testing Paired Sample T-Test Test Group (A) Sport Massage Against Fatigue Parameters (HR and RPE)**

Paired Samples Test				
Type Recovery	Test	t	df	Sig. (2-Tailed)
Sport Massage	Pre-Test & Post-Test DN	28.627	15	.000
	Pre-Test & Post-Test RPE	15.684	15	.000
Active Recovery	Pre-Test & Post-Test DN	31.549	15	.000
	Pre-Test & Post-Test RPE	11.783	15	.000

Description:

Based on the results of the paired sample t-test above with the level of sig. (2-tailed) both HR with a value of 0.000 and RPE with a value of 0.000 < 0.05, it can be concluded that there is a significant difference in pre-test data with post-test HR and RPE.

### B. Independent t Test

The next hypothesis testing aims to test the difference in the effect of sport massage with active recovery on the fatigue parameters of HR, RPE, and TQR in karate athletes UKM Yogyakarta State University with the criteria for testing the significance level value < 0.05.

#### 1) Normality Test:

First in this study, a normality test will be carried out with an analysis using the shapiro wilk method. In this study, the test used the SPSS version 21 for Windows application with a significance level of 5% or 0.05.

**Table 5. Normality Test Results of Sport Massage and Active Recovery**

Tests Of Normality					
Type Recovery	Test	Shapiro-Wilk			
		Statistic	Df	Sig.	Description
Sport Massage	Pre-Test DN	.942	16	.378	Normal
	Post-Test DN	.766	16	.001	abnormal
	Pre-Test RPE	.872	16	.029	abnormal
	Post-Test RPE	.778	16	.001	abnormal
	Test TQR	.927	16	.218	Normal
Active Recovery	Pre-Test DN	.918	16	.154	Normal
	Post-Test DN	.780	16	.002	abnormal
	Pre-Test RPE	.750	16	.001	abnormal
	Post-Test RPE	.818	16	.005	abnormal
	Test TQR	.871	16	.028	abnormal

Based on the results of the normality test carried out above, the results obtained in the HR pre-test in the sports massage and active recovery groups and also in the TQR test group on sports massage were "Normal" distribution because the significance

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value > 0.05, while in the RPE pre-test and post-test HR, RPE, both groups and the TQR test on active recovery had an "Abnormal" distribution. Because the significance value < 0.05.

### 2) Hypothesis Testing:

#### a. Comparison of Pre-Test Sport Massage with Active Recovery on Fatigue Parameters (HR, RPE, and TQR)

Research hypothesis testing is carried out based on data analysis and interpretation of independent paired samples t-test analysis and Mann-Whitney test to compare the results of pretest data in two groups.

**Table 6. Results of Pre-Test HR Sports Massage and Pre-Test HR Active Recovery with Independent T-Test Test.**

Independent Sampel t-test				
Sport Massage & Active Recovery	F	Sig.	Sig. (2-Tailed)	
Results	Pre-Test HR	.998	.326	.818

Based on the results of the HR sport massage pre-test and the active recovery HR pre-test with the independent sample t-test above, with the obtained sig. (2-tailed) level value of 0.818 > 0.05, it can be concluded "there is no significant difference" between the results of the sport massage pulse pre-test and the active recovery pulse pre-test.

**Table 7. Results of Pre-Test RPE Sport Massage and Pre-Test RPE Active Recovery with Mann Whitney Test.**

Variable	Asymp. Sig. (2-Tailed)
Pre-Test RPE Sport Massage & Active Recovery	.277

Based on the results of the RPE sports massage pre-test and the active recovery RPE pre-test with the Mann-Whitney test above, the Asymp. sig. (2-tailed) of 0.277 > 0.05, it can be concluded "there is no significant difference between the results of the RPE sports massage pre-test and the active RPE recovery pre-test.

#### b. Comparison of Post-Test Sports Massage with Active Recovery on Fatigue Parameters (HR, RPE, and TQR).

Research hypothesis testing is carried out based on the results of data analysis and interpretation of independent paired samples t-test analysis and Mann-Whitney test to compare the results of post-test data in two groups.

**Table 8. Post-Test Results of HR, RPE & TQR Sport Massage and Active Recovery with Mann Whitney Test.**

Fatigue parameters	Variable	Asymp. Sig. (2-tailed)
HR	Post-Test Sport Massage & Active Recovery	.427
RPE	Post-Test Sport Massage & Active Recovery	.013
TQR	Post-Test Sport Massage & Active Recovery	.524

The Mann-Whitney test results for the post-test analysis of sports massage and active recovery indicate a lack of significant difference in the rating of perceived exertion (RPE) between the two interventions. However, a notable discrepancy arises between the RPE post-test results of sports massage and active recovery. Conversely, no significant distinction is observed in the total quality recovery (TQR) post-test outcomes between sports massage and active recovery.

The present study aimed to investigate the impact of sports massage and active recovery on fatigue parameters, including heart rate (HR), rating of perceived exertion (RPE), and total recovery quality (TQR) in Karate athletes. A two-group pre and post-test design was employed, with 32 athletes allocated to either the sports massage or active recovery group based on sex and resting heart rates. Submaximal karate training was conducted for 90 minutes, followed by pre-test measurements, 15 minutes of recovery, and post-test evaluations. HR and RPE were assessed in both pre-test and post-test, while TQR was only measured in

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the post-test. Paired t-tests were used to analyze the within-group differences in HR and RPE, while independent tests were used to compare HR, RPE, and TQR between the two groups.

The findings revealed that both sports massage and active recovery interventions significantly reduced HR and RPE ( $p < 0.001$ ). However, there were no significant differences observed in post-test HR ( $p = 0.427$ ) and TQR ( $p = 0.524$ ) between the two groups. Interestingly, the sports massage group exhibited significantly lower post-test RPE ( $4.7 \pm 1.2$ ) compared to the active recovery group ( $3.6 \pm 1.2$ ,  $p = 0.013$ ).

The results indicate that both sports massage and active recovery interventions effectively improve HR and RPE. These findings align with previous research highlighting the positive effects of these interventions on fatigue management in athletes. However, it is important to note that the difference in post-test RPE suggests that sports massage may be more effective in reducing perceived exertion compared to active recovery.

The main strength of this study is the randomized allocation of participants into the sports massage and active recovery groups, enhancing the internal validity of the findings. The use of pre and post-test measurements also allows for within-group analysis, providing insights into the immediate effects of the interventions. Moreover, the inclusion of TQR as an outcome measure contributes to a comprehensive assessment of recovery quality. However, several limitations should be acknowledged. Firstly, the sample size was relatively small, which may impact the generalizability of the results. Additionally, the study only assessed the immediate effects of sports massage and active recovery, without considering their long-term benefits or the potential cumulative effects over a training period. Future studies could investigate the sustained effects of these interventions and their impact on performance outcomes, injury prevention, and long-term recovery.

To further advance the knowledge in this area, future research could explore the optimal timing, frequency, and duration of sports massage and active recovery sessions to maximize their effectiveness in different contexts, such as competitions or intense training periods. Additionally, investigating the underlying physiological mechanisms of these interventions and their specific effects on different aspects of fatigue, such as muscle soreness or lactate clearance, would provide valuable insights. Comparative studies examining the effects of different types of massage techniques or variations in active recovery protocols could also contribute to refining the application of these interventions in athletic settings. Lastly, considering the impact of individual characteristics, such as training level or injury history, on the response to sports massage and active recovery would enhance our understanding of their personalized effects and benefits for athletes.

## IV. CONCLUSIONS

The finding of this study highlights that both sports massage and active recovery interventions effectively reduce heart rate (HR) and rating of perceived exertion (RPE). Notably, there were no significant differences in post-test HR and total quality recovery (TQR) between the two groups, although athletes receiving sports massage reported a more favourable RPE experience. In conclusion, this study supports the use of both sports massage and active recovery as effective strategies to mitigate fatigue in Karate athletes. Future research should focus on investigating the long-term effects of these interventions on performance and injury prevention. Additionally, exploring the optimal timing, duration, and frequency of sports massage and active recovery sessions could further enhance their efficacy in Karate training and competition settings.

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## Analysis of the Influence of Distance Learning Through *E-Learning* and Digital Technology Literacy Ability on Student Learning Achievement with Self-Efficacy Mediation



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**ABSTRACT:** This study aims to analyze the effect of distance learning through e-learning and digital technology literacy skills on student achievement by mediating self-efficacy. This study used explanatory research with a total sample of 106 STMIK Bina Patria students. Sampling was carried out using a simple random sampling method. The data analysis technique for testing the hypothesis uses path analysis to see the direct and indirect effects of distance learning variables using e-learning, digital literacy, and self-efficacy as mediators on learning achievement. The results of this study are: (1) Utilization of e-learning (X1) has no effect on student self-efficacy (M); (2) Digital literacy (X2) has a positive and significant effect on student self-efficacy (M); (3) Utilization of e-learning (X1) has a positive and significant effect on learning achievement in practicum courses (Y); (4) Digital literacy (X2) has no effect on learning achievement in practicum courses (Y); (5) student self-efficacy (M) has a positive and significant effect on learning achievement in practicum courses (Y); (6) Based on the Sobel test, the t count > 1.96 is obtained, which means that the variable student self-efficacy (M) mediates the utilization of e-learning (X1) and digital literacy (X2) on learning achievement in practicum courses (Y); (7) Based on the Sobel test, the t count > 1.96 is obtained, which means that Student Self Efficacy (M) mediates the influence of Digital Literacy *Directing* (X2) terhadap Learning Achievement in Practicum courses (Y).

**KEYWORDS:** e Learning, Digital Literacy, Learning Achievement, Self Efficacy -

### INTRODUCTION

For centuries, lecturing is the most commonly resorted teaching practice under the traditional mode of education. To increase the competency level of the teachers many academic and training institutions organize teacher training programs. Teacher training in all fields generally includes advanced digital competency for teaching to develop skills of the teachers on Information and Communication Technology (ICT). Therefore, these topics should be part of both the foundation training of teachers and in-service training. The training should consider aspects of using ICT both as a learning tool within subject teaching and as a tool used by learners for their coursework. Thus, there is a need to develop a systematic strategy for personnel training and updating skills regularly and also provide support services and networks for teachers, embedding digital tools in the institutional learning environment (Ala-Mutka, Punie & Redecker, 2008).

The industrial revolution 4.0 has encouraged various work sectors to create and innovate, including the world of education. Creations and innovations that can be implemented in the implementation of learning in tertiary institutions are distance learning through a learning approach *online (e-learning)*. E-learning is a transformation of the conventional learning process into a digital form. This change is not limited to the content or material content, but also the system. Approach learning *online (e-learning)* is believed to be able to encourage tertiary institutions to improve services and improve the learning process more flexibly. This is because, with e-learning, the learning process is no longer limited by time, distance, geographical conditions, and the presence of students in the classroom.

Distance education has evolved from early correspondence education using primarily print-based materials (offline mode) into a worldwide movement using various technologies. It is fast becoming an acceptable and indispensable part of the mainstream educational systems in both developed and developing countries. Online learning is one of the fastest-growing trends in the application of education. Online learners are often more willing to try things out in a dynamic way than they would be face-to-face. One class of online learning models uses asynchronous communication tools (e.g., e-mail, threaded discussion boards, newsgroups) to allow users to contribute at their convenience. Synchronous technologies (e.g., webcasting, chat rooms, desktop,

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and audio/video technology) are used to approximate face-to-face teaching strategies such as delivering lectures and holding meetings with groups of learners (Means, et.al, 2009). E-learning increases return on investment because users are dividing the fixed production costs. E-learning enhances savings through decreased travel, reduced material, and improved performance (Bora & Ahmed, 2013). E-Learning solutions have been adopted for around ten years (Hegazy. et.al, 2015), and since then, new technologies have been introduced to create a much more tailored experience for students learning. Augmented reality is a major example, where an interactive experience of real-life environments is enhanced and modified by computer-generated information, which includes visual, haptic, auditory, and other aspects to create an interactive and easier way to perceive knowledge (Mualla, 2019). Every student has the main task of learning and developing themselves. Every student is expected to have good learning management, although, in reality, not all students have good learning management. Learning outcomes or student achievement can be influenced by the ability to manage each student's learning. The level of self-efficacy of students greatly affects the size of the effort they make in carrying out activities, how long a student can survive facing the challenges (difficulties) they face, and how flexible a student can be in dealing with something that is not according to their wishes. Students who have a high level of self-efficacy will be better able to face and complete their academic assignments with confidence. This is because the motivation and energy levels they have are higher than those of students who have low levels of self-efficacy. Students who have low levels of self-efficacy are generally less persistent in the academic process, easily discouraged, and prefer to avoid assignments.

### **LITERATURE REVIEW**

#### **1. Self-Efficacy**

Bandura (1997: 3) defines self-efficacy as an individual's perception of his or her ability to perform the expected action. Individuals who have high self-efficacy will choose to do more effort and be more persistent. Self-efficacy has an important role in setting one's motivation. Someone believes in his ability to have high motivation and try to succeed. According to Bandura quoted from Baron and Byrne (2003), states that self-efficacy is a person's evaluation of his ability or competition to perform a task, achieve goals or overcome obstacles. Meanwhile, Luthans (2008: 202) defines self-efficacy as individual beliefs or beliefs about their ability to drive motivation, cognitive resources, and ways of acting needed to successfully carry out tasks in certain contexts. Skills and leadership and mental maturity are also needed here. Bandura (1997: 42-43) also explains that self-efficacy consists of 3 dimensions, namely magnitude or level, generality, and strength.

The experience of solving problems holds a very significant influence in shaping an individual's self-efficacy. Success or success received by an individual in dealing with a problem in his life will build positive feelings toward the individual, while failure will undermine the individual's self-confidence, especially when self-efficacy has not been strongly formed in the individual (Bandura, 1997: 79). Success and success that are always easily obtained by an individual will give a tendency for that individual to expect quick results and be easily weakened because of an obstacle or failure. The experience of an individual in facing obstacles with persistent and diligent effort is needed to form a strong belief. Business success requires the hard work of an individual in dealing with failures and obstacles. An individual will always try to rise from failure after the individual is given the belief that the individual has something to achieve success and success. Feist & Feist (2008: 416) explain the high and low levels of self-efficacy combined with a supportive and unsupportive environment. With high self-efficacy and a supportive environment, the most predictable outcome is success. With low self-efficacy and a supportive environment, humans can become depressed when they observe others completing tasks they find difficult. High self-efficacy meets an unsupportive environment, humans will usually try hard to change the environment. Low self-efficacy combined with an unsupportive environment, humans will feel apathetic, give up easily, and feel helpless.

#### **2. E-learning**

According to Allen and Seaman (2013), e-learning is learning that is structured to use an electronic or computer system so that it can support the learning process. E-learning (electronic learning) can also be said to be one aspect of the application of information and communication technology in the world of education in the delivery of learning content or electronic learning experiences using computers and computer-based media. E-learning is also defined as learning that is structured to use an electronic or computer system so that it can support the learning process (Michael, 2013). Meanwhile, Ardiansyah (2013) defines e-learning learning as a learning system that is used as a means for the teaching and learning process which is carried out without having to meet face to face directly between teachers and students.

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## 3. Learning Achievement

Learning achievement cannot be separated from learning activities. Learning is a process while learning achievement is the result of the learning process. Tu'u (2004: 65) states that learning achievement is mastery of knowledge or skills developed by subjects, usually indicated by test scores or scores given by the teacher. According to Syah (2010: 144) learning achievement is a level in a program, so learning achievement is a person's real ability as a result of carrying out certain business activities and the results can be measured.

## 4. Digital Literacy

Tang and Chaw (2016) state that digital literacy is a prerequisite skill that must be possessed by individuals to be able to learn effectively in distance learning. Blayone (2018) also explains that digital competence is a determining factor in individual readiness to learn in distance learning.

## RESEARCH METHOD

In this study, researchers used this type of research *Eksplanatory Research*. According to Singarimbun (2006). "*Eksplanatory Research*" is research that explains the causal relationship between research variables through hypothesis testing that has been formulated previously. Researchers took samples from the student population of STMIK Bina Patria Magelang. The research sample taken was 106 students. How to determine the sample in this study using *methods of simple random sampling* by collecting the necessary data from questionnaires that have been filled out online. The reason for using online data collection is that it is more time efficient because it can be done during the time of the respondent's activities and makes it easier for the respondent to fill in the data because it can be done whenever and wherever the respondent is active. The number of samples taken consisted of 5 students (4.7%) from the Informatics Management study program, 50 students (47.2%) from the Information Systems study program, and 51 students (48.1%) from the Informatics Engineering study program. In terms of gender, the sample consisted of 61 students (57.5%) male and 45 students (42.5%) female.

Data analysis techniques in hypothesis testing use path analysis (*path analysis*) because, between the independent variables and the dependent variable, there is a mediating effect. The purpose of path analysis is to see the direct and indirect effects of distance learning variables using e-learning, digital literacy, and self-efficacy on learning achievement. The equation model in this study is as follows:

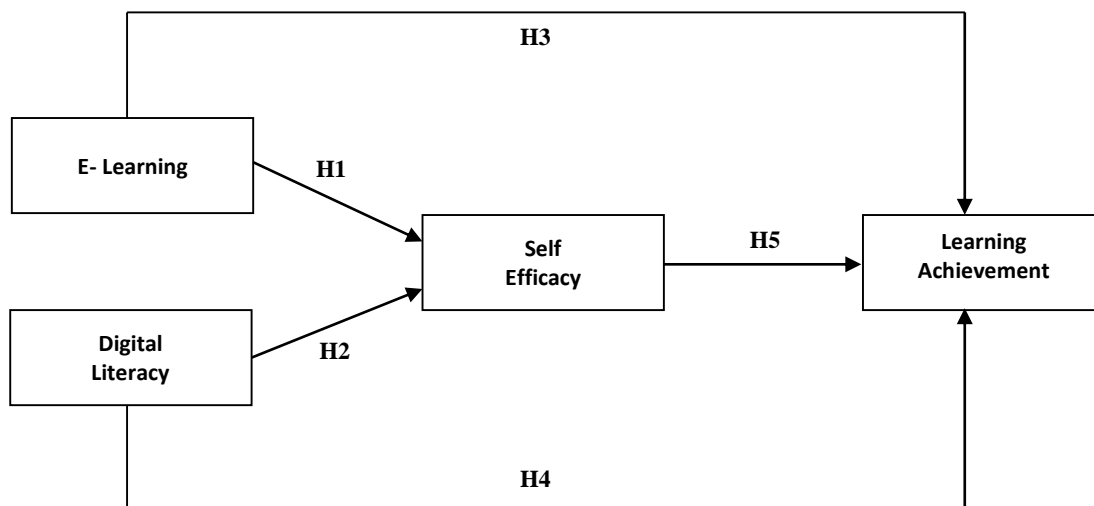


Figure 1. Research Model

$$M = b_1 X_1 + b_2 X_2 + e_1$$
$$Y = b_3 X_1 + b_4 X_2 + b_5 M + e_2$$

Information :

X1 = E-Learning

X2 = Digital Literacy

b1= Path coefficient X1 to M

b2 = Path coefficient X2 to M



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- b3 = Path coefficient X1 to Y
- b4 = Path coefficient X2 to Y
- b5 = Path coefficient M to Y
- e1 = error structure 1
- e2 = error structure 2

The hypothesis of this study includes the following:

- H1: There is a direct influence of distance learning by using e-learning against self-efficacy.
- H2: There is a direct influence on Digital literacy self-efficacy.
- H3: There is a direct effect of distance learning using e-learning on learning achievement.
- H4: There is a direct influence of digital literacy on learning achievement.
- H5: There is a direct influence of self-efficacy on learning achievement.
- H6: There is an indirect influence of distance learning by using e-learning on learning achievement with self-efficacy as a mediating variable.
- H7: There is an indirect effect of digital literacy on learning achievement with self-efficacy as a mediating variable.

## Variable Operational Definitions

### Independent Variable (Independent Variable (X)).

An Independent variable (Independent Variable) is a variable that influences or causes changes in the emergence of the dependent variable. In this study, the independent variable is distance learning using e-learning (X1) dan digital literacy(X2).

### Variabel Intervening (M)

Other variables are variables *intervening in* the type of variables that affect the relationship between the independent variables and the dependent variables to be an indirect relationship. The intervening variable in this study is self-efficacy (M)

### Dependent Variable (Dependent Variable (Y))

The dependent variable is the variable that is affected or is the result, because of the independent variables (Sugiyono, 2008). The dependent variable in this study is learning achievement.

## RESEARCH RESULTS AND DISCUSSION

### 1. Multiple Linear Regression Analysis Equation 1

Table 1. Results Of Equation Data Analysis 1

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1,013	,334		3,032	,003		
Utilization_of_eLearning	,164	,088	,186	1,860	,066	,602	1,662
Digital_Literacy	,480	,099	,483	4,832	,000	,602	1,662

a. Dependent Variable: Student\_Self\_Efficacy

Based on the results of data analysis that has been carried out by calculation, then based on the results of the t-test Utilization of eLearning in Table 1. shows the results of the t-test with  $t_{(0.05; 103)}$ , obtained some 1.983 (t table). Test the significance of the regression coefficient with the t-test obtained t count = 1.860 (1.860 < 1.983) then t count < t table with a significance of 0.066. Because the significance value obtained exceeds 0.05 and shows that the calculated t value is smaller than the t table, the t value obtained is not significant, this means that the utilization of the e-learning variable (X1) does not affect student self-efficacy (M) student of STMIK Bina Patria Magelang.

For the calculation of digital literacy t-test results in Table 1. shows the results of the t-test with  $t_{(0.05; 103)}$ , obtained some 1.983 (t table). Test the significance of the regression coefficient with the t-test obtained t count = 4.832 (4.832 > 1.983) then t count > t table with a significance of 0.000. Because the significance value obtained is less than 0.05 and indicates that the calculated t value is greater than the t table, the t value obtained has a positive and significant effect, this means that the digital literacy variable (X2) has a positive and significant effect on student self-efficacy (M) students of STMIK Bina Patria Magelang.

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**Table 2. Regression Data Analysis Results From Equation 1**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,617 <sup>a</sup>	,381	,369	,47144	,381	31,701	2	103	,000	1,550

a. Predictors: (Constant), Digital\_Literacy, Utilization\_of\_eLearning

b. Dependent Variable: Student\_Self\_Efficacy

Based on the results of Table 2. the first regression equation is obtained as follows:

Student self-efficacy = 1.013 + 0.164 utilization of e-learning + 0.480 digital literacy + e. The result of the coefficient of determination (R<sup>2</sup>) is based on the results of Table 2. A value of 0.381 (38.1%) is obtained, meaning that the contribution of the utilization of e-learning and digital literacy variables as independent variables can explain variations in changes in the student self-efficacy variable as the dependent variable of 38.1%.

**Table 3. F-Test Results Equation Data 1**

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14,092	2	7,046	31,701	,000 <sup>b</sup>
	Residual	22,892	103	,222		
	Total	36,984	105			

a. Dependent Variable: Student\_Self\_Efficacy

b. Predictors: (Constant), Digital\_Literacy, Utilization\_of\_eLearning

Table 3 shows the results of the F test of 31.701 with F table = 3.08, then F count > F table so that it can be concluded that the model accuracy test on the utilization of e-learning and digital literacy variables has an effect on student self-efficacy in STMIK Bina Patria Magelang students.

## 2. Multiple Linear Regression Analysis Equation 2

**Table 5. Results Of Regression Data Analysis Equation 2**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-,007	,282		-,023	,981		
	Utilization_of_eLearning	,209	,072	,215	2,885	,005	,582	1,718
	Digital_Literacy	,029	,089	,026	,320	,749	,490	2,039
	Student_Self_Efficacy	,741	,080	,672	9,287	,000	,619	1,616

a. Dependent Variable: Learning\_Achievement\_in\_Practicum\_courses

**Table 5. Results Of Regression Data Analysis Equation 2**

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,818 <sup>a</sup>	,669	,659	,38154	,669	68,768	3	102	,000	2,163

a. Predictors: (Constant), Student\_Self\_Efficacy, Utilization\_of\_eLearning, Digital\_Literacy

b. Dependent Variable: Learning\_Achievement\_in\_Practicum\_courses

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Based on the results of Table 4. the first regression equation is obtained as follows:

Learning achievement in practicum courses = - 0,007 + 0,209 utilization of e-learning + 0,029 digital literacy + 0,741 student self-efficacy + e. The result of the coefficient of determination ( $R^2$ ) is based on the results of Table 5. A value of 0.669 (66.9%) is obtained, meaning that the contribution of the variables utilization of e-learning, digital literacy, and student self-efficacy as independent variables can explain variations in changes in the learning achievement in practicum courses variable as the dependent variable of 66.9%.

**Table 6. F-Test Results Equation Data 2**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30,032	3	10,011	68,768	,000 <sup>b</sup>
	Residual	14,848	102	,146		
	Total	44,880	105			

a. Dependent Variable: Learning\_Achievement\_in\_Practicum\_courses

b. Predictors: (Constant), Student\_Self\_Efficacy, Utilization\_of\_eLearning, Digital\_Literacy

Table 6 shows the results of the F test of 68.768 with F table = 2.69, then F count > F table so that it can be concluded that the model accuracy test on the utilization of e-learning variable, digital literacy, student self-efficacy influences learning achievement in practicum courses students of STMIK Bina Patria Magelang. The results of this study are in line with research conducted by Suryani et.al (2020) which states that the Sig. (2– tailed) between Self-Efficacy (X1) and Learning Outcomes (Y) is 0.000 <0.05, which means that there is a significant correlation between Self-Efficacy (X1) and learning outcomes (Y). Similar results were also conveyed by Christiana (2018, 2020) who stated that academic self-efficacy is interpreted as the belief that an individual has, that he or she can achieve academic success. The same thing was conveyed by Murphy (in Johnson, 2017) who stated that academic climate and academic self-efficacy were positively correlated with student academic performance, as evidenced by some 276 students who had confidence and completed assignments as a prerequisite for taking the exam.

Based on the results of data analysis that has been carried out by calculation, then based on the results of the t-test Utilization of elearning (X1) in Table 4. shows the results of the t-test with  $t_{(0.05; 102)}$ , obtained some 1.984 (t table). Test the significance of the regression coefficient with the t-test obtained t count = 2.885 (2.885 > 1.984) then t count > t table with a significance of 0.005. Because the significance value obtained is less than 0.05 and indicates that the calculated t value is greater than the t table value, the t value obtained has a positive and significant effect, this means that the utilization of the e-learning variable (X1) has a positive effect and significant to learning achievement in practicum courses (Y) for STMIK Bina Patria Magelang students. However, the results of this study contradict the results of the study which concludes that the implementation of learning using *e-learning* website-based is less effective in improving student learning outcomes at STMIK Asia Malang (Islamiyah and Widayanti, 2016).

For the calculation of digital literacy t-test results (X2) Table 4. shows the results of the t-test with  $t_{(0.05; 102)}$ , obtained a figure of 1.984 (t table). Test the significance of the regression coefficient with the t-test obtained t count = 0.320 (0.320 <1.984) then t count < t table with a significance of 0.749. Because the significance value obtained exceeds 0.05 and shows that the t count value is smaller than the t table, the t value obtained is not significant, this means that the digital literacy variable (X2) has no effect on learning achievement in practicum courses (Y) for STMIK Bina Patria Magelang students.

For the calculation of student self-efficacy (M) t-test results in Table 4. show the results of the t-test with  $t_{(0.05; 102)}$ , obtained some 1.984 (t table). Test the significance of the regression coefficient with the t-test obtained t count = 9.287 (9.287 > 1.984) then t count > t table with a significance of 0.000. Because the significance value obtained is less than 0.05 and indicates that the calculated t value is greater than the t table, the t value obtained has a positive and significant effect, this means that the variable student self-efficacy (M) has a positive and significant effect on learning achievement in practicum courses (Y) for STMIK Bina Patria Magelang students. The results of this study are by research conducted by Lampert (2007) concerning the relationship between academic self-efficacy, academic self-concept, and academic achievement indicating that academic self-efficacy is a significant predictor that can be used in predicting academic achievement compared to academic self-concept.

### 3. Intervening Test

In this study, the goal that will be proven is the relationship between the variables of the utilization of eLearning and digital literacy with learning achievement in practicum courses through the mediation of student self-efficacy variables, therefore it is necessary to test direct and indirect effects. The step taken is to calculate the path coefficient with two regression equations, namely: a)

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Student Self Efficacy =  $\alpha + b_1$  Utilization of eLearning +  $b_2$  Digital Literacy + e. b) Learning Achievement in Practicum courses =  $\alpha + b_3$  Utilization of eLearning +  $b_2$  Digital Literacy +  $b_3$  Student Self Efficacy + e. The results of the calculation of the regression analysis of equations 1 and 2 can be obtained from the path analysis below:

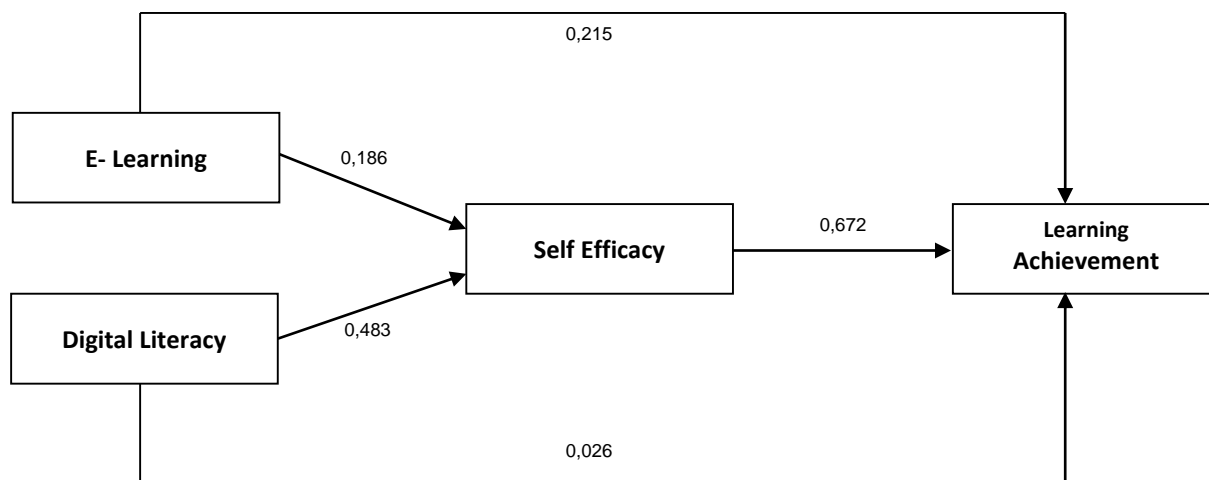


Figure 2. Intervening Test Model

Effect of X1 on Y through M:

The magnitude of the Direct Influence is 0.215

The magnitude of the indirect effect is  $0.186 \times 0.672 = 0.125$

Total Influence =  $0.215 + (0.186 \times 0.672) = 0.340$

Effect of X2 on Y through M:

The magnitude of the Direct Influence is 0.026

The magnitude of the indirect effect is  $0.483 \times 0.672 = 0.325$

Total Influence Amount =  $0.026 + (0.483 \times 0.672) = 0.350$

#### 4. The Effect of Student\_Self\_Efficacy Mediation Variable (M) Mediating Utilization of eLearning Variable (X1) on Learning Achievement in Practicum Courses (Y)

Baron & Kenny (1986), stated "The mediating variable is the variable that influences the relationship between the independent variables and the dependent variable". The mediation hypothesis test was carried out with the Sobel test developed by Sobel. The Sobel test was carried out by testing the strength of the indirect effect (*indirect effect*) independent variable (X1) to the dependent variable (Y) through the mediating variable (M). Then the magnitude *standard error* indirect effect (*indirect effect*)  $S_{ab}$  can be calculated by the Sobel formula *test* as follows :

$$S_{ab} = \sqrt{b^2 S_a^2 + a^2 S_b^2 + S_a^2 S_b^2}$$

Based on the beta value and standard error in Table 1 *Coefficient* Utilization of eLearning *directing* (X1) on Student Self Efficacy (M), and Table 4 *Coefficient* Student Self Efficacy (M) on Learning Achievement in Practicum Courses (Y), obtained beta values and standard errors for each Utilization of eLearning variable *Directing* (X1) and Student Self Efficacy (M) as follows:

= 0,186 : *Coefficient direct effect* variabel Utilization of eLearning *Directing* (X1) on the mediating variable Student Self Efficacy (M);

= 0,672 : *Coefficient direct effect* variabel mediasi Student Self Efficacy (M) terhadap variabel dependen Learning Achievement in Practicum Courses (Y).

= 0,088 : *Standard Error* from a.

= 0,080 : *Standard Error* from b.

By entering the values a, b,  $S_a$ , and  $S_b$  in the Sobel equation above, the value of  $S_{ab} = 0.061$  is obtained. To obtain the calculated t value of the indirect effect of the Utilization of eLearning variable *Directing* (X1) which is mediated by the variable Student Self Efficacy (M) on Learning Achievement in Practicum Courses (Y) using the equation  $t \text{ count} = ab / S_{ab}$ . By entering the values of a, b, and  $S_{ab}$  above, the value of t count = is obtained at 2.049. t count value (2.049) is greater (>) than 1.96 so it can be concluded that student self-efficacy (M) mediates the effect of utilization of e-learning *Directing* (X1) on learning achievement in practicum courses (Y). Thus the  $H_6$  hypothesis is accepted, and the data supports the model.

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### 5. The Effect of Mediating Student Self-Efficacy Variables (M) Mediating Digital Literacy Variables (X2) on Learning Achievement in Practicum Courses (Y)

Based on the Beta and Standard Error values in Table 1 *Coefficient* Digital Literacy *Directing* (X2) on Student Self Efficacy (M), and Table 4 *Coefficient* Student Self Efficacy (M) on Learning Achievement in Practicum courses (Y), obtained Beta and Standard Error values for each Digital Literacy variable *Directing* (X2) and Student Self Efficacy (M) as follows:

- = 0,483 : Coefficient *direct effect* variabel Digital Literacy *Directing* (X2) on the mediating variable Student Self Efficacy (M);
- = 0,672 : Coefficient *direct effect* variabel mediasi Student Self Efficacy (M) terhadap variabel dependen Learning Achievement in Practicum courses (Y).
- = 0,099 : *Standard Error* from a.
- = 0,080 : *Standard Error* from b.

By entering the values a, b, Sa, and Sb in the Sobel equation above, the value of Sab = 0.077 is obtained. To obtain the calculated t value of the indirect effect of the Utilization of eLearning variable *Directing* (X1) which is mediated by the variable Student Self Efficacy (M) on Learning Achievement in Practicum courses (Y) using the equation:  $t \text{ count} = ab / Sa$ . By entering the values of a, b, and Sab above, the value of t count = is obtained at 4.218. t count value (4.218) is greater (>) than 1.96 so it can be concluded that Student Self Efficacy (M) mediates the influence of Digital Literacy *Directing* (X2) towards Learning Achievement in Practicum courses (Y). Thus the H7 hypothesis is accepted, and the data supports the model.

### RESEARCH CONCLUSION

The conclusions in this study are: (1) Utilization of e-learning (X1) has no effect on student self-efficacy (M) of STMIK Bina Patria Magelang students; (2) Digital literacy (X2) has a positive and significant effect on student self-efficacy (M) of STMIK Bina Patria Magelang students; (3) Utilization of e-learning (X1) has a positive and significant effect on learning achievement in practicum courses (Y) for STMIK Bina Patria Magelang students; (4) Digital literacy (X2) has no effect on learning achievement in practicum courses (Y) for STMIK Bina Patria Magelang students; (5) student self-efficacy (M) has a positive and significant effect on learning achievement in practicum courses (Y) for STMIK Bina Patria Magelang students; (6) Based on the Sobel test, the t count > 1.96 is obtained, which means that the variable student self-efficacy (M) mediates the utilization of e-learning (X1) and digital literacy (X2) on learning achievement in practicum courses (Y) STMIK Bina Patria Magelang students; (7) Based on the Sobel test, the t count > 1.96 is obtained, which means that Student Self Efficacy (M) mediates the influence of Digital Literacy *Directing* (X2) terhadap Learning Achievement in Practicum courses (Y).

Advice that can be given to the management of STMIK Bina Patria Magelang is that in increasing learning achievement in practicum courses, it is necessary to pay attention to good utilization of e-learning, digital literacy, and student self-efficacy because based on the results of this study, these three factors have a significant influence significant to learning achievement in practicum courses.

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## The Environmental Impact of Mining on Local Communities in Tankoro Chiefdom, Kono District, Sierra Leone



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**ABSTRACT:** To effectively determine the environmental and social impacts of mining on local communities in Tankoro chiefdom, the researcher applied a mixed methods research methodology to perform the study. The study applied methods in the data collection that consist of, questionnaire interviews through Kobo Collect and focus group discussion. The sample size was 393 respondents. The study discovered that the local communities where the mining activities are carried out suffer negative effects on the environment together with the society. Nevertheless, Koidu Holdings had tried to decrease the negative impacts of mining operations on the affected communities due to uncompromising concerns among the affected communities. It had also constructed new markets, a Primary Health Unit (PHU), building of relocated schools, renovation of old schools, provided scholarships to students at all academic levels and has supported schools with educational resources as well as dug some boreholes, mainly in Kanniya resettlement community, which served as a drinkable water, to help reduce the sternness of water crisis.

**KEYWORDS:** Mining, Environment, Social, Minerals, Communities.

### 1.0 INTRODUCTION

Africa has seen a speedy rise in the scale of mineral mining in previous years. Besides, in the 1980s and 1990s, the sector saw a fast liberalization, making opportunities mainly for western multinational companies to invest in large-scale mining, and strengthening the anticipations that countries might utilize their mineral wealth for national development purposes. The rise and later drop in mineral prices have given countries and companies a palate of the huge economic prospective of mining in Africa. Until now, it has as well exposed a lot of the structural problems of mining in the perspectives of feeble organizations and extremely relaxed forms of governance. Price instability means companies and governments are confronted with soaring expectations they frequently cannot bump into. Similarly, deceit and cloudy agreements are usual, also local development influence is time and again more obscure than was expected. This then and there leads to pressures and possible conflict between companies, communities and authorities over access to resources as well as its management that might lead to environmental degradation and hindered development at large (Medinilla and Karaki 2017).

According to ITA (2020), Sierra Leone is well recognized for its massive bequest in minerals which comprise of diamonds, rutile, bauxite, gold, iron ore, limonite, platinum, chromite, coltan, tantalite, columbite and zircon, in addition to a favourable petroleum prospective. In the 1990s, the 11-year civil war sponsored with revenue from the minerals sector overwhelmed the country, which brought about extensive killing, devastation of infrastructure and an austere reduction in the economy. The sector was also seriously pretentious by the double shockwave of the drip in iron ore prices and the Ebola endemic in 2014. It is evident that mining has been the backbone of the economy ever since independence and the Government of Sierra Leone has stayed greatly reliant on its mineral resources to support sustainable economic growth over the years.

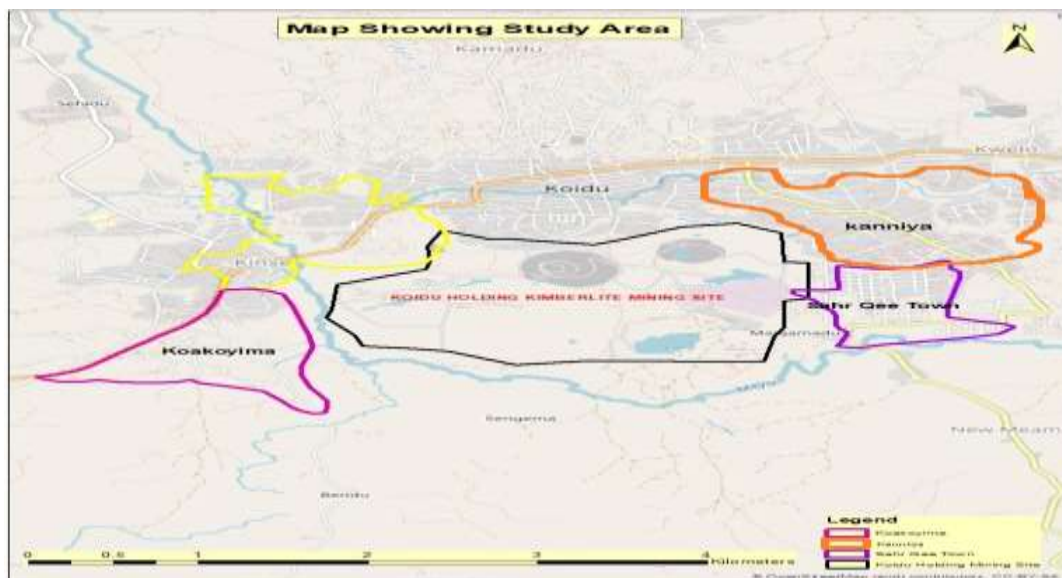
### 1.1 Research Questions

- i) What are the environmental impacts of the mining on local communities?
- ii) What are the social impacts of mining on host communities?

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## 1.2 The Study Area

The study is demarcated to Kono district, east of Sierra Leone. Kono District is a district in the Eastern Province of Sierra Leone. Its capital and largest city is Koidu City. Kono district is the major diamond producer in Sierra Leone. Because of the notable mining history of Kono, the researcher decided to select Tankoro chiefdom in the Kono district as a case study so as to explore Koidu Holdings impact of mining in the local communities in Tankoro chiefdom. The study was conducted in three communities (Kanniya Resettlement, Sahr Qee Town, and Koakoyima) in Koidu New Sembahun City Kono District, east of Sierra Leone. These three communities have an estimated population of 21,398 projected from the 2015 population and Housing census (Kanniya Resettlement 7,846, Sahr Qee Town 5,090, and Koakoyima 8,463). The purpose was to get different views and opinions from diverse respondents (Statistics Sierra Leone 2022).



## 2.0 REVIEW OF RELATED LITERATURE

This study reviewed the following below in line with the research questions.

### 2.1 Local communities and mining

One of the most undesirable impacts of mining is the physical dislocation of thousands of people for undertaking mining operations in their habitation areas. This is an enormous challenge for human rights and poses colossal social danger. As described by Downing (2011), in India the displacement because of mining accounted to over 2.55 million people between 1950 and 1990 as a result of mining activities. The displacement which forces whole communities to move somewhere else is not only restricted to losing their homes, but likewise their land, and livelihoods. The relocation of displaced communities is typically in areas without sufficient resources and areas close to mining operations occupied with pollution and uncleanness. Involuntary resettlement can be mainly devastating for local communities who have sturdy cultural and spiritual relations to the lands and forest of their ancestors and who might find it problematic to survive when these are broken in Jharia Coalfields dislocation is still a grave issue for their suitable recuperation as discovered in their study (Singh et al 2015).

### 2.2 Environmental and social impacts of mining

Carvalho (2017) observed one important aspect in all mining projects, which is the risk assessment of mine operations bordering human settlements. Formerly, in European countries for instance, it was common to see mines and cities as well as their activities entwined in a small area. It was the case for instance, the Ruhr basin in Germany, Loire in France together with West Midlands (Birmingham) in UK, which were very old mining regions. In recent years, the regulations and apprehensions of environmental resources lead to the moderation of pollution and rectification of the environmental impact. One good case is the Erzgebirge (Ore Mountains) in Saxony, Germany, close to the border with Czech Republic, where initially silver and related base metals and later uranium was mined to supply the URSS nuclear programme. Through Germany reunion in 1991, a large environmental remediation programme started that intricate cleaning of polluted areas, radioactive waste incarceration, installation of mine water treatment plants, and reconstruction of the countryside and villages. Rectification was required since the exposure of large communities to radiation and radioactive waste is not tolerable consistent with present radiation protection standards (IAEA, 2014).



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A study on the favourable social and economic impacts of diamond mining on local communities in Sierra Leone was conducted by NMJD in the summer of 2020. According to their research, there are subpar living conditions in mining regions as well as a number of problems that the locals associate with mining, including gender-based violence, teenage pregnancies, the dropout of girls from school, a lack of and high cost for basic foods, environmental degradation, such as contaminated water basins and abandoned pits that act as breeding grounds for disease-carrying mosquitoes, and dishonest landowners. People in the study areas who live in communities where diamond mining has an influence typically think that mining has little socioeconomic benefits. Focus groups found that the communities had only seen minor infrastructural improvements and poorly paying jobs for young people (NMJD 2020)

Contrary to what Koidu Limited asserted when they gained control of the Koidu Kimberlite Mine in Sierra Leone, this shows a lack of compliance in minimizing the negative consequences of mining on the impacted ecosystem. It assured residents of the Gbense and Tankoro Chiefdoms that forthcoming mine expansions would boost local prosperity and provide jobs. It promised to ensure that any impacted community members would receive new residences at a safe distance from the mine in accordance with strict environmental requirements in order to lessen the harm caused by the mine. However, the predicted profit was never realized by the community. Instead, it has not benefited economically or socially from diamond mining and has been disproportionately impacted by its negative repercussions. They were evicted from their homes by Koidu Limited, and many families have been waiting to be relocated for more than ten years. Debris from daily mine blasts pours over their rooftops and onto their farmland. Locals are unable to cultivate their homesteads. This is also because the massive heap of mining waste that stands over Koidu has buried some of the inhabitants' fields. Their land is no longer fertile since mining activities have depleted water supplies and are discharging harmful substances into their soil. Residents assert that the mine is to blame for their lung problems, high blood pressure, gastrointestinal problems, migraines, and other health problems. In response to community protests about the company's working conditions and environmental harm, Koidu Limited called the police, who then shot and killed four individuals, including a 12-year-old boy (EarthRight International 2021).

Similarly in Sierra Leone, in recent years, the regulations and anxieties about environmental resources have led to the control of pollution and enhancement of the environmental impact. This was done through an appeal to Oxfam (the Columbia Center on Sustainable Investment), that carefully chose provisions in the Mines and Minerals Act 2009 and reliable policy statements from the Minerals Policy 2018 to offer recommendations on how to best support the anticipated new mining law with international best practices. The succeeding topics were revised: fiscal regime, climate change, access to and use of land, community consultations and participation, human rights together with the community development agreements. The team finished a desk-top appraisal of the following laws and policies: Mines and Minerals Act 2009, Mines and Minerals Regulations 2009, Minerals Policy 2018, Local Government Act 2004, the Sierra Leone Environment Protection Agency Act 2008, Environmental and Social Regulations for the Minerals Sector 2012, the Income Tax Act as amended by the Financial Act 2015, the Finance Act 2016, the Extractive Industries Revenue Act 2018 and the Financial Act 2019. As, the Minerals Policy has been prepared as part of series of legal, regulatory and institutional reforms introduced by the Government to make sure that Sierra Leone make the most benefits from its mineral resource endowments. By extension of these reforms, the core Minerals Policy of 2003 is now replaced by the Sierra Leone Minerals Policy of 2018. The policy is a more thorough document that considers international, continental and regional initiatives relevant to mineral sector governance and management. It also captures modern developments in the mining sector in Sierra Leone and places the mineral sector at the heart of achieving Sierra Leone's long-term vision for sustainable growth and transformational development (SLMP 2018, Mebratu-Tsegaye et al 2020).

### **3.0 RESEARCH METHODOLOGY**

This study utilized a single case study analysis methodology. The researcher possessed the necessary skills and expertise to thoroughly explore the case, allowing for the observation of data within the case analysis and the generation of a cross-case analysis (Yin, 2003). The selection of a case study method was deemed appropriate for this study, as it facilitated the researcher's ability to provide a narrative regarding the communities affected by the operations of Koidu Holdings (Yin, 2014). To ensure a representative sample, a Probability Size (PPS) technique was employed to select participants from the communities impacted by the mining activities, specifically the Kanniya Resettlement, Sahr Quee Town, and Koakoyima (sampling units) within the Tankoro Chiefdom (sampling frame). Consequently, a total of 392 respondents were included in the sample. It is worth noting that a sampling unit refers to the individual or object being observed, while a sampling frame encompasses the entire population from which individuals or objects can be observed (Ullah, 2013). The distribution of the questionnaire was based on the proportional allocation of sampling units, in accordance with the 2021 projected population data for Tankoro Chiefdom in the Kono district as follows:

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### Respondents Distribution according to sampling units

Mining sampling units in Tankoro Chiefdom	Respondents	Percent
Kanniya Resettlement community	144	37%
Sahr Qee Town community	93	23%
Koakoyima community	155	40%
<b>TOTAL</b>	<b>392</b>	<b>100%</b>

Researcher's study data 2022

### 3.1 Stratified sampling

Stratified sampling permits the researcher to draw additional thorough decisions by guaranteeing that every single smaller group is accurately represented in the sample. In order to apply this sampling technique, the researcher classifies the dissimilar categories of people that constitute the target population and works out the amounts required for the sample to be representative. Equally, it is much comfortable to stratify a population on the basis of gender than on the basis of age, income or attitude (Kumar 2011; McCombes 2019; McLeod 2019). In this situation, the researcher went more to split the groups by gender. So, the succeeding proportional gender allocation were adult participants as follows: 73 males, 71 females' proportional allocation was made for Kanniya Resettlement; 46 males, 47 females for Sahr Quee Town and; 78 males, 77 females for Koakoyima, totaling 392 respondents. As a result, the percentage of the population being sampled was 1.83%. That is: Total population = 21,398

Sample size = 392

Cluster group =  $\frac{21398}{392} = 54.5\%$

392

$54,5867 \times 392 = 21,398$

% sampled =  $\frac{392}{21398} \times 100 = 1.83\%$

21398

### 3.2 Ethical Issues

According to Orb et al (2000) any research that consist of people needs awareness of ethical issues. Cohen et al (2007) stated the importance of keeping ethical behaviour when carrying out research. Therefore, researchers require to have respect for local traditions, customs, norms, and values. Participants must be informed of the reason and nature of the study so that they are in the position to give an informed consent to participate in the study. Participants should also be knowledgeable that their participation is voluntary, and they can choose to withdraw from the study at whatever time. The data provided by the participants were interpreted honestly without misrepresentation. In understood of that, interviewees were assured that their responses would be nameless. It was made clear to them that their responses are only going to be used for the purpose of the study.

## 4.0 DISCUSSION OF FINDINGS

In order to draw a decision, the researcher sought input from the residents of Kanniya Resettlement, Koakoyima, and Sahr Quee Town their opinions regarding the environmental and social effects brought on by the company's investments in mining in the focal mining communities. The study found out that the operations of Koidu Holdings mining company has serious environmental impact on the affected mining communities in Tankoro chiefdom which have caused the following effects based on the findings:

### I. Land degradation

The results of the study indicated that 63(16%) said, air pollution, 83(22%) degradation of land and vegetation, 22(6%) Noise pollution, and 39(10%) water pollution are the causes of land degradation. Even though mining is a key component of the economies of many developing nations, there is evidence that all mining operations have a negative impact on the environment. It worsens farmland to terrible conditions, random vegetation loss, and river sedimentation. However, improper mining techniques are primarily to blame for the destruction of the environment that mining activities produce (Oviir and Utouh 2010; Measham et al 2013, Boadi et al 2016, Bansah et al 2018).

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### **II. Deforestation**

Because of the mining company's methods of operation that had caused negative effects on the environment; 78(20%) said Koidu Holdings had compensated the affected communities - provided alternative sources of drinking water, resettled the affected communities, constructed relocated schools, re-afforested areas long deforested, and reviewed methods of operation. Although the mining company has taken efforts to minimize the environmental damage adequately and operatively; a majority of the respondents which are 353(91%) are still not satisfied with the said improvement, though 33(9%) expressed satisfaction with the attempt. Accordingly, diamond mining had resulted in adverse effects on the landscape and ecosystem at large in the study areas. Mineral extraction has long been connected to widespread deforestation, degraded soil, and environmental contamination in the Tankoro chiefdom. In addition to the pervasive environmental disruption, lost agricultural land, inadequate water accessibility, and deforestation (NACE 2009, NMJD 2010, Human Rights Watch 2014).

### **III. Siltation of waters**

There has been undesirable increase in concentration of deposition of water-borne silt in body of water in the affected communities due to the mining activities. As said by Awudi (2002), the extractive industries are mostly to blame for land degradation, waste management, deforestation, and the spread of chemicals in rivers and streams, which lowers the quality of the water that humans drank. Garvin et al. (2009) expressed that that alternate sources of drinking water were insufficient in some mining communities where water scarcity was brought on by contamination of water sources. The deliberate or unintentional release of chemicals and waste water during the processing of minerals could lead to erosion, contamination, and changes in water flow as a result of increased surface or groundwater removal.

### **IV. Soil/land/Water pollution**

There is air pollution, land and vegetation deterioration, noise pollution, water contamination, attacks from the blast and destruction of the land, flooding, and other impacts, according to 212 (55%) respondents. Water was obtained via boreholes, wells, pipes, local streams, and rain in the impacted communities. There is a serious water deficit in the mining areas as a result of mining activities. Garvin et al. (2009) also noted that alternate sources of drinking water were insufficient in some mining communities where water scarcity was brought on by contamination of water sources. The deliberate or unintentional release of chemicals and waste water during the processing of minerals could lead to erosion, contamination, and changes in water flow as a result of increased surface or groundwater removal, all of which could have a significant impact on the amount of water available. But in addition to using a lot of water, mining and related activities frequently have an effect on the local hydrological system and the quality of the water as well.

Nevertheless, 91% of respondents are still dissatisfied with the ostensible improvement, despite the mining company's efforts to reduce environmental damage operationally. Nonetheless, 9% of respondents expressed satisfaction with the endeavour. As a result, diamond mining had a negative impact on the study areas' overall environment and ecosystem. This demonstrates the reason why 68% of the respondents in the three affected communities do not support mining in the Tankoro communities, because of some of its negative effects. Even though 32% of the respondents however supported mining in the communities owing to its expected rewards such as employment opportunities and socioeconomic benefits (construction of markets, schools, recreational centres, and hospitals) as the case may be.

On the socio-economic factor, the following were discovered during the study:

#### **I. Livelihoods/Education/Infrastructural development**

The 29% of the respondents' further trust that mining can bring significant social and economic benefits to their mining communities - Kanniya, Koakoyima, and Sahr Quee Town in the Tankoro chiefdom. But 13% of the respondents believe that mining will upset their livelihoods. However, 58% remained neutral; as they are not sure of the benefits or undesirable impacts the mining might cause in their communities. Walser and Limi's assumptions may be somehow correct about the positive and negative impacts of mining in developing nations like Sierra Leone. When they earlier observed that mining has made a constructive impact on the economy of many countries and, can be measured in relation to employment and income generation. But also perceived that these benefits do not manifest immediately (Walser 2000; Limi 2007).

Nevertheless, the most positive cases that the study discovered were linked to the expansion of local small and micro enterprises' activities and other support towards education. These include:

- Petty traders/businessmen/merchandise will benefit from sales made from their goods and services
- Construct roads, schools, houses, markets, Wells/borehole Pipe-borne water, and community centers
- Create employment opportunities for residents
- Provide scholarships for school students as well as college students in the affected communities

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- Support education through the provision of school materials like books, pens, and stationeries, together with refurbishing schools.
- Building standard classrooms, and awarding scholarships to students for higher learning
- Assist in the training of teachers to improve their teaching skills
- Provide health support to hospitals like beddings, drugs, and other material assistance.

However, 99% of the respondent in the three communities believed that there was no monitoring, management, and supervision of the company mining activities. This condition will certainly interrupt more activities like agriculture and plantations along with disrupting people's survivals. Yet, communities impacted by mining are habitually excluded from the mining earnings and benefit-sharing (Rutenge 2016; Sukri et al 2020).

Besides, a focus group discussion (FGD) was held as a result of the process's ability to provide thorough information about the environmental and regulatory issues. Six people were involved in the discussion. 3 Traditional leaders and 3 Youths were selected from the three affected communities (Kanniya Resettlement, Koakoyima and Sahr Quee Town). These groups were involved to provide a diversity of viewpoints on the subject. The FGD discussed the environmental and social impacts of mining in the affected communities. It was resolved that Koidu Holdings has planted trees and gave locals, tree seedlings to plant in their neighbourhoods in an attempt to protect the environment. The Koidu Holdings Company has dug some boreholes, mainly in Kanniya resettlement community, which served as a drinkable water, to help reduce the sternness of water crisis. It has similarly implemented other measures, such as repetitive watering of important roads inside the communities to reduce air pollution caused by increased dust release. Although much has to be done by the mining company according to the FGD to lessen the environmental impacts.

### 5.0 CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion

As a result, the study concluded that mining had a negative impact on the ecosystem. The study further discovered that the local communities where the mining activities are carried out suffer negative effects on the environment together with the society. Therefore, action must be taken now before social and environmental problems spiral out of hand. This is crucial because, despite numerous attempts and efforts, the effects of mining operations still present serious challenges, particularly for locals and, to a greater extent, the general public in the mining area.

#### 5.2 Recommendations

The following recommendations are given in light of the study's findings:

To reduce environmental harm and pollution, the government should equip the EPA and the Ministry of Mines and Mineral Resources together with agencies involved in mining supervision with the necessary resources to constantly gather fundamental environmental information. Also, to lessen the damaging environmental effects of mining in those communities, these organizations must enhance their monitoring efforts and implement legal obligations.

To ensure environmental compliance by the Koidu Holdings mining company and to participate in environmental governance, which might be accomplished by forming environmental oversight groups in mining communities. In mining peripheral communities, there should be efforts to raise awareness of environmental issues and provide environmental education in order to strike the right balance between development and economic growth and the need to maintain environmental standards for community life expectancy.

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## Examining the Performance of Perum Bulog Employees Padang Sidempuan City Branch Office



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**ABSTRACT:** The purpose of this study was to analyse: (1) The Effect of Leadership Style on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office; (2) The Effect of Work Motivation on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office; (3) The Effect of Leadership Style and Work Motivation on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office. The method in this study uses a quantitative associative approach, the number of samples in this study were 50 respondents by taking all employees. The data collection technique in this study used a questionnaire or questionnaire distributed to Perum Bulog employees at the Padang Sidempuan City Branch Office. Data analysis techniques using multiple linear regression, classical assumption test, t test, f test and coefficient of determination. Data processing in this study using SPSS 25.00 for windows. Based on the results of the study, it shows that the Leadership Style partially has a significant effect on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office. Then Work Motivation has a significant effect on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office. Leadership Style and Work Motivation simultaneously have a significant effect on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office.

**KEYWORDS:** Leadership Style; Work Motivation; Employee Performance.

### I. INTRODUCTION

Human resources are a very important part of the company in achieving its goals. The progress or decline of the company depends on the human resources it has. Qualified human resources will have a positive influence on the company through their good performance, but on the other hand, unqualified human resources will have an unfavourable influence on the company and even seem to hinder it.

The company must really pay attention to its human resources considering its huge role for the company through its performance, because it is one of the responsibilities of the company to pay serious attention to its human resources.

Sabrina, R. (2021) states that the main key in developing an organization effectively and efficiently lies in performance appraisal. According to Mangkunegara (2017) performance is the quality and quantity of work achieved by a person in carrying out his duties in accordance with the responsibilities given to him.

The company's human resources are not only employees but also leaders, therefore, leadership style affects employee performance, while employee motivation also affects employee performance itself.

Leadership style is a way for leaders to influence, direct, motivate, and control subordinates in a certain way, so that subordinates can complete tasks effectively and efficiently. (Siagian & Khair, 2018).

Besides the leadership style that can influence and be a factor in creating optimal employee performance, there are also other factors such as work motivation. Farisi, S., Irnawati, J. & Fahmi, M. (2020) explains that motivation is the willingness to expend the highest level of effort for company goals, which is conditioned by the ability to fulfil several individual needs. Based on the information above, motivation is related to enthusiasm, it also involves a person's feelings that are influenced by something that can be a reason for achieving a goal or desire.

Aruan, D. A. (2013) said that it is important for employees to have motivation at work in order to perform optimal work for themselves and the company, motivation will provide opportunities for employees to channel individual egos and strengthen employee commitment to the company, and of course improve employee performance.

With a good leadership style and motivation, employee performance will be better. As the findings Fernanda, R. (2016) that work motivation and leadership style affect employee performance.

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Perum Bulog (Perusahaan Umum Badan Urusan Logistik) is a food agency in Indonesia that takes care of certain food trading systems, to secure food supply. Perum Bulog has branch offices in various cities, one of which is the Padang Sidempuan City branch office.

Based on the results of an initial survey conducted at Perum Bulog Padang Sidempuan City Branch Office, it was found that employee performance was not optimal where services according to duties and functions had not been felt by the community at large, especially by farmers. This is related to the problem that the leadership style has not been able to increase employee motivation to work enthusiastically, even though the leadership has motivated employees to work, but because it lacks emphasis and sees the results of this encouragement, causing the work motivation of employees to not increase. Employee work motivation in Perum Bulog Padang Sidempuan City is less than optimal, it can be seen from some employees who are often late for work, work too casually or pay less attention to company targets and tasks.

## II. THEORETICAL FOUNDATION

### 1. Performance

According to Muis, M. R., Jufrizen, J., & Fahmi, M. (2018) Performance is the result of an employee's work during a certain period compared to various possibilities such as standards, targets / goals or criteria that have been determined in advance and agreed upon.

Then according to Saripuddin, J., & Handayani, R. (2018) states that performance is an activity or work process based on the ability to obtain the expected results. In contrast to the understanding conveyed by Arianty, N. (2014) He stated that performance is the result of work that can be achieved by a person or group of people in the organisation. In accordance with their respective authorities and responsibilities, in order to achieve the objectives of the organisation concerned legally, not against the law and in accordance with morals and ethics.

Lakoy, A. C. (2015) states that performance is a display of the overall state of the company during a certain period of time, which is the result or achievement that is influenced by the company's operational activities in utilising its resources. According to Mangkunegara (2017) performance is the result of work in quality and quantity that a person achieves in carrying out his duties in accordance with the responsibilities given to him.

Mangkunegara (2017) states that employee performance is influenced by three factors, namely:

1. Individual factors consisting of: Ability and skills, Background, Demographics.
2. Psychological factors consisting of: Perception, *Attitude Personality*, Learning, Motivation.
3. Organisational factors consisting of: Resources, Leadership style, Rewards, Structure, *Job design*.

According to Astuti, R., & Sari, I. (2018) there are several factors that affect the performance of an employee including the following:

1. Ability

Ability is a person's level of skill in doing something.

2. Compensation

Compensation is the reciprocity that a person gets in any form because that person has produced goods or services that are needed by others.

3. Training

Training is a process of teaching someone something repeatedly so that the person can do what is taught properly and correctly.

Performance is essentially what employees do or do not do. Employee performance is what affects how much they contribute to the organisation. Performance indicators according to Arismunandar, M. F., & Khair, H. (2020) are as follows:

1. Quality & Quantity

Quality is a measure of whether or not an employee's performance on something is good, while quantity is more about how much or how little an employee can do.

2. Timeliness

The definition of timeliness is doing something or waiting for something that is in accordance with what is expected or does not exceed the predetermined time limit.

3. Cost-effectiveness

The purpose of cost-effectiveness is to reduce the level of unnecessary expenditure without affecting the main objectives.

4. Surveillance

Supervision is a supervisory activity carried out by superiors so that the operational implementation of an institution can run properly.



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### 5. Relationships between colleagues

Coworker relations are interactions between two or more employees to facilitate the process of getting to know each other which has an impact on increasing the resulting performance.

## 2. Leadership Style

Retrieved from Ryani, P. (2019) Leadership style means attitude, movement, behaviour, beautiful attitude, gestures of good value, strength, ability to do good. As well as Hartanto, A. (2016) argues that leadership style is the ability to influence others through communication, both direct and indirect, with the intention of moving people so that with full understanding, awareness, and pleasure they are willing to follow the will of the leader.

Retrieved from Dirham (2019) Leadership style is an action of a leader to influence others, able to communicate clearly so that the planned goals can be achieved with good results. Then Astuti, W. (2008) states that leadership style is how a leader behaves in his leadership style so that it can influence employees to carry out their duties to the optimal level of achievement or performance.

While Nurjaya et al. (2020) stated that leadership style is a process of influencing in determining organisational goals, motivating follower behaviour to achieve goals, influencing to improve the group and its culture.

In an effort to influence an individual or group of individuals, Ryani, P. (2019) suggests four factors that influence leadership style, namely:

#### 1. Charisma

Providing a vision and mission, generating a sense of pride, gaining respect and trust.

#### 2. Inspiration

Communicate high expectations, use symbols to focus efforts, express important goals in a simple way.

#### 3. Intellectual stimulation

Can demonstrate intelligence, rationality, careful problem-solving.

#### 4. Paying attention to staff individually

Can show personal attention, treat employees individually, coach, advise.

Leadership style or *style of leadership* is the way a leader carries out his leadership function or carries out his management function in leading his subordinates. According to Mattayang, B. (2019) the types of leadership styles are as follows:

#### 1. Democratic Leadership Style

Democratic leadership style is an ability to influence others to be willing to work together in achieving predetermined goals in various ways or activities that can be carried out which are determined together between subordinates and leaders.

#### 2. Delegative Leadership Style

The delegative leadership style has the characteristics that the leader will rarely give directions, decision makers are left to subordinates, and members of the organisation are expected to solve all their own problems.

#### 3. Bureaucratic Leadership Style

This bureaucratic leadership style is characterised by the statement "Leading by the rules".

#### 4. *Laissez Faire* Leadership Style

This style will encourage members' ability to take initiative.

#### 5. Authoritarian Leadership Style

This style is a style of leader who has concentrated all decisions and policies that he wants to take from himself in full.

#### 6. Charismatic leadership style

The advantage of this charismatic leadership style is that it attracts people. They will be fascinated by his way of speaking that will arouse enthusiasm. Usually leaders with this personality style will be visionaries.

Meanwhile, according to Astuti, W. (2008) indicators of leadership style are:

#### 1. Pay attention to the needs of subordinates

The needs of subordinates in this case are recognition as part of a successful team, fair and equitable policies, comfortable work environment, career growth, training and quality of life.

#### 2. Empathy towards subordinates

Listen well to subordinates' conversations, accept subordinates' points of view, and be sensitive to subordinates' feelings.

#### 3. Create an atmosphere of mutual trust

Leaders and subordinates are open to each other in terms of work problems that are being experienced and provide solutions to each other.

#### 4. Have a friendly attitude

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Establish good communication, not arrogant, not arbitrary, willing to listen to the opinions of subordinates.

### 5. Fostering subordinate participation in decision-making

Leaders provide space for subordinates to participate in decision-making.

### 3. Work Motivation

Muhammad, M. (2016) explains that motivation is a change in energy within a person characterized by a drive that comes from a person to achieve goals. Then according to Emda, A. (2017) Motivation is a series of efforts to provide certain conditions, so that someone wants and wants to do something and if he doesn't like it, he will try to negate or avoid that feeling of dislike.

According to Saripuddin, J., & Handayani, R. (2018) Work motivation is a mental attitude or condition of a person where that person feels moved to do a job assigned to him, so that it can affect the ability and ability of employees to do work. While Bahri, S. & Nisa, Y. C. (2017) states that motivation is one of the things that affects human behaviour, motivation is also referred to as a driver, desire, supporter or needs that can make someone excited and motivated to reduce and fulfill their own impulses.

Retrieved from Paputungan, F. R. (2013) argued that motivation is a condition that moves employees who are directed to achieve organizational goals. Bachtiar, D. (2012) Bachtiar, D. (2012) stated that basically if the company wants to achieve optimal performance in accordance with the predetermined target, the company must motivate employees so that employees are willing and willing to devote their energy and thoughts to work. This means that if the motivation provided by the company is good, it will have a positive effect on employee performance.

Motivation is interpreted as a drive that comes from the soul and can then be implemented into behaviour towards achieving needs that provide satisfaction and reduce imbalance in a person. Then Mangkunegara (2017) states that motivation is a condition that moves employees to be able to achieve their goals and motives.

Hutahaeen, H. S. M. (2018) suggests that the purpose of work motivation is :

1. To foster motive, which is defined as a tendency to activity,
2. To foster *drive*
3. For self-adjustment, self-adjustment is said to satisfy motives.

Hutahaeen, H. S. M. (2018) suggests factors that influence motivation, namely:

1. *Need*
2. *Expectancy*
3. Interests.

Motivation or encouragement to work optimally is very decisive in order to achieve a goal, so company resources must be able to foster the highest possible work motivation.

According to Bahri, S. & Nisa, Y. C. (2017) the factors that influence motivation are:

1. Possibility to grow
2. Type of work
3. Do they feel proud to be part of the company they work for.

Mangkunegara (2017) states that the indicators of work motivation are as follows:

1. Hard work  
Have a burning passion and have the will and ability to achieve personal targets that are considered a little beyond their limits.
2. Future orientation  
Having a picture of the future that is realised in the form of implementing plans prepared by individuals to achieve predetermined goals.
3. Time utilisation  
Use time effectively and efficiently to get the most out of each job.
4. Task orientation and task seriousness  
Always adhere to the obligations given and strive to complete their duties to the best of their ability.
5. Relationship with colleagues  
Coworker relationships are interactions between two or more people to facilitate the process of getting to know each other, which results in increased motivation.

### Conceptual Framework

#### 1. The Effect of Leadership Style on Employee Performance

Leadership style plays a very important role in the formation of a new character in a company because leadership style is created to regulate, supervise, understand the conditions of subordinates, then decide on the next action by a company leader. Therefore, a company leader needs to do research so that it is not wrong in determining the style in leading a company, because if it is wrong

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in choosing a leadership style, what will happen is disharmony in the company. As a result, there will be ineffectiveness in working by human resources in the company and of course will result in non-optimal employee performance.

Based on the results of research conducted by Siagian, T. S., & Khair, H. (2018) that leadership style has a positive and insignificant effect on employee performance. The results of research conducted by Tirtayasa, S. (2019) stated that leadership style has a significant effect on employee performance.

Arianty, N. (2019) also stated that leadership has a significant effect on performance. While the results of research Trang, D. S. (2013) states that leadership style affects employee performance but is not significant. stated that leadership style affects employee performance but is not significant.

### **2. The Effect of Work Motivation on Employee Performance**

It is important for an employee to have good work motivation and high performance towards the agency where he works, especially in the midst of the phenomenon of employee welfare which is increasingly being improved and paid special attention by the state. Employees who have high motivation will have a significant contribution in determining whether an employee wants to give the best performance in the organization.

Based on research conducted by Saripuddin, J. & Handayani, R. (2018) which states that motivation affects employee performance. Followed by research conducted by Tirtayasa, S. (2019) stated that motivation has a positive and insignificant effect on employee performance variables.

Wahyudi (2019) stated that work motivation can improve employee performance. Jufrizen & Sitorus, T. S. (2021) stated that work motivation has a significant effect on employee performance. stated that work motivation has a significant effect on employee performance.

Meanwhile, with research conducted by Juniantara, I. W., & Riana, I. G. (2015) found that motivation has a positive and significant effect on employee performance. Likewise, research conducted by Permansari, R. (2013) found that partially motivation has a positive and significant effect on performance.

### **3. The Effect of Leadership Style and Work Motivation on Employee Performance**

In accordance with the previous description that based on previous research that leadership style and work motivation partially have an influence on employee performance. Thus it can be predicted that leadership style and motivation together can affect employee performance.

This has been known from research conducted by Fernanda, R. (2016) who found that work motivation and leadership style together have a significant effect on employee performance. Likewise with research Indriyati, E. S. (2017) which also found that leadership style and motivation together have a significant effect on employee performance. who also found that leadership style and motivation together have a significant effect on employee performance.

## **III. RESEARCH METHODOLOGY**

The approach in this research is to use associative and quantitative approaches. According to Juliandi et al. (2015) associative approach is a research approach where the researcher aims to analyse the problem that there is a relationship between a variable and another variable. According to Sugiyono (2015) quantitative research methods are methods used to examine a population or sample using statistics, with the ultimate goal of testing the truth of a previously established hypothesis.

According to Sugiyono (2018) population is a generalisation area consisting of: objects / subjects that have certain qualities and characteristics set by researchers to study and then draw conclusions. The population in this study were all employees at Perum Bulog Padang Sidempuan City Branch Office, totalling 50 people.

The sample in this study was determined based on the theory (Arikunto, S., 2012) if the population is less than 100 people, then the sample is taken as a whole, but if the population is greater than 100 people, then 10 - 15% or 20-25% of the population can be taken. Thus, the sample in this study used a total sampling technique of 50 permanent employees. The data collection techniques used are:

1. Questionnaire (Angket) , namely data by making a list of questions in the form of a questionnaire addressed to employees of Perum Bulog Padang Sidempuan City Branch Office using a Likert scale with a checklist form, where each question has 5 options.
2. Documentation data is studying existing documents in the company regarding a brief history of the company and the organisational structure and number of employees in the company.
3. Observation, is one of the data collection techniques by observing various problems that exist at Perum Bulog Padang Sidempuan City Branch Office to be used as one of the research materials.

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The analysis technique used in this research is Multiple Linear Regression analysis with the equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

(Juliandi et al., 2014) Where:

Y	= Performance
X1	= Leadership
style X2	= Work Motivation
$\beta_1, \beta_2$	= the coefficient of each variable
e	= Error Terms

### IV. RESEARCH RESULTS

#### Classical Assumption Test

Before going further into multiple linear regression, we first carry out a classic assumption test. The purpose of the classical assumption test is to see whether a variable is normal or not, this can be seen from the data distribution if a variable is normal, the data distribution is normal with the following criteria:

##### a. Data Normality

Data normality testing is carried out whether in the regression model, the independent variable and the dependent variable have a normal influence or not.

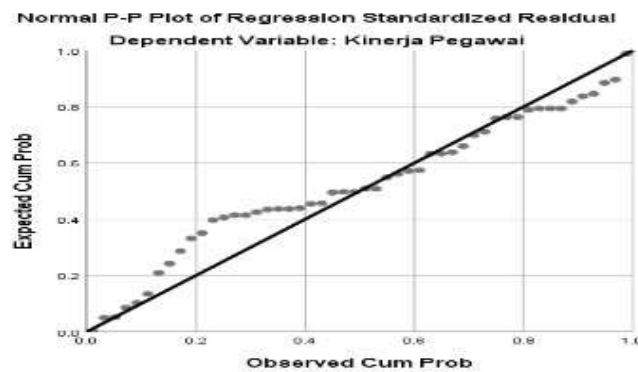


Figure 4. 1 Data Normality Test Results

Source: SPSS 25.00 Data Processing Results

Based on the normal p-plot graph shown in the picture above, the graph pattern is said to be normal because it looks like the points spread around the diagonal line and follow the direction of the line, it can be concluded that the regression model has fulfilled the normality test.

##### b. Multicollinearity Test

The multicollinearity test is used to test whether there is a strong relationship between the dependent variables.

Table 4. 1 Multicollinearity Test Results

Coefficients <sup>a</sup>			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Leadership Style	.991	1.010
	Work Motivation	.991	1.010

a. Dependent Variable: Employee Performance

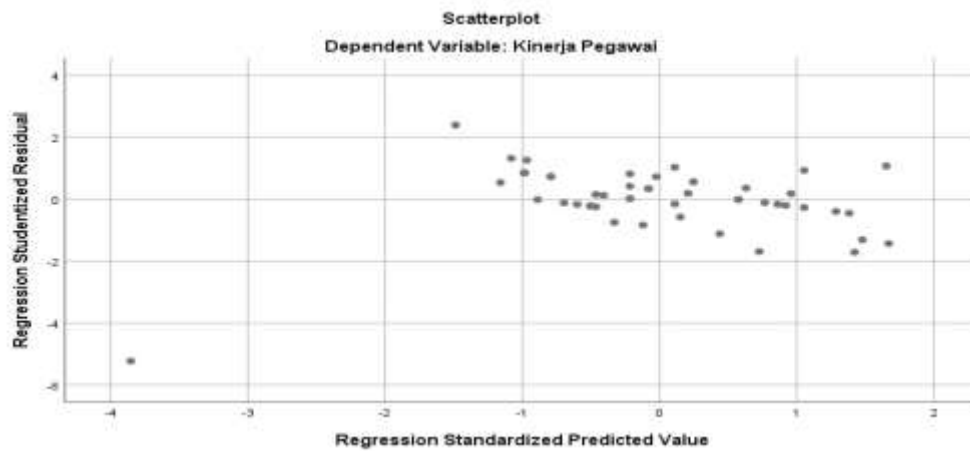
Source: SPSS 25.00 Data Processing Results (2022)

Based on table 4.12, it can be seen that the leadership style variable has a tolerance value of 0.991 > 0.10 and a VIF value of 1,010 < 5. The work motivation variable has a tolerance value of 0.991 > 0.10 and a VIF value of 1,010 < 5. From each variable has a tolerance value > 0.10 and a VIF value < 5, it can thus be concluded that there are no symptoms of multicollinearity in this study.

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### C. Heteroscedasticity Test

The heteroscedasticity test is used to test whether in the regression model, there is an inequality of variance and residuals from one observation to another. A good model is that heteroscedasticity does not occur. The basis of analysis is that there is no clear pattern, and the points spread above and below the number 0 on the Y axis, then there is no heteroscedasticity, while if there is a certain pattern, such as points that form a certain regular pattern, then it indicates that heteroscedasticity has occurred.



**Figure 4. 2 Heteroscedasticity Test Results**

Source: SPSS 25.00 Data Processing Results

From figure 4.2 above, it can be seen that the points spread randomly, and do not form a clear regular pattern, and are scattered both above and below the number 0 on the Y axis. thus "no heteroscedasticity" in the regression table. A good model is that no heteroscedasticity occurs.

### Multiple Linear Regression Analysis

The data analysis technique used to determine the effect of the independent variable on the dependent variable. This study uses two independent variables, namely leadership style and work motivation and has one dependent variable, namely employee performance.

**Table 4. 2 Multiple Linear Regression Analysis**

Coefficients <sup>a</sup>						
Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.431	7.558		6.805	.000
	Leadership Style	.130	.112	.150	2.163	.001
	Work Motivation	.575	.170	.437	3.391	.002

a. Dependent Variable: Employee Performance

Source: SPSS 25.00 Data Processing Results

From table 4.13 above, it can be seen that the linear regression equation model is as follows:

$$Y = 51.431 + 0.130X_1 + 0.575X_2$$

Description:

1. The constant value is 51.431, indicating that the independent variables, namely leadership style and work motivation, are constant and have not changed (equal to 0), so the constant is 51.431.
2. The leadership style regression coefficient value is 0.130, indicating that if the leadership style increases, it will increase the leadership style constant on performance by 0.130%.
3. The regression coefficient value of work motivation is 0.575, indicating that if work motivation increases, it will increase the constant work motivation on performance by 0.575%.

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### Hypothesis Testing

#### a. Test t (partial)

The T test is conducted to test whether the variable (X) partially or individually has a significant relationship or not to the dependent variable (Y). as for the formula explained is reject  $H_0$  if the probability value  $<$  significant level of 0.05 ( $\text{sig} < \alpha$  0.05) means that there is a significant relationship between the independent variable (X) and the dependent variable (Y). Reject  $H_0$  if the probability  $>$  significant level of 0.05 means that there is no significant relationship between the independent variable (X) and the dependent variable (Y).

**Table 4. 3 Test t (Partial)**

Coefficients <sup>a</sup>						
Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.431	7.558		6.805	.000
	Leadership Style	.130	.112	.150	2.163	.001
	Work Motivation	.575	.170	.437	3.391	.002

a. Dependent Variable: Employee Performance

Source: SPSS 25.00 Data Processing Results

#### 1. The Effect of Leadership Style on Employee Performance

The Effect of Leadership Style (X1) on Employee Performance (Y) Based on table 4.14 above, the tcount for the leadership style variable is 2.163 for an error of 5% for a 2party test and  $dk = n-k-1$  ( $50-2-1 = 47$ ), obtained t table 1.678. If  $t_{\text{count}} > t_{\text{table}}$  then there is a significant influence between X1 and Y, and vice versa if  $t_{\text{count}} < t_{\text{table}}$  then there is no significant influence between X1 and Y, in this case  $t_{\text{count}} = 2,163 > t_{\text{table}} = 1,678$ . This means that there is an influence between leadership style and employee performance at Perum Bulog Padang Sidempuan City Branch Office.

#### 2. The Effect of Work Motivation on Employee Performance

Based on table 4.14 above, the tcount for the work motivation variable is 3.391 for an error of 5% for a 2-party test and  $dk = n-k-1$  ( $50-2-1 = 47$ ), obtained t table 1.678. If  $t_{\text{count}} > t_{\text{table}}$  then there is a significant influence between X2 and Y, and vice versa if  $t_{\text{count}} < t_{\text{table}}$  then there is no significant influence between X2 and Y, in this case  $t_{\text{count}} = 3.391 > t_{\text{table}} = 1.678$ . This means that there is a significant influence between work motivation on employee performance at Perum Bulog Padang Sidempuan City Branch Office.

#### b. F Test (Simultaneous)

This F (Simultaneous) test is conducted to determine whether the independent variables together have a significant effect on the dependent variable and at the same time test the second hypothesis. Based on the results of SPSS 25.00 data processing, the following data can be obtained:

**Table 4. 4 F Test (Simultaneous)**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	90.335	2	45.167	6.875	.002 <sup>b</sup>
	Residuals	308.785	47	6.570		
	Total	399.120	49			

a. Dependent Variable: Employee Performance

b. Predictors: (Constant), Work Motivation, Leadership Style

Source: SPSS 25.00 Data Processing Results

From the results of table 4.15 above, the f value is 6.875 then the sig value is 0.002.

Based on the results of the F (Simultaneous) test above, it is obtained that the  $f_{\text{count}}$  for the leadership style and work motivation variables is 6.875 for the entire test sample of 2 variables and  $dk = n-k-1$  ( $50-2-1=47$ ), obtained  $f_{\text{table}} 3.200$ . If  $f_{\text{count}} > f_{\text{table}}$  then there is a significant influence between X1 and X2 on Y, and vice versa if  $f_{\text{count}} < f_{\text{table}}$  then there is no significant effect between X1 and X2 on Y. In this case  $f_{\text{count}} = 6.875 > f_{\text{table}} = 3.200$ .

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### Test Coefficient of Determination (R-Square)

Identification of determination ( $R^2$ ) serves to determine the significance of the variable, the coefficient of determination ( $R^2$ ) must be sought. The coefficient of determination shows the magnitude of the contribution of the independent variable to the dependent variable. The greater the coefficient of determination, the better the ability of the independent variable to explain the dependent variable. If the determination ( $R^2$ ) is greater (close to one), it can be said that the influence of the independent variable is large on the dependent variable. This means that the model used is stronger to explain the effect of the independent variables studied on the dependent variable. The value of the coefficient of determination can be seen in the table below:

Table 4. 5 Determination Test

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.676 <sup>a</sup>	.526	.493	35.563
a. Predictors: (Constant), Work Motivation, Leadership Style				
b. Dependent Variable: Employee Performance				

Source: SPSS 25.00 Data Processing Results (2022)

Based on table 4.16 above, it can be seen that the value of R square is 0.526 which means 52.6% and this states that the variables of leadership style and work motivation have an influence on employee performance by 52.6% and the remaining  $100\% - 52.6\% = 47.4\%$  which means 47.4% is influenced by factors that are not raised in this study. From this statement we can see that in this study the independent variable is very influential on the dependent variable.

## DISCUSSION

The findings below obtained by researchers after conducting various tests and data processing will be seen how they match the theories that have been previously disclosed and also research conducted by others before. The following is a more detailed explanation of the results of the research conducted by the researcher:

### 1. The Effect of Leadership Style on Employee Performance

Based on the results of testing the effect of leadership style on employee performance, it is shown by the tcount value which is smaller than the ttable, namely  $t_{count} = 2.163 > t_{table} = 1.678$  and the probability value of t, namely sig, is 0.001 while the previously set  $\alpha$  significant level is

0.05, the sig value is  $0.001 < 0.05$  so  $H_0$  is rejected. From this explanation it can be concluded that partially there is a significant influence between leadership style and employee performance.

In other words, leadership style has a significant effect on employee performance at Perum Bulog Padang Sidempuan City Branch Office. According to Dirham (2019) Leadership style is an action of a leader to influence others, able to communicate clearly so that the planned goals can be achieved with good results. The results of this study are in accordance with previous research conducted by Tirtayasa, S. (2019), & Arianty, N. (2019) which states that leadership style has a significant effect on employee performance.

### 2. The Effect of Work Motivation on Employee Performance

Based on the results of testing the effect of leadership style on employee performance, it is shown by the tcount value which is greater than the ttable, namely  $t_{count} = 3.391 > t_{table} = 1.678$  and the probability value of t, namely sig is 0.002 while the previously set  $\alpha$  significant level is 0.05, the sig value of  $0.002 < 0.05$  so  $H_0$  is rejected. From this explanation it can be concluded that partially there is an influence and significant between work motivation and employee performance at Perum Bulog Padang Sidempuan City Branch Office. In other words, work motivation has a

Significant effect on employee performance at the Perum Bulog Padang Sidempuan City Branch Office. Work motivation is important in improving performance, because people who have high work motivation will try their best so that their work can succeed as well as possible in order to achieve company goals in accordance with established procedures. (Rozalia et al., 2015).

The results of this study are in accordance with the results of previous research conducted by Jufrizen & Sitorus, T. S. (2021) Saripuddin, J. & Handayani, R. (2018), Juniantara, I. W., & Riana, I. G. (2015) & Permansari, R. (2013) stated that work motivation has a significant effect on employee performance.

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### 3. The Effect of Leadership Style and Work Motivation on Employee Performance

In this study, leadership style and work motivation have an influence on employee performance at Perum Bulog Padang Sidempuan City Branch Office. Based on the F test table, it is obtained that  $f_{hitung} = 6.875 > f_{tabel} = 3.200$  with a significant level of 0.002 while the previously set  $\alpha$  significant level is 0.05, then the sig value of  $0.002 < \alpha 0.05$  so that  $H_0$  is rejected. Based on this, it can be concluded that Leadership Style and Work Motivation simultaneously have a significant effect on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office.

Then it can be seen from the results of the determination test where the R square value is 0.526 or equal to 52.6% of the percentage value that affects the independent variable (Leadership Style and Work Motivation) on the dependent variable (Employee Performance) while the remaining 47.4% is influenced by other factors not examined in this study.

The results of this study are in accordance with previous research conducted by Fernanda, R. (2016) & Indriyati, E. S. (2017) which found that work motivation and leadership style together have a significant effect on employee performance. who found that work motivation and leadership style together have a significant effect on employee performance.

### V. CONCLUSIONS

Based on the results of the research and discussion that has been stated previously, the following conclusions can be drawn:

1. Partially, the leadership style has a significant effect on employee performance at Perum Bulog Padang Sidempuan City Branch Office.
2. Partially, work motivation has a significant effect on employee performance at Perum Bulog Padang Sidempuan City Branch Office.
3. Simultaneously, Leadership Style and Work Motivation have a significant influence on Employee Performance at Perum Bulog Padang Sidempuan City Branch Office.

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## The Role of Economic Resilience of Tourism Families during the Pandemic Covid-19



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**ABSTRACT:** The pandemic Covid-19 had an impact on the entire economy in Indonesia, one of which is the Province of Bali with the advantages of tourism destinations which have now experienced a decline in tourists due to the Covid-19 pandemic with the policy of closing international airports, adjusting regions and policies not to travel between regions. The tourism sector is the sector most affected by the pandemic Covid-19, an estimated 75 million jobs in the tourism sector have experienced shocks and the tourism industry is at risk of losing turnover of more than 2.1 trillion dollars. Domestic tourist visits have also decreased, Indonesian people are reluctant to travel, because they are worried about the impact of the co-19 pandemic. The pandemic Covid-19 pandemic had a major impact on all aspects of life, especially the tourism sector due to difficulties in travel, cancellation of major events and reluctance to travel internationally and domestically. The economic resilience of tourism actors in Badung Regency, Bali Province has now become a serious problem, which only relies on one big sector, namely tourism. Badung Regency, Bali Province only relies on foreign visits, so that when the international airport is closed, people working in the tourism sector experience a decrease in economic resilience, starting from decreased income to several tourist attractions and tourism businesses in Badung Regency, Bali Province being closed. The research technique used is the literature review method, which uses various related scientific journals, especially those that discuss economic resilience during the pandemic Covid-19, to collect the information needed for research. The findings of this study indicate that the role of family resilience in tourism actors during a pandemic supports the survival of tourism actors. Economic resilience relates to the maintained ability of the economy to recover from the effects of adverse shocks. Surviving the downturn is not enough. Efforts are needed to find out the strategies used to overcome the impact of these shocks.

**KEYWORDS:** tourism family, economic resilience, pandemic Covid-19

### I. INTRODUCTION

The national development paradigm with a family approach is one of the approaches currently chosen because the family is a place for the socialization of values and norms. This approach is holistic, synergistic, interdependence in various social, economic, psychological and cultural aspects. National development policies must start from family resilience, because the family is the smallest organization in society. National defense is a conception of defense that is universal, and aims to defend the life of the nation and state of Indonesia which is independent and sovereign based on one's own strength (Department of Defense of the Republic of Indonesia, 2008). The family as the smallest social system has an important role in achieving the welfare of the population which is the goal of development. The family is the first social environment that introduces love, religious morals, social culture and so on. The family is the main defense that can ward off various negative influences from the existing social dynamics. The negative influence caused by the interaction between external and internal dynamics in a community that interacts with other social systems is expected to be overcome by a family that has strong family resilience. Measuring family resilience that can describe the resilience of families in Indonesia in counteracting various negative impacts that come from within the community and from outside the community is a very urgent thing to do. The family is a competitor to measure and improve national development, one of the goals of family resilience policy is to increase family welfare. Improved family welfare has the potential to strengthen family resilience. Family welfare is included in one of the components of family resilience, namely from an economic perspective.

Economic resilience relates to meeting consumption needs, namely the production, distribution and consumption of goods and services in improving the standard of living of individuals and groups (Marlinah, 2017). Family economic resilience is

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the persistence and strength of a family in facing various challenges, threats, and obstacles as well as obstacles both external and internal, directly or indirectly for the family economy (Lusmino, 2016). Economic resilience is the condition of people who have access to adequate food, both people and groups who maintain their food at all times, both physically and economically (Barrett, 2010; Carletto, 2013; Pinstруп, 2009). The family is the smallest unit of a country, strong economic resilience in a family will create a strong economic foundation for the country (Wulandari, 2017). The Covid-19 pandemic that hit the world including Indonesia has caused various negative impacts on life (Darmawan, Miharja, Waluyajati, & Isnaeniah, 2020; Darsono, Rohmana, & Busro, 2020; Qadri, 2021; Tesarik, 2020). In the economic aspect, the impact of the Covid-19 pandemic can be seen from a macro and micro perspective. From a macro perspective, the economic impact can be seen from the decline in the level of national GDP. Data based on the Central Statistics Agency (BPS) report, Indonesia's gross domestic product (GDP) in the third quarter of 2020 was minus 3.49 percent (year on year/yoy (Fauzia, 2020)). This was caused by the decline in people's purchasing power due to Large-Scale Social Restrictions (PSBB) in various regions of Indonesia (Thorik, 2020). Meanwhile, on a micro level, the impact of the Covid-19 pandemic on the economy hit the family's economic resilience (Shahreza & Lindiatie, 2021).

The Covid-19 pandemic has had an impact on the entire economy in Indonesia, one of which is the Province of Bali with the advantages of tourism destinations which have now experienced a decline in tourists due to the Covid-19 pandemic with the policy of closing international airports, adjusting regions and policies not to travel between regions. The Indonesian economy on an annual basis (y-o-y) in the second quarter of 2020 grew negatively (shrink or contracted) -5.32 percent, experiencing a decline compared to the previous quarter which recorded positive growth of 2.97 percent. Bali Province experienced a decrease of -10.98 percent. The consumption component for the 2020 period, Bali Province was -4.24 percent, lower than the previous quarter which was 2.25 percent. All components of consumption grew contractively, namely private consumption in line with weakening purchasing power, as well as government consumption in line with declining revenues from the tourism sector and budget reallocations for handling the Covid-19 pandemic (Bank Indonesia, 2020).

Economic resilience is very vulnerable to shocks (shocks) that can disrupt family survival. Shocks do not only come from the economic side but also from various sectors that impede or prevent families from fulfilling their various needs. One form of this shock is the occurrence of the Covid-19 pandemic which has a negative impact on health and also on the economic conditions of the community. The Covid-19 virus pandemic has affected all people in the world, both the informal and formal sectors, the rich and the poor alike, causing many countries to experience a recession (Handayani, 2020). Physical distancing and social distancing to prevent the spread of the Covid-19 pandemic has resulted in the shaking of the community's economy, especially in families (Apriyanti, 2020). The stay at home policy for a long time caused workers with daily wages to decrease in income. All sectors were affected by the economic downturn due to the Covid-19 pandemic (Irawaty, 2020). This phenomenon is concerning considering that the weak economic resilience of families in surviving the Covid-19 pandemic has the opportunity to cause new problems, namely poverty, mental health problems, family violence, crime, malnutrition and others (Okezone.com, 2020). Physical distancing and social distancing which are enforced for the handling and prevention of Covid -19, have an impact on limiting human activities which cause disruption to people's economic activities. Many heads of families have lost their source of income due to layoffs. The domino effect of this condition is the threat to family survival. No income means reduced family resources. This forces families to look for strategies to survive the impact of shocks.

The tourism sector is the sector most affected by the Covid-19 pandemic, an estimated 75 million jobs in the tourism sector have experienced shocks and the tourism industry is at risk of losing turnover of more than 2.1 trillion dollars (Skare, 2020). Domestic tourist visits have also decreased, Indonesian people are reluctant to travel, because they are worried about the impact of the co-19 pandemic (Kartiko, 2020). Sugihamertha (2020), the Covid-19 pandemic has had a major impact on all aspects of life, especially the tourism sector due to travel restrictions, cancellation of large events and reluctance to travel internationally and domestically. Travel restriction policies, namely cancellations, reducing flight frequency, and closing hotels have reduced tourism supply and demand (Christian, 2020). The decline in visits by domestic and international tourists has left the hotel business in a state of flux between the loss of business potential and the uncertainty over when the pandemic situation will end (Nuruddin, 2020). As many as 281 hotels in Bali were closed due to Covid-19 or around 55 percent of the number of hotels in Bali affected by the pandemic (PHRI, 7 April 2020).

Badung Regency, Bali Province, is the tourism area most affected by the Covid-19 pandemic. The economic resilience of tourism actors in Badung Regency, Bali Province has now become a serious problem, which only relies on one big sector, namely tourism. Badung Regency, Bali Province only relies on foreign visits, so that when the international airport is closed, people working in the tourism sector experience a decrease in economic resilience, starting from decreased income to several tourist attractions and tourism businesses in Badung Regency, Bali Province being closed. This amount consists of 30 tourist attraction units, 281 accommodation tourism business units, 353 restaurant tourism business units and 416 travel agency business units. The government's recommendations regarding physical distancing, people's anxiety in their activities and a decrease in people's

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consumption power presumably make the economic sector unenthusiastic. Not a few business actors have temporarily closed their businesses and even permanently. In addition, the tourism business world experiences difficulties in financing its operations because there is no income (Jennifer, 2020). All tourist activities are closed, the streets are usually always busy with tourists scattered in all corners of the Badung Regency area now it is quiet, only a few tourists are seen still hanging around. Activities outside the homes of residents of Badung Regency, Bali Province, have greatly reduced except for those who really have a need to go out. Tourist actors who have so far depended on tourism must now find new jobs to carry on their lives during the Covid-19 pandemic.

So far, the tourism sector is a labor-intensive sector that absorbs a lot of labor (Sanaubar, 2017). Some businesses have gone out of business or made production cost efficiencies by reducing the number of workers, adopting shift work policies, laying off some workers or cutting salaries/wages. Policies of social distancing, self-isolation and travel restrictions have led to a reduction in the workforce across all sectors of the economy and caused many jobs to be lost (Nicola, 2020). The Covid-19 pandemic has an impact on tourism actors, namely termination of employment (PHK), work from home, temporary layoffs due to no tourists visiting Bali. In Badung Regency, 28,609 people were laid off, and 631 people were laid off. Badung Regency tourism actors as the center of tourism destinations most affected by the Covid-19 pandemic. Then followed by the City of Denpasar as many as 8,074 were laid off and 338 were laid off. Many companies have decided to lay off their workers for reasons of the financial crisis and company efficiency (Dharmawan, 2021). Changes in the behavior of the people of Badung Regency, Bali Province, especially tourism actors, namely in the hotel, food and beverage sector and travel agents who cannot work so that they have no income become swerved doing any work to survive.

The decline in the tourism sector in Badung Regency, especially in downtown areas such as Legian and Kuta, is becoming a problem, where many hotels, restaurants/cafes and shophouses have been closed due to the lack of visitors due to the Covid-19 pandemic. The large number of layoffs resulted in a shift in people working in urban areas of Badung Regency, now shifting to rural areas. This phenomenon occurs because there are no more jobs in the city, so tourism actors return to their respective hometowns. The Covid-19 pandemic has resulted in the movement of residents from cities to villages, this is because there is no more job land in urban areas, so villages are now an alternative during the Covid-19 pandemic.

Rural communities take advantage of the rice fields they have to work on again when they are no longer dependent on the tourism sector. People choose to return to their hometowns because the costs and lifestyle of people in rural areas are relatively simpler compared to cities. The shift of urban to rural communities in Badung Regency has caused problems of economic resilience in both urban and rural areas. Couples living in rural areas face economic pressures that have implications for marriage outcomes, including economic tensions, low levels of education, large number of family members, and low husband's income (Higginbotham, 2009). Bali's economic downturn due to the pandemic has its roots.

The government of Badung Regency has taken several ways to restore the rural economy, one of which is to encourage the agricultural sector in a broad sense, including food agriculture, plantations, horticulture so that it will create economic independence for the community. Economic resilience in rural areas is stronger, because in villages there is more towards agricultural production to meet the needs of the community. Rural economic resilience is realized from the existence of village funds. Village funds are managed by the village government to be distributed to village communities through Direct Cash Assistance (BLT), social assistance and others. Village funds are used and village-owned enterprises (BUMDes) are required to be innovative because BUMDes have a strategic role as a driving force for the village economy. The Village Cash Labor Intensive Program (PKTD) means that all work activities funded by village funds must make the maximum use of the workforce in the village concerned. The priority workers are workers from poor families, unemployed workers, new unemployed workers in villages (Bhirawa Online, 2020). Based on this background, the researcher is interested in conducting research on the economic resilience of families involved in tourism in Badung Regency, Bali Province.

## II. METHOD

This work was written using the method of a literature review. This article will illustrate the role of tourism family economic resilience using a systematic, explicit, and repeatable method for identifying, evaluating, and synthesising research results and ideas that have been produced by researchers and practitioners in the form of explanations or discussions of theory of a finding or research topic. According to Okoli & Schabram (2010), a literature review is conducted to provide a theoretical framework for research that will be carried out in an effort to examine the depth or breadth of existing research on a topic to be studied. This approach also understands the outcomes of past study while responding to essential questions.

### III. RESULT AND DISCUSSION

#### A. Family Concept

Family development is one of the national development issues with an emphasis on the importance of strengthening family resilience. Juridically, Law Number 10 of 1992 concerning Population Development and Prosperous Family Development states that family resilience functions as a tool to measure how far the family has carried out its roles, functions, duties and responsibilities in realizing the welfare of its members. The important role of the family is stated in the Government Regulation of the Republic of Indonesia Number 21 of 1994 concerning the Implementation of Prosperous Family Development. This government regulation very clearly states that the family as the smallest unit in society has a very important role in national development. The quality of the family needs to be fostered and developed so that it becomes a prosperous family and becomes an effective human resource for national development. Law Number 52 of 2009 concerning Population Development and Family Development states that efforts to increase family resilience and welfare need to be considered to realize balanced population growth and quality families.

Family is a concept that has a broad and diverse understanding and scope. The family, in the context of sociology, is considered as a social institution which is also a social system that exists in every culture. As the smallest social institution, the family is a group of people who are related by marriage, descent, or adoption and live together in an ordinary household (Zastrow, 2006). Meanwhile, the family is also defined as the smallest social unit in society whose members are bound by marital relations (husband and wife) and blood relations (biological children) or adoption (adopted/adopted children) (Sanrock, 2003). From these two definitions of family, it can be concluded that the family is the smallest social unit/institution/system in society consisting of a group of people on the basis of marriage, blood ties, or adoption who live together in a household. In general, families have 4 (four) characteristics, namely:

- a) The family is made up of several people united in a bond such as marriage, blood relationship, or adoption
- b) Family members live and live together in a place or building under one roof in the composition of one household
- c) Each family member interacts, communicates and creates social roles for each member such as: husband and wife, father and mother, sons and daughters, brothers and sisters and so on
- d) The relationship between family members is a representation of efforts to maintain shared cultural patterns obtained from the general culture in society.

In the context of laws and regulations, family is defined as the smallest social unit in society consisting of: husband and wife; husband, wife and children; father and son; or mother and child (Law Number 52 of 2009 Concerning Population Development and Family Development). In addition, the family has 8 (eight) functions, as referred to in Government Regulation (PP) Number 21 of 1994, which includes the function of fulfilling physical and non-physical needs, namely: religious function; socio-cultural function; love function; protection function; reproductive function; socialization and educational functions; economic function; and environmental development function. In relation to measuring the level of family resilience, the family concept used will be endeavored to refer to the applicable laws and regulations.

#### B. The Concept of Family Resilience

In Law Number 52 of 2009 concerning Population Development and Family Development, namely in article 1 paragraph 11 it reveals that family resilience is described as a family that has expertise and strength and has material physical capacity to live independently and develop itself and can improve welfare and birth happiness and mind so that his family can live in harmony. Family resilience implies the ability of a family to develop itself so that it lives in harmony, prosperity and happiness both physically and mentally. In another view, family resilience includes the family's ability to manage resources and problems to achieve prosperity, the ability to survive and adapt to dynamically changing conditions and have a positive attitude towards various challenges in family life (Walsh, 2006). Family resilience can be achieved by a family if it fulfills several aspects, including: (1) physical resilience, namely meeting the needs for food, clothing, shelter, education and health; (2) social resilience with regard to application of religious values, effective communication and family integration; (3) psychological resilience is related to the ability to overcome non-physical problems, how to control emotions and positive self-concept and a sense of caring among family members (Sitepu, 2016).

Family resilience (family strength or family resilience) is a family that has adequate and sustainable conditions in gaining access to income and resources in order to meet their basic needs. These needs include food, clean water, health services, educational opportunities, housing, time to be actively involved in community activities and social integration. Family resilience includes tenacity, toughness and physical, material and mental abilities possessed by the family so that it can face the dynamics of family dynamics and live independently. Family resilience includes family efforts to achieve prosperity by using the resources they have and in overcoming the problems they face (Sunarti, 2001). Family resilience is also defined as the family's ability to ward off or protect itself from various problems or threats to life both coming from within the family itself and from outside the family such as the environment, community, society and the country. Family resilience is a tool to measure family achievement in carrying out

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its roles, functions and responsibilities in realizing the welfare of its members. The level of family resilience is determined by the behavior of individuals and society. Individuals and families who have good knowledge and understanding of family resilience will be able to survive changes in the structure, function and role of the family that change according to developments in information and communication technology. Individuals and families who are able to survive environmental changes have the potential to have strong family resilience.

Family resilience is a measure of a family's ability to meet basic needs and the family's ability to carry out productive activities. Family resilience aims to improve family welfare and independence. Good family resilience is supported by good non-physical resources, good problem-solving mechanisms within the family and the family's ability to meet the family's social needs. Family resilience shows the condition of a family that has tenacity and toughness and contains physical and material capabilities to achieve an independent life and is able to develop oneself and the family to live in harmony in improving well-being, happiness both physically and spiritually. The pattern of family resilience in society is expected to determine actions, policies and programs to increase the ability of families to meet basic needs and the ability of families to carry out productive activities, so that the quality of human life can be improved. According to Sunarti (2001), there are 5 (five) indicators that describe the level of resilience of a family, namely:

- a) There is an attitude of serving one another as a sign of nobility
- b) There is intimacy between husband and wife towards a good quality marriage
- c) There are parents who teach and train their children with various creative challenges, consistent training, and developing skills
- d) The existence of a husband and wife who lead all family members with full of love
- e) There are children who obey and respect their parents.

In a broader context, family resilience is identified with social resilience because the family is the smallest unit in the social system. BPS defines social resilience as the result of social dynamics on a local and global scale.

### C. Theory of Family Economic Resilience

Resilience comes from the Latin word "Resilire" which means to jump back related to one's ability to recover quickly from the effects of the source of the problems experienced. Family economic resilience is a condition and ability that allows families to recover and rise from sources of problems in the economic aspect (Briguglio, 2006). Economic resilience is not only about how families are able to survive adversity in the economic field, but also about how to increase family income (Center for Local Economic Strategies, 2016). According to the Bank of International Settlements (BIS), family economic resilience is the ability of families in the economic field to recover quickly from adverse shocks and problems that have an impact on financial well-being (Bank of International Settlements, 2016). Family economic resilience is a plan for family decision-making to survive and create new conditions when an economic crisis occurs through environmental observation, long-term planning based on available resources, implementation, evaluation and control in order to achieve the goal of achieving a decent and independent life (Amalia, 2020). Family economic resilience is the family's ability to balance income and expenses related to the purchase of goods and services as well as the need for money needed in the family (Doriza, 2015). Family economic resilience can be seen if a family can meet the requirements based on predetermined indicators of family economic resilience (Hasanah, 2015). Indicators of family economic resilience can also be a reference for families to be able to live a decent, independent life and be resistant to economic threats and crises.

According to the Ministry of Women's Empowerment and Child Protection, indicators of family resilience have five dimensions, namely 1) availability of housing; 2) have monthly income; 3) sufficient financing for children's education; and 4) have family financial security (savings), 5) have health insurance. (Ministry of Women's Empowerment and Child Protection of the Republic of Indonesia, 2016). Meanwhile, the Australian Department of Family and Community Services says that indicators of family economic resilience are assets and liabilities (Department of Family and Community Services, 2000). Community economic resilience is the condition of people who have access to adequate food, both people and groups are able to maintain their food at all times, both physically and economically (Barrett, 2010; Carletto, 2013; Pinstруп, 2009).

## IV. CONCLUSION

One component forming durability family is the fulfillment of economic resilience family. Family economic resilience is basic fulfillment of physical needs, namely material. If physical needs are met then it will have the potential to meet needs non material or psychological. Economic factors be the basis for the realization of family resilience. Family endurance and welfare must be go hand in hand. If the family is prosperous then will be potentially large on increasing resilience family. Family welfare can be measured through family economic resilience fulfillment of physical needs ( away, food, housing, education and health ). Dimension economic resilience is elaborated through four variable; and seven indicators, among them are as follows: (1) home ownership as

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family residence; (2) total income family as a measure of the adequacy of fulfillment family needs; (3) education financing children to measure family abilities within finance children's education and shave continuity of children's education; (4) savings or family savings as collateral family finance and family health insurance (Sitepu, 2016). Family economic resilience will certainly affect psychological endurance and social security. Psychological endurance can fulfilled if economic or physical resilience is met, feeling comfortable and not worried about the future is the fulfillment of non-physical needs or psychological so that it can build emotions that positive. Social resilience also goes hand in hand with social security where the level of integrity is to families will grow if needed economy fulfilled.

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## Interrelation of the Psychomotor System and the Cognitive Relational Process on Academic Performance in People with Autism Spectrum Disorder



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**SUMMARY:** Autism Spectrum Disorder (ASD) is a highly heterogeneous specific feature of neurodevelopment, whose general characteristics are defined by two basic dimensions: 1) deficits of communication and social interaction and 2) restrictive and stereotyped behaviours. Both dimensions are complemented by empirical evidence of the highly significant relationships of a predictive kind with the psychomotor functioning, which becomes most evident over development. Just, this research tries to answer to the following general goals: 1) examine the application of specific programs relating to development of basic psychomotor skills in students with several levels of ASD, age and sex, and 2) delimit the incidence of cognitive relationships between the concepts and learning categories.

A total of 99 students have participated in this study, distributed according to ASD level, age and sex. Data have been analysed through the Univariate ANOVA Between-Subjects Effects Test. Results show that both the intersection of psychomotor and cognitive variables (critical sig: .00), as well variables separately (psychomotricity: .00, and relationship: .00), significantly affect to academic performance of students with ASD. Therefore, it can be concluded that relational cognitive components and psychomotor development are essential to facilitate the development of learning in people with ASD, whose  $R^2$  of explicative variance is significantly high: .913, being the adjusted  $R^2$  level: 86.3%. The influence of the fixed variables interactions: ASD level, age and sex have also been studied.

**KEYWORDS:** Autism Spectrum Disorder. Psychomotricity. Perceptive- Cognitive- Nodal Relationship. Conceptual and Categories. Academic Performance.

### INTRODUCTION

ASD is a highly heterogeneous specific feature of neurodevelopment, whose general characteristics are defined by two basic dimensions, related to communication and social interaction needs and restrictive and stereotyped behaviours with different levels of intensity (American Psychiatric Association (APA), 2013) y World Health Organization (WHO), 1993). ASD prevalence reaches one individual to every 59- 54 birth people (Baio, 2018; Kogan et al., 2018; Maenner et al., 2020), while the etiological explicative components are very diverse and multifunctional nature, which include, both to etiological features associated with specific genetic groups, as well as relating to neurophysiological processes and/or environmental contexts.

Indeed, both dimensions delimit the diagnostic specificity of ASD, but this hypothesis is complemented by highly contrasted currently empirical evidence, regarding the presence of a strong significant predictive association of both dimensions with psychomotor fine and gross functioning, which is most visible with along development (Bedford, Pickles & Lord, 2016; Johnson, 2017). These kindnesses have led to characteristic symptomatic whole of systemic and global nature development, shaping more current conceptual approaches configurated by more complex explicative models in which general psychomotor elements interact of human development (Lorber, Del Vecchio & Slep, 2014) with superior cognitive and executive skills (Anderson, 2008), further facilitating interactive causal between the different factors that affect to development of people with ASD.

New developmental hypotheses are analogous to Mutualism model, developed by Van der Maas et al. (2006), which is just based over the existence of a complex and multiple network of cognitive and motor factors that interact with each other, influencing the psychosocial development itself, which can growth their deficits and/or create discontinuities throughout evolutive development, as well as, are agree whit the hypothesis by the Ecological models of Evolutive and Developmental Psychology, whose neurocognitive factors are currently highly also refuted about (Kievit et al., 2017).

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Hence, the psychomotor elements have been complemented to ASD diagnosis, which have been studied along recurrently experimental research (Hill, 2004). These studies include, among other specific characteristics concomitant, to different degrees or levels of ASD: self-regulation capacity, control of inhibitory elements, executive planning and cognitive flexibility. Pellicano et al. (2017) also add those other alterations relating to spatial and temporal motor development, which, as they also affirm Diamond (2013), de Vries & Geurts (2015) and Miyake & Friedman (2012), directly influence the factors of inhibition/disinhibition, fluency and flexibility, concept formation and executive planning, which, successively, has a significant incidence too on learning academic processes which can progressively worse if educational preventive programs aren't applied. In this sense, there're multiple currently research that link the linguistic communication capacities to psychomotor skills (Ament et al., 2015; Lloyd, MacDonald & Lord, 2013), so that children with ASD get significantly low scores in language development, both expressive, receptive and phonological, which are highly relating to psychomotor skills developmental, keeping a well-structured basic systemicity to define the ASD symptomatology. Regarding motor needs, Hilton, Zhang, Whilte, Klohr & Constantino, (2012) and Iverson (2010) shape that 83% of children with ASD studied have found compound psychomotor scores with significant deviations from mean regarding to the normotypical group. Therefore, it already early childhood, research show interrelationships between psychomotor skills and language, being able set significant predictive criteria for ASD diagnoses at risk, which is already observable early as 18 months of age and, after, incidences the acquisition of language skills from 3 years old (Coleman, Weir, Ware & Boyd, 2013; Wang, Lekhal, Aarø & Schjøberg, 2014).

But, studies on psychomotricity not only referencing to predictive analyses of deficits in fine psychomotor skills (Deserno et al., 2023), but also to deficits in gross psychomotor skills (Leonard, Bedford, Pickles, Hill & BASIS Team, 2015). Gross motor skills have proven be a fundamental explicative element by interaction with psychological emotional processes development, which are mightily relating to social interaction capacities and social communication processes, so, e.g., the presence of deficits in gross psychomotor skills have been shown to be highly predictive of subsequent symptomatic groups to diagnosis of ASD on later evolutive phase (Mody et al., 2017).

Likewise, psychomotor skills are linked the adaptive functioning to context and the quality of life of people with ASD and it constitutes significant predictive variables by communication and social interaction needs (Bremer & Lloyd, 2016; Crippa et al., 2021; Mosconi & Sweeney, 2015; Sacrey, Zwaigenbaum, Bryson, Brian & Smith, 2018), which has been rightly quantified through the processes of systematic behavioural observation (Cook, 2016; Wilson, McCracken, Rinehart & Jeste, 2018). Indeed, data have shown highly atypical basic motor criteria over general movement of people with ASD, characterized by structural rigidity and deficits in visual- psychomotor coordination. These needs rise when ASD' diagnostic intersects with lower cognitive skills and cognitive levels (Peterson, Janz & Lowe, 2008; Savage, Tomaszewski & Hume, 2022).

In this sense, MacDonald, Lord & Ulrich (2014) have concluded that psychomotor skills affect to effectiveness of school performance, being more deficit if the higher psychomotor deficit, which, in general, these authors point about 9.5 months behind their chronological age. This delay is evident in curricular components, being very perceptible in writing, owing the coordination needs in pencil handle and the specific presence of hypotonia and psychomotor rigidity symptomatic (Alaniz, Galit, Necesito & Rosario, 2015; Broun, 2009; Johnson et al., 2015), with which these needs not only affect the executive motor planification, but also incidence along whole cognitive processing system, influencing to all educational- academic area.

With these basic hypotheses, the particular specific needs in the psychomotor system is greatly demonstrated, as well as the relationships of psychomotor particularities with the language and the cognitive system development, shaping a global systemic set of integral human development in people with ASD. Thus, the existence of a highly significant relationship between the cognitive process and psychomotor variables in people with ASD have been found, that affect to general development process and, therefore, curricular- school learning. For this reason, there's a growing needs the application of interactive programs that integrate motor and linguistic content and cognitive processes to ease their overall development (Ketchesona, Felzer-Kim & Hauckb, 2021).

Interactive programs must implicitly design goals it integrating psychomotor and linguistic subject-matter; therefore, it's fundamental to design programs that integrate the psychomotor- linguistic and cognitive items with specific academic development that will be most effective if more they are related itself throughout along evolutive development. For this reason, the school curriculum, especially inside early childhood, must be complemented with functional basic psychomotor subject-matter within the curricular- school goals, in order to help cognitive- perception-coding processing to comprehensive development duly adjusted to educational specific needs of students with ASD.

Also, these integrated programs must allow the joined modelling of motor and language processes with perceptive- cognitive domains of development and, both, with curricular- school development, setting a circular model of development that overstep to linear cognitive models of previous neuro- psychologic theories.

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Therefore, this study tries to respond the following main aims: 1) analyse the application of specific programs related to basic psychomotricity development in students with different levels, age and sex in people with ASD diagnosis, 2) delimit the influence of the significant cognitive-nodal relationships between the concepts and conceptual- categories of learning, 3) verify the existing correlations between the psychomotor elements, the relational-cognitive-nodes factors and the curricular- school performance variable.

## METHOD

### Research design

This study is a quasi-experimental analysis based over one ad hoc survey, in which the variables- goals quantification have been requested through by continuous scale 1-10, being 1 (nothing developed) and 10 (fully developed). Data have been analysed by psychometric means tests through the univariate general linear model isolated regarding the dependent variable (DV) to: 1) fixed variables and 2) dynamic variables or factors. Finally, the correlations between all study variables are also measured.

### Participants

A total of 99 students have participated in this study, whose distribution by ASD level, sex and age can be seen in Table 1.

**Table 1: study participants (N: 99).**

sex			age							
			0-3 y-o	3.1-6 y-o	6.1-9 y-o	9.1-12 y-o	12.1-15 y-o	15.-18 y-o	>18.1 y-o	Total
guys	diagnosis	level 1	3	6	3	8	14	5	4	43
		level 2	0	2	1	2	7	0	0	12
		level 3	0	2	8	2	8	2	0	22
	Total			3	10	12	12	29	7	4
girls	diagnosis	level 1		0	1	0	3	1	2	7
		level 2		4	5	0	0	0	0	9
		level 3		0	2	2	0	2	0	6
	Total			4	8	2	3	3	2	22

Thus, in this study 77 students with ASD guys have been participated, 43 of 1-level, 12 of 2-level and 22 of 3-level, and 22 girls, 7 of 1-level, 9 of 2-level and 6 of 3-level (Total: 99).

### Variables

The study has been organized into two groups of variables:

- I) Fixed variables, which are related to: 1) level or degree of ASD (diagnosis), 2) participants sex (sex) and 3) participants age (age).
- II) Dynamics variables, formed by: 1) psychomotor variable (psychomotricity), 2) the development of relational-cognitive-nodes between information (relationship), and 3) the curricular- school learning processing (learning).

The learning variable has been thoughtful like dependent variable (DV).

Values regarding the fixed variables can be seen in Table 2.

**Table 2. Fixed variables values.**

Variables	Values
ASD level	1-level 2-level 3-level
Sex	guys girls
Age	0-3 y-o 3.1-6 y-o 6.1-9 y-o 9.1-12 y-o 12.1-15 y-o 15.1-18 y-o >18.1 y-o

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Dynamic variables have been quantified throughout a continuous scale: 1 (any)-10 (full) (see Table 3).

**Table 3. Dynamic variables values.**

Variables	Values									
psychomotricity	1	2	3	4	5	6	7	8	9	10
relationship	any	very low	low	half low	lower half	upper half	half high	high	very high	full
learning (DV)										

## Procedure

Throughout the last scholar course different interviews have been performed, both in writing and in person or by phone, regarding to the research aims and subject-matter, in order try to define the psychomotor action area and the development of cognitive-nodal-relationships, regarding to curricular-school goals effectiveness of students with ASD, along different educational schools of Spain.

In this study has been reflected the analysis psychometric statistical conclusion.

## RESULTS

Study results are presented organized in several sections of the analysis: 1) the reliability level of the data found, 2) the ANOVA analysis for the fixed and dynamic variables, and 3) the correlation of Pearson for all analysis elements.

### Reliability level of data analysis.

The reliability level has been found throughout Cronbach's Alpha test ( $\alpha$ ) (see Table 4) and the associated ANOVA analysis to Cronbach's Alpha (see Table 5).

**Table 4. Cronbach's Alpha Reliability Statistics.**

Cronbach's Alpha	Cronbach's Alpha based on N <sup>o</sup> of items standardized items	
.615	.419	6

**Table 5. ANOVA with Cochran's Test.**

		Sum of squares	Df.	Mean square	Cochran's Q	Sig.
Between people		646.60	98	6.59		
Within people	Between items	2171.49	5	434.29	314.72	.00
	Residual	1243.83	490	2.53		
	Total	3415.33	495	6.90		
Total		4061.93	593	6.85		

$\mu = 4.0101$ .

Indeed,  $\alpha$  total reliability level is not very high for 6 study elements: .615, owing because this study sample is not very greatly, however, the ANOVA test the Cochran analysis associated to  $\alpha$  reliability statistic allows refuse the basic hypothesis that sample means are same regarding to 6 elements studied of analysis (sig: .00), which eases the statistical effectivity of subsequent results.

### ANOVA values to fixed variables.

The incidence of fixed variables about DV: learning has been analysed wear the univariate general linear model analysis throughout the Between-Subjects Effects Test (see Table 6).

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**Table 6. Test of Between- Subjects Effects to fixed variables.**

Dependent Variable: learning

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected Model	359.44(a)	24	14.97	6.65	.00
Intercept	1486.73	1	1486.73	660.54	.00
diagnosis	28.18	2	14.09	6.26	.00
sex	7.57	1	7.57	3.36	.07
age	19.24	6	3.20	1.42	.21
diagnosis* sex	13.92	2	6.96	3.09	.05
diagnosis* age	28.58	7	4.08	1.81	.09
sex* age	46.99	5	9.40	4.17	.00
diagnosis* sex* age	9.39	1	9.39	4.17	.04
Error	166.55	74	2.25		
Total	3705.00	99			
Corrected Total	526.00	98			

a)  $R^2 = .683$  (adjusted  $R^2 = .581$ ).

Data found allow the following conclusions to be made up. The intercept analysis and model effects as whole, that's, the incidence of the 3 fixed factors: diagnosis, sex and age, are correlated with a significant critical statistic level (corrected model: .00 and the associated intercept: .00), which means that statistical total sum of 3 fixed variables contributes to explain the significant differential data found over DV: learning, with a  $R^2$  specific explicative level: .683, being  $R^2$  corrected level: 58.1%.

However, according the variable kind the influence found is differently if the variables are considered separately. Hence, ASD diagnosis level has shown a decisive influence on learning variable variability (diagnosis: .00), while the sex and age variables don't have had a significant influence if are considered separately (sex: .07 and age: .21).

The partial group of variables formed by diagnosis and sex there is a positive influence on data variability of DV (sig: .05). The correlation between sex and age also have formed a significant whole (sig: .00), while the variables group: diagnosis and age does not significantly influence on the DV data (sig: .09).

*ANOVA values for dynamic variables.*

This item constitutes this study fundamental share, since it allows observe if the dynamic- aleatory variables: psychomotricity and relationship, significantly affect the DV: learning.

To perform this analysis, the ANOVA Univariate Between-Subjects Effects Test was used (see Table 7).

**Table 7. Test of Between-Subjects Effects to dynamic values.**

Dependent Variable: learning

Source	Type III sum of squares	Df.	Mean square	F	Sig.
Corrected Model	480.30(a)	36	13.34	18.10	.00
Intercept	1233.04	1	1233.04	1672.93	.00
psychomotricity	41.52	10	4.15	5.63	.00
relationship	51.77	8	6.47	8.78	.00
psych* relationship	36.88	18	2.04	2.78	.00
Error	45.69	62	.73		
Total	3705.00	99			
Corrected Total	526.00	98			

a)  $R^2 = .913$  (adjusted  $R^2 = .863$ )

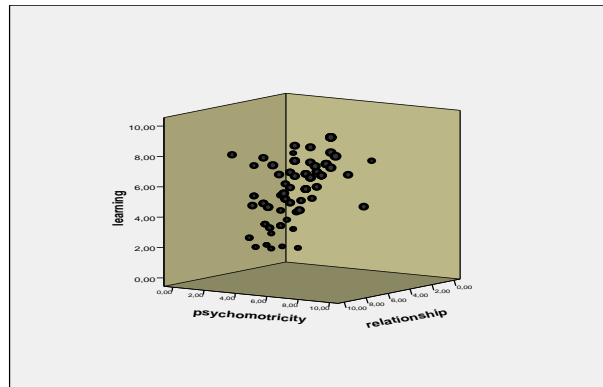
Data is conclusive, the intersection and the variables isolated, as well as the interaction between all variables have found a significantly affect over DV: learning.

Hence, the intersection- intercept has found a critical level: .00, as well as the psychomotricity variable (sig: .00) and relationship variable (sig: .00). All interactions have found significant critical level (sig: .00). Therefore, it can be able concluded that relational perceptive- cognitive-nodes components and the fine and gross psychomotor development are highly related with the

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curricular-school components: learning, whose  $R^2$  explicative level is significantly high: .913, being  $R^2$  adjusted level: 86.3% of explicative variance on DV.

In synthesis, data imply a significantly high level of incidence on DV: learning, which corroborates the initial hypotheses of this study main aim. The visual observation of 2 dynamic factors explicative variance over DV: learning, can be seen in Graph 1.



Graphic 1. Image of explicative variance.

Indeed, it can be seen as both factors present an explicative centralization (blackheads accumulation), with greater light concentration the relationship variable than psychomotricity variable.

Indeed, ANOVA analysis for 2 factors when both are located in the aleatory analysis of the SPSS statistical, variables have also found a significant critical level, but level has been slightly better for relationship variable (sig: .00), than in psychomotricity variable (sig: .04).

*Correlations between the six analysis elements.*

The correlational levels for all study variables have been found throughout the Pearson Correlation statistic ( $r$ ) (see Table 8).

Table 8. Correlation de Pearson to 6 elements.

		<i>diagnosis</i>	<i>sex</i>	<i>age</i>	<i>psych.</i>	<i>relationship</i>	<i>learning</i>
<i>diagnosis</i>	<i>r</i>	1					
	Sig. (2-tailed)						
<i>sex</i>	<i>r</i>	.11	1				
	Sig. (2-tailed)	.27					
<i>age</i>	<i>Pearson Correlation</i>	-.13	-.062	1			
	Sig. (2-tailed)	.19	.540				
<i>psychomotricity</i>	<i>r</i>	-.061	.058	-.204(*)	1		
	Sig. (2-tailed)	.54	.56	.04			
<i>relationship</i>	<i>r</i>	-.163	.130	-.098	.752(**)	1	
	Sig. (2-tailed)	.10	.20	.33	.00		
<i>learning</i>	<i>r</i>	-.282(**)	.067	-.092	.842(**)	.746(**)	1
	Sig. (2-tailed)	.00	.51	.36	.00	.00	

\*\* Correlation is significant at .01 level (2-tailed).

\* Correlation is significant at .05 level (2-tailed).

Relevant data has been found over relationships between DV: learning, regarding to the dynamic factors: psychomotricity and relationship, whose correlations were highly significant for .01 level (psychomotricity: 84.2% and relationship: 74.6%), being both significant critical levels (sig: .00).

Likewise, the interaction between relationship and psychomotricity shows a significantly high correlational level (75.2%, sig: .00). On other, regarding the fixed variables, a significant relationship of DV: learning, with diagnosis variable has found to .01 level (28.2%, sig: .00).

All other fixed variables and their interactions have not found to the correlational effects significant scores.

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## CONCLUSION

This study verifies the existence of a significant relationship between the effectiveness of teaching-learning processing and a programmatic structure based by creation of cognitive-relationship-nodes and the significant relationships between concepts and conceptual-categories in order allow the development of neural-cognitive connections in people with ASD diagnosis. But, above all, this study leaves advancement along most global ambit of evolutive development, thus when these perceptual-cognitive- relationships are associated to global fine and gross psychomotor developmental, shaping a whole systemic group to improve the curricular-school performance.

Hence, it is obvious that systemic of perceptive- cognitive functioning is highly contrasted research but it has always been recurring research regarding to general basic psychological cognitive processes, but, now, it has shown that it's also been necessary the fine and gross psychomotor movement development greatly related to improve the conceptual - curricular-academic development.

Indeed, themselves psychomotor programs development are fundamental subject-matter to improve global human development, however, their conceptual relationship can be highly vital to academic- school learning, e. g. following math equation  $(3+2)-1=4$  made on paper, it can be experienced in the psychomotor scope through a specific task: three children are placed in line linked by hand, after two other child join them ( $3+2=5$ ), all children turn hand in hand, they turn together in a circle, suddenly, a child lets go of this circle and, therefore, subtracts one child ( $(3+2)-1=4$ ). Now, children have been able live the previous math equation functional way throughout the psychomotricity, which, also, increases the comprehensive significance of new learning proposed, that it'll be more effective the more it is related to previously learned subject-matter.

It is also important to highlight that diagnosis level constitutes a basic element of variance explicative incidence of data found over DV: learning, as well as the interaction of ASD level by age and sex of the study participants, therefore, it must review the relational functional programs applied to different specific characteristics of each student with ASD, advancing towards relational- global- systemic specific programs agreed their own needs within an inclusive teaching-learning.

## DISCUSSION

Liu, Capistran & ElGarhy (2021) and MacDonald, Lord & Ulrich, (2013) have signalled it is fundamental design global- relational educational programs of psychomotor scheme with curricular-school aims, with the intention interact the learning of communication and social interaction skills and psychomotor development; but, it is not just the interactions related to ASD specific symptomatic dimensions are important, besides these relational- psychomotor programs be implemented regarding to curricular- school learning, since this interaction has shown have a decisive influence on final academic- school performance.

Thus, when people with ASD get involved in interactive psychomotor programs, they have improved not just fine and gross specific psychomotor behaviour, but it also influences on cognitive development and the global- academic improvement (Bartlo & Klein, 2011).

This relational association allows a considerable rise in opportunities for social and communication learning of people with ASD, especially along development earliest ages. Indeed, Choi, Leech, Tager -Flusberg & Nelson (2018) have shown that related development of psychomotor skills in babyhood with ASD improved the frequency of these infants' interactions within their families and eased development of language, social communication and behavioural.

And, although these data must be given with some carefulness, since there aren't many scientific verifications about, Office of Head Start's model (OHS) (Head Start, 2018; 2020) has focused on the preparation of psychomotor skills correlated by phonological, social language, emotional, perceptive-cognitive-relational and academic-school development, which set up an integrated process like whole, being a highly predictor of afterwards educational- school development.

In this sense, Best, Miller & Naglieri (2011), Gustavsen, (2017) and Miller et al. (2017), have trained that psychomotor development domain was mightily related to academic-curricular-school progress in students with ASD. Authors affirm there is a close relationship between working memory skills of the perceptive- cognitive processing with reading-writing and math abilities, both mechanical and comprehensive, which growth along the last academic courses of primary education.

Just, an applied model of preventive preparation for curricular- school process must include that goals and subject- matters-contents educational are highly related to fine and gross psychomotor skills and relational perceptual-cognitive-nodes of neuro-psychological information processing (Izuno-Garcia, Jellinek, Rosenbrock, Keller-Margulis & Mire, 2022; Lambourne et al., 2013). However, as this research has shown, it is essential these programs include a specific interaction between the perceptive-cognitive- nodal development related with psychomotor area significantly and functionality way, to strengthen the conceptual and categorial codification in people with ASD (Ojea, 2022).

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In synthesis, an integrated and global- systemic program must include, between other aspects, five general goals:

- 1) Develop basic general fine and gross psychomotor skills, according to the specific needs of people with ASD.
- 2) Set relationships between the psychomotor aspects and the general learning goals and their subject- matters.
- 3) Engage basic psychomotricity as a functional mediator of learning processes, above all, in early childhood.
- 4) Specify the meaning of learning processes, nearing the new goals to previously acquired subject- matters, throughout the psychomotricity area as a coding relationship.
- 5) Intervene to set up interactive cognitive neural nodes of conceptual and categorical knowledge.

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## Development of Volleyball Learning Model to Improve Forearm Passing and Overhead Passing Skills of the Eighth Grade Students



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**ABSTRACT:** This research aims to: (1) Develop a volleyball learning model to improve the forearm and overhead passing skills of the eighth grade students. (2) Figuring out the level of feasibility of the volleyball learning model to improve the forearm and overhead passing skills of the eighth grade students. (3) Figuring out the level of effectiveness of the volleyball learning model to improve the forearm and overhead passing skills of the eighth grade students. This research was a development research using the ADDIE development research model which involved the stages of model development with five development steps/phases including analysis, design, development or production, implementation, and evaluation. Validation was conducted by experts in their fields. The trials consisted of smallscale trials, large-scale trials, and effectiveness tests. Research data collection techniques used questionnaires and AAHPER face pass wall-volley test. The data analysis technique used the Wilcoxon test with the help of SPSS 25 for Windows software. The result of this research is to create a volleyball learning model for the eighth grade students of junior high school which is developed and packaged in the form of a book. The volleyball learning model developed is classified as "proper" and "valid" based on the results of the validation by the experts. The results of the product effectiveness test using the Wilcoxon test gain an average pre-test passing score at 29.77 and a mean post-test passing score at 35.17, an average passing pre-test score at 32.13 and an average passing post-test score at 35.89 with an Asymp-Sig.(2-tailed) value of 0.000 < 0.005. These results indicate that there is a difference between pre-test and post-test. Based on the results of this analysis, it can be concluded that the forearm and overhead passing skills of the eighth grade students improve after learning volleyball.

**KEYWORDS:** learning, volleyball, skills, passing, students

### INTRODUCTION

Physical education, sport and health is an educational process through physical activities aimed at improving physical fitness, developing motor skills, knowledge and behavior for a healthy life. Strong and dynamic, sportsmanship and emotional intelligence. Physical education, sports and health activities are systematically selected and planned to achieve national educational goals. The physical, sports and health education taught in schools is crucial in ensuring that students are directly involved in a variety of learning experiences through physical activity. Physical education, sports and health activities are systematically selected and planned to achieve national educational goals. Physical education, sports and health are important to learners because in today's globalization era, learners can easily access information by means of communication such as: mobile phones and personal computers (PCs). Learners can spend hours and hours glued to communication devices, which makes students inactive and becomes a problem for students, as it can reduce the level of physical training, fitness, sports and children's health. Important role through aspects content such as: cognitive, emotional, and physical in learning, exercise, sport and health at school.

Physical, sports and health education is a part of the national education aimed at physical, mental, emotional and social Development, and a healthy lifestyle. The vital role that physical education, sport and health are taught in schools is to provide opportunities for students to participate directly in a variety of learning experiences through physical policies. Sports and health are done systematically. The provision of learning experiences promotes better physical and psychological development, as well as the formation of a healthy lifestyle (Jariono et al., 2020). According to Lubis and Agus (2017:59), "Physical activity, play and sport are systematically practiced, learned and experienced in order to support and form a healthy and active lifestyle throughout life". In PE teachers, sports and health teachers must be able to adjust teaching materials according to the circumstances, conditions and characteristics of students, of course each student has a unique character in behavior.

The sports skills acquired in the process of learning exercise, sports and health will provide strength and nourish the soul,

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Body, form a healthy, intelligent and creative personality to find the way. escape from all complex problems. Physical education, sports and health should be carried out as an effort to develop healthy living habits through learning that engages students' attention and interest, so that physical activity is utilized as a necessity. The learning materials are classified according to each stage, from simple to complex, lightest to heaviest, easiest to hardest.

Academic innovations are always aimed at improving the quality of learning and student learning outcomes. Various approaches and strategies are implemented to further enhance students' potential. In the learning application, the teacher can provide materials about the big ball game. In addition to developing and improving skills, the big ball game can also make students happy to do motor activities. For this reason, in addition to meeting academic goals, their motor needs are also met and, of course, students' motor skills will increase when playing big ball games. In the implementation of teaching in schools, teachers should choose an attractive form of learning, and at the same time and a variety of movements so that students can easily perform complex movements in accordance with learning materials. Middle School PE, especially in grade 8, is graded by students.

An interesting learning model and the addition of a wide range of movements will keep students interested in learning. In addition to being able to develop and perfect skills, learning goals are achieved, their mobility needs are also met, and, of course, students' physical health will be better. " Learning done by adding fun games will make students more excited and not get tired or bored easily " (Revandhani 3:2018). Therefore, when building a learning model, it must be creative, effective and effective, such as applying variations in the game and adding variations of moves, because when applying variations in the game and adding variations in movement, students will not only have fun but learn, but will also develop their skills and physically improve their progress.

This study will focus on learning volleyball, especially to improve forehand and forehand passing skills. In learning Volleyball, students' lower and upper passing skills are still very lacking. Students quickly get bored of participating in the class, so they cannot fully achieve their learning goals. In learning volleyball, many people have not yet built games and variations to improve their forward and forward passing skills, stimulating students to be more interested in learning. Volleyball learning is always done according to the command method, whereby students are served and guided in forward and forward passing movements. The techniques used are also monotonous, not given through the game, so that students are more interested in learning.

From the results of observations and interviews conducted by researchers at universities, there are a number of problems in this area as evidenced by the results of observations and interviews at universities, specifically: SMP Maarif Imogiri and SMP Muhammadiyah 2 Kalasan. The result is:

Firstly, on the issue of learning exercise, sports and health, specifically the basic volleyball skills learning materials for middle school students, teachers have not found an effective method to impart each ball skill. basic volleyball for 8th graders. According to the results of field observations and interviews, the teaching of basic volleyball techniques lacks diversity, which can be proved on the basis of actual observations that teachers' instructors only teach basic techniques of volleyball games with simple method. provide basic technical equipment in volleyball lessons, but teachers still apply the way students achieve when learning volleyball in pairs with friends. However, physical education, sports, and fitness learning are not always effective with a simple peer-to-peer model. Providing learning materials with games can be an option. new options for teaching the basic techniques of the game of volleyball.

Secondly, ineffective learning causes the length of learning time is not fully used 2x40 minutes, because it is cut off by preparation before and after learning.

Third, provides an unchanging learning model that makes students feel bored and do not want to participate in learning, different from students who love sports and always want to be active. Of course, this unbalanced view won't look good. Student activity in learning engagement should certainly be done by all students, not just a few.

Fourth, the basic technical ability to pass is not good, which will affect the quality of the game . The teaching of volleyball lessons for 8th graders in middle school is not diverse, leading to poor passing skills. Many factors affect passing skills in volleyball. Poor serving and serving technique in volleyball should be attributed to the factors that cause them, which can be due to poor mastery of the basic techniques, inadequate fitness, or ineffective training methods., etc. The condition is that the teacher must be able to evaluate all factors of both the teacher and the students participating in volleyball. The researchers received feedback on developing a volleyball learning model to improve forehand and forehand passing skills, in which students take a more active role and can develop their abilities. pupil.

Different types of problems occur in schools and each school has different problems. In this case, the researcher intends to develop a learning style that focuses solely on the underpass and overpass material of the subject. Volleyball. The situation in this area shows that fitness, sport and health learning has not gone as expected and expected due to the provision of appropriate

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learning materials to students in the eighth year of the cycle. first of high school, and the teacher's performance must be really effective and efficient to achieve what is expected. Regarding this issue, it is very necessary to study carefully, deeply, and reclassify the correct pattern and method for the learning process, especially the technique of underplaying and passing in volleyball. So, through this research, hope to get the right solution or answer for teaching and passing volleyball to junior high school students. " Volleyball is a sport aimed at improving physical fitness and developing athletic performance, so efforts to improve and develop volleyball learning outcomes must be applied to enhance desired performance. " (Ferguson in Budiarti & Hanif, 2016). The building of this volleyball learning model will be developed with the aim of helping students progress further in their learning and improving their under and overpass skills. To achieve these goals, student learning should address increased student activity and engagement. The learning achieved must be effective and efficient in order to achieve good learning goals, and at the same time, must be able to create comfortable learning conditions for students to study.

The study of volleyball for 8th graders in lower secondary schools needs to be further studied so that students can learn in accordance with the learning goals to be achieved. Learning volleyball requires complex movements, while learning physical education, sports and health. Teachers provide materials suitable for learning goals, but each individual student has different ability levels. Therefore, the students' motor skills in learning volleyball are still not good. In this study, model building will be carried out in the process of learning volleyball equipment, thereby hoping that students will get interesting and easy-to-implement volleyball equipment for students, at the same time, can improve the quality for lower students in higher grades. passing skills.

This research on building a volleyball learning model will contribute to building a learning model, especially for students of grade 8 in lower secondary schools. The end product of this research should be able to bring about changes in volleyball learning, as learning must be able to keep students active and well engaged, so that academic goals at school are met and achieved, and at the same time bring positive benefits to students in the process of participation in other courses. In this study, it is hoped that building a volleyball learning model can improve lower and upper passing skills, and at the same time, increase students' interest in participating in volleyball in junior high school, especially 8th graders.

Based on the above description, the problem is that in volleyball learning, students' lower and upper pass skills are always lacking. Due to the lack of playing and modification in the instrument description, it is difficult for students to perform the lower pass, pass through. lower and upper pass movements in volleyball learning, so it is necessary to build a volleyball learning model to improve students' lower and upper pass skills so that volleyball learning is most effective, the goal learning is also achieved. Physical education, sports and health are said to be able to make a difference in the learning of volleyball, more diverse and not monotonous in their application. The aim is to encourage students to move more actively and to anticipate the boredom that students often experience, and especially to improve their bottom and top passing skills by taking volleyball lessons at school.

### **RESEARCH METHODS**

This study uses a research and development approach. Research and development according to Sugiyono (2016:47) is a research method used to create several product designs, testing the effectiveness and validity of the designs so that the product can be tested and can be used by the public. The production of some products is usage research, needs analysis, and effectiveness testing for the product to be used by the community.

The ADDIE (Analysis, Design, Development, Implementation and Evaluation) method was used in this study because it is easy to learn, simple and systematic. This model has five interrelated and systematic components, which means that the model must be used consistently and cannot be randomised in its application. Since the model is simple and systematically structured, it is easier to apply and understand.

### **DEVELOPMENT PROCEDURE**

Research and development in this thesis uses the development process based on the theory of Lee & Owens (Sugiyono, 2016:410) uses five phases in a cycle, which is ADDIE (Analysis, Design, Development, Implementation, and Evaluation).

### **TEST SUBJECTS**

Research object is the goal in the process of using the product. The subjects of the study were 8th graders in secondary school. The subjects of this study were divided into three subjects, namely, as follows.

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## SMALL SCALE TRIAL SUBJECTS

The study was conducted on a small scale, to determine the errors and feasibility of the volleyball learning model. In this study, the experiment used 1 teacher and 47 8th grade middle school students. Topics were selected based on the number of sports teachers and eighth graders. The results of the small-scale trial will be used to correct gaps in the development of a volleyball learning model to improve upper back passing skills, in order to obtain a final product that matches pupils.

## LARGE-SCALE TEST SUBJECTS

The subject of the comprehensive lawsuit is Muhammadiyah 2 Kalasan High School. This topic is different from the topics used in the small-scale test. A large-scale trial of developing a volleyball learning model to improve forehand and forehand passing skills begins with an assessment of the fitness of the volleyball learning model for students. The assessment was conducted by 1 sports teacher and 60 middle school 8th grade students.

## EFFECTIVENESS TEST SUBJECT

Efficacy testing was carried out at Maarif Imogiri High School. The effectiveness test was conducted to determine the effectiveness of the volleyball learning model in improving the lower and upper passing skills of middle school 8th graders. The effectiveness test used 47 students as respondents. Data was obtained through experiments pre-test and post-test. Learners are given feedback on underpasses and overpasses before changing the game and overpasses to measure the effectiveness of this model. The effectiveness test will detect the effectiveness of the volleyball learning model in improving a student's forehand and forehand passing skills.

## DATA ANALYSIS TECHNIQUES

The initial draft of the model is considered suitable for testing at small and large scales if experts have validated the tool and can test it. The obtained data is then calculated and the result obtained as a percentage. Processing the feasibility of data in the questionnaire described by Sugiyono (2016:93) as follows.

$$P2 = \frac{\sum X}{\sum Xg} 100\%$$

Caption:

P2 : Eligibility Percentage

$\sum X$  : Total number of Answer

$\sum Xg$  : Total Ideal Score in one Item

100% : Constant

**Table 1. Eligibility Score Criteria**

No	Category	Percentage
1	Verygood	81% - 100%
2	Good	61% - 80%
3	Simply	41% - 60%
4	Less	21% - 40%
5	Veryless	0% - 20%

To decide the viability of the product, 16 gatherings were held by giving learning materials from the item. This last item test is to decide whether an item that has been delivered is doable and has focal points within the level of execution within the field. Sometime recently, the theory test, a prerequisite test was carried out, typicality test, and homogeneity test. Ordinariness test to decide whether the information is regularly dispersed or unusually disseminated. In the information is ordinarily disseminated, the information is analyzed utilizing the t-test. The Wilcoxon test is carried out in case the information gotten isn't normally distributed. According to Widarjono (2015:228), "the Wilcoxon test could be a measurable test of the distinction between two tests of information which is information on an ordinal scale and not ordinarily disseminated". Judging from the coming about of all these exploratory strategies, changes within the upper and lower passing abilities of understudies will be gotten due to the use of the volleyball learning show in the volleyball learning demonstrate is really attainable and effective.

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## RESEARCH RESULT AND DISCUSION

Table 2. Wilcoxon Test for Lower Passing

	N	Min	Max	Mean	Std.
Pretest Lower Passing	47	21	50	29.77	6.318
Lower Passing Posttest	47	25	60	35.17	7.528
Valid N	47				

Table 3. Test Statistics of Lower Passing

	Pretest Lower Passing Lower Passing Posttest
Z	-6.006 <sup>b</sup>
Asym Sig (2-Tailed)	.000

Based on Table 2 and Table 3 over,  $P = 0.000 (<0.05)$ , it can be concluded that there's a distinction within the lower passing aptitudes of eighth review junior high school understudies between the pretest and posttest. The cruel pretest score was 29.77. After understudies were given a volleyball learning show to progress the lower and upper passing aptitudes of eighth review junior high school understudies, the cruel posttest score was 35.17. Based on these comes about, it can be concluded that the students'lower passing aptitudes have "progressed" after learning volleyball, agreeing to the item made.

Table 4. Wilcoxon Test for Upper Passing

	N	Min	Max	Mean	Std.
Pretest Upper Passing	47	21	55	32.13	7.258
Upper Passing Posttest	47	25	60	35.89	7.399
Valid N	47				

Table 5. Test Statistics of Lower Passing

	Pretest Lower Passing Lower Passing Posttest
Z	-6.028 <sup>b</sup>
Asym Sig (2-Tailed)	.000

Based on Table 20 and Table 21 above,  $P = 0.000 (<0.05)$ , it can be concluded that there is a contrast in the outstanding ability of students taking the eighth college entrance exam between the pre- and post-test. exam. The merciless test score is 32.13. After the students received a volleyball learning program to improve the bottom and top pass skills of college review students for the eighth time, the post-test dire score was 35.89. Based on this result, it can be concluded that the students'higher passing skills are "improved" after learning volleyball, which is consistent with the goal achieved.

Based on the test results, it can be concluded that it is "feasible" to learn volleyball to gain passing and passing skills from Middle School 8th Amendment students. use live volleyball learning work. Based on the feasibility test, there appears to be a "change" in the students' bottom and top passing skills after using this volleyball learning demonstration. It can be concluded that the improvement in volleyball learning demonstrates that the 8th grade high school students'lower and upper pass abilities are "feasible" for use in volleyball learning.

## CONCLUSION AND SUGGESTIONS

Based on the research results and data analysis results that have been done, it is concluded that through the research and development approach using the ADDIE (Analysis, Design, Development, Implementation and review), a volleyball learning model was produced. with the aim of improving the low- and high-average skills of middle school 8th graders, through a five-stage

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development phase, namely analysis, design, development, implementation and product efficacy testing. The building of a volleyball learning model to improve the lower and upper pass skills of 8th graders in lower secondary schools is considered "valuable" by experts / appraisers. The development of the volleyball learning model was deemed "feasible" for use as a volleyball learning guide in order to improve the bottom and top passing skills of 8th grade middle school students. The construction of the model. Learning volleyball to improve lower and upper passing skills of 8th graders in Middle School has shown "effectiveness" in improving lower and upper passing skills of 8th graders in Middle School.

Some suggestions that the author can give to use the products from this study include for teachers, building a volleyball learning model to improve lower and upper passing skills of middle school students from the future 8th grade can add more educational knowledge about the importance of improving students' skills, especially through learning to play volleyball. For students, building a volleyball learning model to improve junior and senior passing skills of junior high school students in grade 8 can be used as a guideline or guide to practice passing skills. subordinates and superiors in volleyball and in the future can motivate students. in the implementation of learning volleyball at school.

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## THREAT ASSESSMENT of RED-and-BLUE LORY in the KEPULAUAN TALAUD: A Case Study on Illegal Hunting and Habitat Destruction in the Vicinity of Red-And-Blue Lory Conservation Area at PT Pertamina Patra Niaga IT Bitung



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**ABSTRACT:** Threat Assessment of Red-and-blue lory, particularly a case study on illegal hunting and habitat destruction using direct observation methods in the natural habitat of red-and-blue lory, specifically within the red-and-blue lory Conservation Area at PT Pertamina Patra Niaga Integrated Terminal Bitung in Beo District, Kepulauan Talaud Regency, Indonesia. This research aims to determine the factors that influence illegal hunting and habitat destruction, which have an impact on the population size of red-and-blue lorries. Observations were conducted for 15 days (2 weeks). The results of this study indicate that red-and-blue lory are targeted for illegal hunting due to the beauty of their feathers and the high demand in the illegal wildlife trade, particularly in the Philippines. This illegal hunting poses a threat to the population of red-and-blue lorries and has led to a decline in their numbers in the wild. Additionally, there are local communities involved in illegal hunting activities. Regarding habitat destruction, there were findings of rampant illegal mining that poses a serious threat to the survival of red-and-blue lory. The widespread illegal mining in the Kepulauan Talaud has resulted in the loss of their natural habitat and disrupted their life cycle. Habitat disturbance also threatens the sustainability of the ecosystem and has negative impacts on the water and air quality consumed by red-and-blue Lorries.

**KEYWORDS:** red-and-blue lory, conservation, pertamina, eos histrio, habitat destruction, illegal hunting

### INTRODUCTION

The Red-and-blue lory is one of the endemic bird species found in the Kepulauan Talaud regency, Indonesia. According to Coates dan Bishop (2000), this bird consists of three subspecies: *E.h. histrio* found in Kepulauan Sangihe, *E.h talautensis* found in Kepulauan Talaud, and *E.h callengeri* in Kepulauan Miangas and Kepulauan Nanusa. The uniqueness and beauty of this bird make it a target for illegal hunting and trading, which directly threatens the survival of red-and-blue lory populations. According to bella (2017), in addition to their attractive and beautiful feathers, the red-and-blue lory has a unique vocalization, making it a popular choice as a pet bird. However, on the other hand, habitat destruction poses a serious threat to this species. Therefore, the purpose of this research is to assess the threats faced by the red-and-blue lory, with a specific focus on illegal hunting and habitat destruction as a case study.

Illegal hunting of the red-and-blue lory poses a significant threat to its population. According to Rustiati (1997), the population of this wildlife species has experienced a drastic decline, and the risk of extinction is quite high. The red-and-blue lory is targeted for hunting due to its beautiful feathers and high market value in the illegal wildlife trade. The high demand for this bird in the illegal trade has led to excessive capture and hunting, resulting in a drastic decline in the population over the past few decades.

In addition, habitat destruction poses a serious threat to the survival of the red-and-blue lory. Deforestation, land clearing for agriculture, and land use conversion have led to the loss of its natural habitat. Habitat change and fragmentation result in the loss of crucial shelter and food sources for the red-and-blue lory, thereby increasing the risk of population extinction.

In this context, this research will deeply examine illegal hunting and habitat destruction as the primary threats to the survival of red-and-blue lory. The aim of this threat assessment is to identify the factors influencing illegal hunting and habitat destruction, as well as to provide crucial information that can be used to design effective conservation strategies.

The results of this research are expected to provide a better understanding of the threats faced by red-and-blue lory and

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establish a foundation for effective conservation efforts. By understanding the factors that influence illegal hunting and habitat destruction, targeted protection and rehabilitation measures can be implemented, involving active participation from local communities and relevant stakeholders. These efforts aim to ensure the survival of red-and-blue lory for future generations.

### **METHODS**

The threat assessment of red-and-blue lory, particularly the case study on illegal hunting and habitat destruction, utilized the method of direct observation in the birds' natural habitat, specifically in the Kepulauan Talaud. This research involved observing red-and-blue lory within their natural habitat and documenting signs of illegal hunting and habitat destruction occurring in the vicinity of their habitat.

In addition, interviews were conducted with the local community to determine whether there were any activities of illegal hunting and habitat destruction taking place around the red-and-blue lory habitat. This research method can provide accurate information about the threats to red-and-blue lorries and serve as a basis for appropriate conservation policymaking.

The research focused on the Kepulauan Talaud, specifically in the conservation area of red-and-blue lorries at PT Pertamina Patra Niaga Integrated Terminal Bitung, located in Beo sub-district, Kepulauan Talaud regency, North Sulawesi province, from June 19, 2023, to July 3, 2023.

The aim of this research is to determine the factors that influence illegal hunting and habitat destruction, which have an impact on the population size of red-and-blue lorries.

### **RESEARCH RESULT**

#### **1. Illegal hunting**

The Red-and-blue lory is targeted for hunting due to its beautiful feathers and high demand in the illegal wildlife trade, especially from the Philippines. Illegal hunting is not only carried out by individuals but also by organized groups that capture red-and-blue lorries illegally from their natural habitat. Some of these birds are smuggled into the Philippines through well-organized illegal trading routes. This trading network involves local and international intermediaries who are responsible for the transportation and sale of these birds on the black market.

Illegal hunting has significantly harmed the population of red-and-blue lorries. Due to excessive capture, the number of red-and-blue lorries in the Talaud Islands has decreased. The population of these birds is increasingly threatened with extinction due to uncontrolled hunting activities.

Research findings have also revealed that, in some cases, local communities are involved in the illegal hunting of red-and-blue lorries. Some individuals in the Talaud Islands view the bird trade as a promising source of income. They capture red-and-blue lorries for sale in the Philippines, where these birds are kept as pets by individuals. According to Primack et al. (1998), the low income levels of communities can lead them to engage in hunting.

The participation of local communities in the illegal hunting of red-and-blue lorries is considered one of the contributing factors to the decline in the bird's population.

#### **1. a Hunt motivation**

Interviews with local residents reveal that the red-and-blue lory is targeted for hunting for the following reasons:

- **Aesthetic Value:** The Red-and-blue Lory possesses beautiful feathers that capture attention. Its bright color combinations and unique feather patterns make it highly sought-after by collectors and bird enthusiasts. This aesthetic value becomes the primary allure for the illegal hunting of red-and-blue lorries.
- **Demand in the illegal wildlife market:** The illegal wildlife market, particularly in countries like the Philippines, has a high demand for red-and-blue lorries. These birds are often sought-after as exotic and prestigious pets. It is this high demand that drives the illegal hunting of red-and-blue lorries to meet the market's needs.
- **Economic Value:** The illegal hunting of red-and-blue lorries is also driven by the associated economic values. In certain areas, particularly those with limited access to other economic resources, the illegal hunting of red-and-blue lorries becomes a promising alternative source of income for local residents. This tempts some individuals to engage in illegal hunting activities to generate additional income.

This is similar to what Nugroho (2003) stated, where the high market demand for bird species is based on their exotic value, rarity, and difficulty in capturing them.

Through this research, it was also found that the reasons behind illegal hunting activities are directly related to the lack of knowledge among the community regarding the environmental impacts that can occur due to the decline in red-and-blue lory populations. According to Soemarwoto (1992), the low level of education among the community leads to a high dependency on

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nature or natural areas. Illegal hunting of red-and-blue lorries not only harms the population of the species but also endangers the overall balance of the ecosystem. Excessive capture can disrupt the food chain within the ecosystem where they reside.

### **1. b Trade Network**

Literature reviews and interviews indicate the existence of a complex trading network involved in the illegal hunting of red-and-blue lorries. This network involves local and international intermediaries who facilitate the circulation of these birds on the black market. The illegal trade network of Talaud Parrots from Indonesia to the Philippines is a well-organized operation, involving various parties engaged in the capture, transportation, and sale of these birds on the black market. The following is a narrative of the illegal trade network of Talaud Parrots from Indonesia to the Philippines.

In Kepulauan Talaud, Indonesia, there exists a hidden network engaged in the illegal hunting and trading of red-and-blue lorries. These activities often take place in remote and inaccessible areas, making their operations elusive to the public and law enforcement.

The network begins with the capture of red-and-blue lorries by individuals or groups operating in the Talaud Islands. They use traps or snares to illegally capture these birds from their natural habitat. It is not uncommon for local residents to be involved in this illegal hunting, tempted by the profit opportunities generated from the trade of red-and-blue lorries.

Once captured, the birds are then smuggled through secretive routes connected to neighboring countries, particularly the Philippines. The illegal trade network has well-organized transportation routes and methods to evade detection by authorities. This often involves the use of unofficial sea routes or remote paths to clandestinely move these birds.

Upon reaching the Philippines, the red-and-blue lorries are channeled into the existing illegal wildlife markets in the country. The illegal trade network has contacts and relationships with local wildlife traders in the Philippines, who then sell these birds to collectors or bird enthusiasts. The wildlife market in the Philippines is a primary destination for Red-and-blue lorries due to the high demand for their beauty and uniqueness.

Throughout this process, the red-and-blue lorries endure significant suffering and high levels of stress. They are captured from their natural habitat, confined in unsuitable conditions, and undergo long and exhausting journeys. These conditions contribute to high mortality rates among the captured and smuggled birds.

The illegal trade network of Talaud Parrots from Indonesia to the Philippines poses a serious threat to the sustainability of this bird species. Excessive capture and the illegal circulation of these birds have resulted in a significant decline in the population, endangering their survival in the wild.

### **2. Habitat Destruction**

In the Talaud Islands, habitat destruction poses a threat to the survival of Red-and-blue lorries due to rampant illegal mining activities. This illegal mining has caused significant damage to the natural environment where the Red-and-blue lorries live.

Illegal mining activities often disregard regulations and necessary permits. The natural habitats of Red-and-blue lorries are frequently targeted for these illegal mining activities. Centuries-old trees are indiscriminately felled, disrupting diverse natural habitats and endangering fragile ecosystems.

As a result of habitat destruction, Red-and-blue lorries lose their homes and sources of food. The forests that should serve as their sanctuaries and breeding grounds have transformed into barren open lands. Disruptions to their habitat also affect the continuity of the Red-and-blue lorries' life cycles, such as breeding processes and migration. Furthermore, illegal mining activities also have negative impacts on the quality of water and air around mining sites. Mining waste and chemicals used in the extraction process flow into the waterways, polluting the environment, including rivers and seas where Red-and-blue lorries seek their food. This disrupts the balance of the ecosystem and threatens the survival of various species, including Red-and-blue lorries

Apart from illegal mining activities, habitat fragmentation occurring in the Talaud Islands also contributes to habitat destruction. Habitat loss and fragmentation reduce the available habitat area and affect the Talaud Parrots' ability to find food, seek shelter, and reproduce.

## **CONCLUSIONS**

This case study provides a deep understanding of illegal hunting and habitat destruction of the red-and-blue lory populations scattered across the Kepulauan Talaud, particularly around the red-and-blue lory Conservation Area at PT Pertamina Patra Niaga Integrated Terminal Bitung.

In the context of illegal hunting, it was found that the red-and-blue lory has become a target due to the beauty of its feathers and high demand in the illegal wildlife market, particularly in the Philippines. This illegal hunting poses a threat to the red-and-blue lory populations and has resulted in a decline in their numbers in the wild. Additionally, the involvement of local

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communities in illegal hunting is a serious issue that requires efforts to raise awareness among the community about the importance of conserving the red-and-blue lory.

Meanwhile, habitat destruction caused by illegal mining activities is also a serious threat to the survival of the red-and-blue lory. Rampant illegal mining in the Talaud Islands has resulted in the loss of their natural habitat and disruption of their life cycle. Habitat disturbance also jeopardizes the sustainability of the ecosystem and has a negative impact on the quality of water and air in the surrounding areas.

### RESEARCH ADVICE

Further research on the threats to the red-and-blue lory can be conducted by examining the effectiveness of existing regulations and laws in protecting the species from illegal hunting. This research can involve policy reviews, analysis of legal case data, and interviews with law enforcement and policy enforcement agencies to evaluate the extent to which current laws and enforcement measures are capable of addressing illegal hunting.

Furthermore, in the future, a study can be conducted to explore potential alternative economic opportunities around the red-and-blue lory conservation area. This research aims to identify potential alternative sources of income for local communities currently involved in the illegal hunting of red-and-blue lorries. The study may involve identifying ecotourism opportunities, developing local industries, and/or other sustainable livelihood programs that can reduce dependence on illegal hunting.

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## Education Marketing Strategy through Social Media at Khalifah Islamic Elementary School Palu, Indonesia



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**ABSTRACT:** This research discusses the use of social media in education marketing strategy at Islamic elementary level in Indonesia. The aims of this study are to describe the marketing strategy of education through social media and the effectiveness of using social media for education marketing at an Islamic school. This study used qualitative approach and the data was gathered through direct observation, in-depth interviews, and writing material analysis. The results of this study show that the use of social media for marketing strategy at Islamic Elementary Schools has integrated the management of marketing process, such as: planning, organizing, and determining social media. The social media has become the primary tool for Islamic education at elementary level in promoting the educational institutions to wider Muslim communities. The social media is considered as a very effective tool for new promotion strategy in current digital age. Muslim communities in Indonesia mostly use social media in daily life which can increase their access and interaction with Islamic education institution.

**KEYWORDS:** Social media, marketing, education institutions, Islamic education

### I. INTRODUCTION

The existence of educational institutions is very dependent on the interests of students as consumers. The competition among educational institutions is usually indicated by the facilities and infrastructure that support education. The institutions must have a strategy in order to be more advanced and interesting. One of these strategies is education marketing. Society always strives to create quality education. One of the efforts is to establish excellent and quality schools. As a result, many new schools have sprung up. These educational institutions positively impact society because more schools mean more options to choose from according to prospective students' wishes and abilities. The cost of education set is also increasingly competitive in each educational institution. On the other hand, for school managers, the emergence of many schools means it becomes a burden because there will be more competitors.

Competition in the world of education is inevitable. In order to maintain its existence, educational institutions are required to be able to promote their schools because good schools but not promoted properly will have an impact on the lack of recognition of these schools by the community and the minimum number of prospective students. Therefore, marketing is something that schools absolutely must implement.

Apart from introducing, the function of marketing in educational institutions is to build a good image of the institution to attract prospective students. For this reason, schools are required to carry out strategies in terms of school marketing in order to maintain and improve the quality of existing students. As referred to Law Number 9 of 2009, the establishment of a national education legal entity by implementing school-based management (Zaid, Pettalongi, & Nurdin, 2022). There are several definitions of marketing, including:

According to John R. Silber, quoted by Buchari Alma, education marketing is a process of offering quality intellectual services and character formation as a whole, with or without the help of physical products, to meet the needs of consumers (students) (Vargo & Lusch, 2004).

Meanwhile, the American Marketing Association (AMA) defines marketing as the planning and executing the conception, pricing, promotion, and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational goals (Ringold & Weitz, 2007). The emphasizing values are being more accepted by society and stabilizing the existence and significance of schools in the eyes of society. Therefore, schools must strive to produce quality products and satisfying services supported by optimal promotion to achieve the expected results properly.

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In the industrial era 4.0, school competitiveness needs to be improved, not only from the aspect of educational institutions but also from the aspect of marketing strategy and implementation. The marketing strategy and implementation provide direction concerning variables such as market segmentation, market target identification, and marketing mix because improving the quality of education requires appropriate marketing strategy and implementation (Dadzie, Amponsah, Dadzie, & Winston, 2017). One of the educational marketing frequently used by educational institutions is distributing brochures, making pamphlets and visiting educational institutions where the prospective students are (Moogan, Baron, & Harris, 1999). Technological advances have been very rapid, and educational marketing strategies using social media have also begun to develop. Most people are already able to master technology, especially social media. This fact greatly supports an educational institution to utilize social media as a marketing strategy (Khan, 2013).

By implementing an education marketing strategy through social media, it is hoped that educational institutions will be able to market their schools and attract the interest of prospective students (Nurdin & Aratusa, 2020). Many users of educational services seek information, especially education, on social media such as Instagram, Facebook and WhatsApp, it is deemed appropriate to market educational institutions through social media in the current millennial era (Herminingsih, Nurdin, & Saguni, 2022).

Regarding education marketing strategy through social media, Khalifah Islamic Elementary School Palu, located at Munif rahman Street No.99A, Kabonena, Palu City, is a school that uses this strategy. At the beginning of the opening of registration for new students, the school promoted their school through brochures and visited educational institutions. As time goes by and technology develops, this school improves the quality of its marketing in the field of social media. Marketing education through social media is very successful in attracting the interest of prospective students, as evidenced by the increasing number of students enrolled every year. Based on the researchers' initial research, this school is redeveloping its marketing by creating social media accounts such as Facebook, Instagram, WhatsApp, and the school's website. These social media accounts are very effective in marketing education in this millennial era.

## II. LITERATURE REVIEW

### A. Education Marketing Strategy

Education marketing strategy is one way of introducing products (school) to consumers (students), and this is important because it will relate to the profits to be achieved by educational institutions. The marketing strategy will be optimally useful if supported by structured planning both externally and internally at educational institutions. Education marketing strategy is basically a comprehensive, integrated and unified plan in the field of marketing which provides guidance on activities to be carried out to achieve marketing objectives in educational institutions.

Every year, educational institutions organize new student admissions hence technical unit or information section on community service is needed, one of which is to handle publications and information on the acceptance of prospective new students (Nurdin, Agam, & Adawiyah, 2023). Of course, there are many ways to promote schools in this millennial era, such as through Facebook, Instagram, WhatsApp, school websites and other social media, making it easier for prospective students to dig up information about the school.

In an education marketing strategy, educational institutions must optimize their marketing methods by highlighting their eminence and creativity to attract the interest of prospective students to enroll in the school. Besides, it is mutually beneficial between the two parties. Marketing education through social media is highly needed in this millennial era to keep up with the times so that it can continue to exist and maintain schools in great demand by students (customers).

Education marketing strategy through social media is an application of marketing strategy in the world of education that uses social media as a tool for marketing an educational institution. It is more effective, especially in the millennial era, where the majority of people are more active in using social media as a tool to dig up information, including in the field of education. Social media as a marketing tool in the world of education in the 4.0 revolution era is a very appropriate choice because it is increasingly accessible to various groups, especially in the education sector.

The application of marketing in the world of education is to create satisfaction for education customers. When discussing satisfaction, it must be realized that satisfaction differs from one person to another, meaning it deals with several things. Strauss & Neuhaus (Stauss & Neuhaus, 1997) distinguish five types of satisfaction and two types of dissatisfaction based on a combination of specific emotions towards the service provider, expectations regarding the future performance capabilities of the service supplier, and behavioral intention to re-select the service provider concerned. Each type of the satisfaction is described as follows:

a. *Demanding customer satisfaction*

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Demanding customers satisfaction is considered as a relationship with service providers which are showed by positive emotions, especially optimism and trust. Based on past positive experiences, customers with this type of satisfaction expect that the service provider will be able to satisfy their increasing expectations in the future. Besides that, they are willing to continue a satisfying relationship with the service provider. As such the customers' loyalty will depend on the service provider's ability to improve its performance in line with the customer demands (Nurdin & Jannah, 2022; Ofori, Boakye, & Narteh, 2018).

### *b. Stable customer satisfaction*

There are customers who have passive aspiration levels and demanding behavior. Their positive emotions towards service providers are characterized by steadiness and trust in the current relationships, where they want things to stay the same. Based on the positive experience that has been formed, they are willing to continue the relationship with the service provider (Matzler, Hinterhuber, Daxer, & Huber, 2005).

### *c. Resigned customer satisfaction*

Customers of this type feel satisfied, but not as a result of meeting their expectations, but rather based on an unrealistic impression. Their behavior tends to be passive, and they tend not to be willing to make various efforts to demand improvements (Stauss & Neuhaus, 1997).

### *d. Stable customer dissatisfaction*

Customers are dissatisfied with the service provider's performance but tend to do nothing. Relationships with service providers are manifested by negative emotions and they assume that their expectations in the future will not be fulfilled, and do not see any opportunities for change and improvement.

### *e. Demanding customer dissatisfaction*

It is characterized by the level of active aspiration and demanding behavior. The emotional level of dissatisfaction raises protests and opposition. They actively demand improvement. Thus the satisfaction of customers or students is one of the results of education marketing.

The task of building charitable, moral and civilized human beings is covered by educational initiatives. Education aims to build a whole being as an independent person and at the same time as a dignified member of society. In essence, Islamic education emphasizes all these aspects and wants to realize all kinds of education because it is the education for everybody, including the mind and heart, spiritual and physical, as well as morals and skills (Palinge, Nurdin, & Rusdin, 2022).

## EDUCATION MARKETING THROUGH SOCIAL MEDIA CONTENT

There are several social media that are widely used by the community:

### *a. Instagram*

The development of various gadget technologies has transformed the internet as a form of education media (Nurdin, 2022). The essence of educational science is the science constructed in, developed, and applied to the world of education. The application of educational science is related to the development of science and technology but is still in line with the goals of education. Mass media enables anyone to publish and communicate anything, to anyone, from anywhere and at any time, as long as an internet connection is available (Nurdin, 2016; Nurdin, Stockdale, & Scheepers, 2013). Instagram was founded in 2010 by founded by Kevin Systrom and Mike Krieger. It was a startup technology company that focused on developing applications for mobile phones (Habibah, Asmawati, Fitriingsih, & Nurdin, 2021). Initially, Systrom and Krieger wanted to create an application that only focused on pictures. After several trials, they finally found an application that focused on pictures, comments and the ability to like a photo which was finally named Instagram.

Social media is the media used most by industries, organizations and institutions today. It is a communication medium that provides a new way of conveying and publishing messages relatively faster, cheaper and more effectively than conventional media. Instagram is a social media that can be used as a medium to share photos or videos about education marketing (Douglas et al., 2019). *Instagram* is a photo-sharing application that allows users to take photos, apply digital filters, and share them through various social networking services, including the *Instagram* application itself.

Instagram is a smartphone social media application that has almost the same function as other social media. The difference is that Instagram focuses more on taking photos and videos as well as sharing information with other users. The advantage of instructional video media assisted by Instagram compared to other social media is its attractiveness because it is equipped with illustrations or pictures, can be accessed anywhere and anytime, easy to use, and has unlimited users (Lam, Ho, & Chiu, 2023).

In the photo and video upload feature, Instagram users can select photos or videos from the gallery to be uploaded or album on their cellphones or directly use the camera available. The image or video can be edited to enhance its appearance. Users can upload a maximum of 10 photos at a time or a 30-second video.

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### b) Captions

Captions are descriptions for each uploaded photo or video. An interesting caption written by the user will interest followers in reading the entire caption.

### c) Comments

This feature is located at the bottom of the photo or video. Its function is to comment on each upload.

### d) Hashtags

*Hashtags* on *Instagram* are used to group uploaded photos or videos and facilitate other users to find the upload easily according to the desired image.

### e) Likes

The like feature allows *Instagram* users to like uploaded photos or videos by pressing the love sign at the bottom of the photo or video.

### f) Location tags

This feature allows users to pin the location of the uploaded photos. Online businesses can include a location when uploading it so that the photo can be identified by a certain area and searched using the pinned location.

### a.) Steps of education marketing through Instagram

*Instagram* is one of the social media that can be utilized to carry out education marketing promotions. To start marketing education through *Instagram*, the steps that must be implemented are:

1. Provide clear information
2. Apply interesting feeds
3. Create photo and video content
4. Regularly post educational marketing content
5. Make *Instagram* for educational marketing promotions

### b. Facebook

*Facebook* was first launched on February 4, 2004, by Mark Zuckerberg. It is a technological facility where users can socialize or interact in cyberspace. With this social media, users can find friends, send messages, save, and send photos and videos. They can access *Facebook* using a mobile phone only by sitting on the couch relaxing or whilst doing any activity. When a photo or video is uploaded, anyone who uses *Facebook* can see it. It will get *likes* and *comments* from them. *Likes* and *comments* are very influential in terms of business, especially positive comments about products or services.

## III. METHODOLOGY

This study uses a type of qualitative approach using a descriptive form. Qualitative research is a research process that is carried out fairly and naturally in accordance with objective conditions in the field without any manipulation (Askar, Pettalongi, & Nurdin, 2022). The type of data collected is mainly qualitative data. Qualitative descriptive research is a method of researching the status of a group of people or objects to make a descriptive, systematic, factual and accurate description of the facts or phenomena being investigated. In addition, this descriptive research seeks to describe and interpret what is there (the existing conditions or relationships, ongoing processes, ongoing effects and effectiveness).

This research was conducted at the Khalifah Islamic Elementary School Palu. The school was chosen because its educational marketing through social media is in accordance with this research. Besides, compared to several schools in Palu, Central Sulawesi, the researchers considered it a representation of a school with good educational marketing, which continues to progress every year.

This study uses qualitative methods. In qualitative research, the use of theory is only a guide so that the research focus is in accordance with the facts in the field (Nurdin & Pettalongi, 2022; Nurdin, Stockdale, & Scheepers, 2016). By applying a qualitative approach, the data is collected by interacting directly in the field. In other words, the implementation and the facts of mastery learning in increasing students' understanding of Islamic religious education subjects can be done through direct observation, in-depth interviews with informants, and reviewing various written documents.

The location of this research is Senior High School 2 Sigi regency in Indonesia. The reason the researcher chose the school was based on several conditions, including mastery learning that has been implemented at the school since 2015. Then the school has become a reference school for four other schools in Sigi Regency. Furthermore, the school is also the third-ranked school at the Central Sulawesi Province level in 2018 and has been accredited with an A rating.



### IV. RESULTS AND DISCUSSION

#### A. Implementation of Mastery learning

##### Education Marketing Strategy through Social Media at Khalifah Islamic Elementary School

The school principal and vice principal for student affairs stated that marketing strategy is the process of organizing and planning strategy and determining social media.

According to the school principal, planning the right marketing strategy can have a positive impact on schools, especially in attracting students who want to enroll at the Khalifah Islamic Elementary School Palu.

Regarding the media applied at the School in planning educational marketing, the following is his opinion:

In my opinion, education marketing planning through social media includes Instagram, Facebook, and WhatsApp as a medium for promoting educational marketing, because without proper planning our school may not develop.

The statement of the Vice Principal for Student Affairs was reinforced by the principal, who stated that he realizes that the development of social media was able to optimize opportunities for development. Following is the statement:

In my opinion, Instagram, Facebook, and WhatsApp are smartphone applications specifically for social media that have space of photo and video appearances to share with other users.

In this case, the school principal said that at Khalifah Islamic Elementary School Palu, organizing is an activity of dividing work among individuals involved in an organization in order to optimize social media use. The statement of the school principal as follows:

I said that organizing is a process of determining, grouping, and managing these various activities, providing the necessary tools to achieve goals, and placing people in each activity. Someone becomes an admin in spreading social media on smartphones for the convenience of education marketing.

The education marketing strategy is the process of planning, setting goals and marketing carried out by educational institutions to satisfy consumers in the education sector. As the results of interviews with the Principal of Khalifah Islamic Elementary School Palu are as follows:

In my opinion, the education marketing strategy is the process of planning and setting goals as well as implementing education marketing carried out by an educational institution to attract consumers' interest so that these consumers can enter the field of education, especially in this school itself.

The opinion regarding the education marketing strategy was also expressed by ArifRahman Hakim, S.Pd as deputy head of Student Affairs at this school, as follows:

In my opinion, the education marketing strategy is a strategy carried out by educational institutions to market their schools so that they are known by the community and attract public interest in the field of education.

Based on the opinion of the school principal and deputy head of student affairs, marketing strategy is a process of marketing activities that has planning, objectives and marketing implementation to attract public interest in education.

According to the deputy head of Student Affairs, the right marketing strategy can positively impact schools, especially in attracting students who want to enroll at Khalifah Islamic Elementary School Palu, evidenced by the increasing number of new students each year. Following his opinion:

In my opinion, marketing education through social media is very important, because without the right strategy, our school will probably not develop to this level, especially in terms of the number of prospective new students, which increases by 5% to 10% every year.

The statement by the Deputy Head of student affairs was reinforced by the principal, who stated that the number of prospective students increased by implementing marketing through social media. The following is the statement of the principal:

The increasing number of students with education marketing strategies through social media has been proven by the school. The schools generally understand to use or apply their marketing by using brochure promotions and visiting other schools. However, in 2016, our school tried to market the school via social media, starting with Instagram, Facebook, and then WhatsApp.

In determining the right education marketing strategy, the role of marketing mix theory cannot be separated. Because in marketing mix theory, there are several points that can be used as a basis for achieving marketing targets. Likewise, what was done by Mr. Arif Rahman Hakim as the Deputy Head of student affairs at Khalifah Islamic Elementary School Palu. He explained that even though his party had yet to use the marketing mix theory officially written on paper, he acknowledged that what the school had done in terms of school marketing was in accordance with the marketing mix theory. The following is the statement from the Vice Principal of Student Affairs:

In writing, I cannot confirm yet, but indirectly what we are doing is in line with and in accordance with the existing marketing mix theory, for example, including the school's location, achievements, and facilities, all of which are summarized in the school

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profile available on brochures, websites and social media accounts owned by the school. We try as much as possible so that our school is in demand by the community, especially prospective new students.

In marketing an educational institution, steps must be taken to attract prospective students or the local community. Mr. Mulyadi Slamet, the social media admin, said that the steps taken by the school were by utilizing student guardians, alumni, and several social media accounts. The following is a statement from Mr. Salim:

The strategy we are implementing to market the school is through the guardians of students and alumni. The one we are currently trying to optimize for a few years is through social media. The existence of social media is very helpful for the marketing process in the community. So, it is not just a talk but can be proven through existing social media accounts. Apart from that, we continue to use pamphlets and brochures as a form of our endeavor. Agreeing with Mr. Mulyadi Slamet, the school principal said that in the marketing process, Khalifah Islamic Elementary School Palu is also using social media, print media and alumni.

The following is the principal's statement:

Our marketing strategy remains the same as the school's marketing strategy in general, using print media such as brochures. The only difference is that we also use online media such as Instagram, Facebook, and WhatsApp as a means of media promotion for our school. There is one more way that I think is also quite good, that is through alumni.

A teacher told some of the processes of preparing the marketing strategy carried out by Khalifah Islamic Elementary School Palu, starting from the process of forming a committee, setting targets, determining marketing costs, and the promotion until new students' admission process. These will be discussed at the PPDB (New Student Admission) meeting. Here is the statement:

We have a PPDB committee meeting before every new student admission process to form a team and share tasks related to school marketing. At the meeting, everything will be discussed, starting from forming a committee, setting targets, determining marketing costs, and the promotion process to the admission of new students. Everything will be discussed there later.

The principal also stated that he was the main person in charge of the program.

I am the main person in charge. Then, I have the deputy head of student affairs and the school's social media admin form a team as the committee for new student admissions (PPDB). In this case, there is no division of organizational committees. All are in for the work so that they do not depend on each other to do the work but instead reinforce each other.

In the process of determining the target market carried out by the school, the vice principal of student affairs said that several steps were taken, one of which was identifying the problems and obstacles encountered in the previous year's marketing process. Here is the statement:

We identified last year's marketing process as an instrument to increase targets, such as why last year's new student applicants dominated only from Palu. So the following year, we are trying to improve our target of achievements so that new students who register are not only from Palu but also from outside of it.

At the interview stage, he also said that the success rate of the marketing strategy implemented by the school could be seen from the increase in the number of new student applicants each year. Here is the statement:

In my opinion, the number of applicants every new school year reflects how successful the marketing process that our school has carried out is. If the number of registrants increases from the previous year, it is considered successful. On the contrary, if not, it means that our strategy is not successful. Thank God, every year, our school has increased in it.

The school principal, added that the increase in enthusiasts from outside Palu was also one of the measures of the school's success rates in marketing the school. Here is the statement:

It can be seen from the number of prospective new students and the number of enthusiasts from various regions. For example, this year, there are quite a number of prospective new students from outside Palu.

A student at Khalifah Islamic Elementary School Palu, stated that social media was very helpful and very good to use as an education marketing medium. As stated:

I think the existence of education marketing through social media is very helpful in introducing schools. Especially in this digital era, schools should be able to compete in terms of marketing education so that schools continue to exist and be known in the future, both regionally and nationally.

Strategic location placement also greatly influences the interest of the community and prospective new students. So does access to the school location and the amenities at the school location. Mrs. Rosmayanti said that the location of Khalifah Islamic Elementary School Palu is very strategic, access to schools is easy to reach, and the location itself is very convenient for the teaching and learning process. Here is the statement:

In my opinion, it is very strategic, because the school's location is in the city center, yet not too crowded so students can focus on participating in learning. Highway access is also very easy to reach. So it is not difficult to get to the school location.

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Based on the opinions above, it can be concluded that the education marketing strategy is an activity process designed to plan an education marketing process, starting from determining promotions to the process of implementing education marketing that can attract and satisfy customers in the education sector.

As conveyed by another participant, the social media admin, regarding the development of the marketing strategy used by Khalifah Islamic Elementary School Palu, initially, it is only by using brochure media and visiting other schools as a school marketing medium. However, with the development of the digital era, schools are now utilizing social media as one of the marketing media. As stated by the school operator, as follows:

From the time this school was founded, the education marketing used traditional methods, using only brochures, banners, and alumni. Since 2017, we have started using Facebook as a new medium for our marketing media. Then in the same year, we got a new alternative for marketing media via Instagram. In early 2018, we also added marketing media through WhatsApp. Until now, we continue to develop and market our school through existing social media accounts as a form of our endeavor to attract the public's interest in sending their sons/daughters to our school.

### **The Impact of Education Marketing through social media on the number of new students**

In the implications of the effectiveness of marketing education through social media, prospective students are obtained. The same applies to the Khalifah Islamic Elementary School Palu, which markets its school through social media. Mulyadi Slamet as the admin at the Khalifah Islamic Elementary School Palu, conveyed its influence towards the prospective students the school got. The following are the results of the interview:

All social media we use are very influential, especially as school information media. WhatsApp as a universal information medium about schools is very helpful in marketing, especially in the field of education. We also use Facebook and Instagram as photo and video-based information media.

The deputy head of student affairs also expressed similar opinion. Here is his opinion:

Using social media as education marketing makes its reach wider in marketing schools, and disseminating school information becomes easier. The public can see concrete evidence from our school in the form of videos and photos on social media accounts that we use as a marketing tool.

In terms of education marketing through social media, there are many challenges. Especially in the digital era like today, many schools, both public and private schools, use social media as a marketing tool. As stated by the Deputy Head of Student Affairs at Khalifah Islamic Elementary School Palu regarding the challenges of education marketing through social media:

Talking about education marketing through social media, it certainly does not escape from many challenges. The first challenge is the response of the community and prospective new students towards the marketing content shared through social media, that is, how to make them notice, respond well, and be determined to enroll in this school. The second is the competition among schools, especially in Palu itself, since many schools already use social media as a marketing tool for both private and public schools. Therefore, we continue to strive and make as much effort as possible to make our school acknowledged by the whole society, both outside and within Palu. In the marketing world, competition always exists, and our school continues to make updates through social media as a marketing tool.

The effectiveness of education marketing through social media can be seen through the new students who enroll because they find the profile of Khalifah Islamic Elementary School Palu through social media. Here is the statement:

At first, I was confused about which school to go to. Then, there was a teacher who offered Khalifah Islamic Elementary School Palu. I found the pamphlets and brochures distributed via Facebook, and finally, my child enrolled on this school.

From the explanation above, it can be seen that the marketing of education by Khalifah Islamic Elementary School Palu is frequently done. It is indicated by the increasing recognition of the school by the public and prospective students. With the marketing of education through social media, it is considered very helpful to market the schools so that they will be known to people from the lower middle class and upper middle-class people. The increase in the number of new students and the recognition of the school by various groups of people certainly must be connected to the education marketing strategy through social media. The effectiveness seen at the Khalifah Palu Islamic Elementary School itself is very good, as evidenced by the increase in enthusiasts who enroll the Khalifah Palu Islamic Elementary School.

Social media has a massive influence in the world of marketing, especially in the field of education. Schools can market their schools through any social media they want to use in the marketing process. The Khalifah Islamic Elementary School Palu uses social media including Instagram, Facebook, and WhatsApp.

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With marketing through social media, this school is able to compete at both regional and national levels because the school can show the achievements that have been achieved as well as the descriptions and pictures of the school, which is expected to attract the interest of prospective new students to enroll at Khalifah Islamic Elementary School Palu.

Then, the use of social media as a marketing tool is considered very effective in the educational marketing process. Apart from not being too complicated, marketing through social media can be done at any time without having to wait for the new school year. In essence, marketing education through social media has very important implications for schools, especially Khalifah Islamic Elementary School Palu, which has used social media as a marketing tool and gets a good impact from it in the field of education (Jumahir, Nurdin, Pettalongi, Fitri, & Aftori, 2023).

### V. CONCLUSION

Education marketing strategy through social media at Khalifah Islamic Elementary School Palu uses the educational marketing mix approach, commonly known as planning, organizing, strategy, and determining social media. For the marketing process, social media has been used as the school marketing medium. The social media used are Instagram, Facebook and WhatsApp.

The influence resulting from marketing education through social media is evidenced by the increase in the number of students each year from 5 to 10%. The school was recognized by the wider community both within and outside the city of Palu by marketing education through social media. Parents/guardians of students register their children at Khalifah Islamic Elementary School Palu after seeing the school's profile through social media. Moreover, with the marketing of education through social media, schools are able to compete with other schools, especially in the field of education marketing.

Through the marketing of education through social media, this school is able to compete at both regional and national levels because, with it, the school can show the achievements that have been achieved as well as the descriptions and pictures of the school, which will be to attract the interest of prospective new students to enroll at Khalifah Islamic Elementary School Palu.

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## Relationship between Nurse Performance and Implementation of Infection Prevention and Control at Hospital X Bogor, Indonesia



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**ABSTRACT:** The hospital is a place for people to get treatment and health services, and expect the best treatment. However, due to the high rate of Healthcare-Associated Infections (HAIs) in hospitals, health workers must be able to take Infection Prevention and Control (PPI) measures; but the workload, work environment, motivation, and attitudes drive the performance of nurses in providing nursing care, which can have an impact on the implementation of PPI. The purpose of this study was to determine the relationship between nurse performance and respondent characteristics with the implementation of infection prevention and control in the inpatient room of Hospital X in Bogor Regency, Indonesia. The method in this study is descriptive-analytic with a cross-sectional approach with a total sampling of 45 respondents. The results of the chi-square test obtained a p-value of 0.001 <0.05, which means that there is a significant relationship between the performance of nurses and the implementation of infection prevention and control. It can be concluded that the better the nurse's performance, the greater the opportunity to be able to carry out infection prevention and control actions properly. Researchers recommend improving the quality of nurses by providing retraining or retraining to nurses to add experience and insight so that it will increase the work ethic that is beneficial for the implementation of infection prevention and control properly organized by hospital management.

**KEYWORDS:** Infection, Performance, Prevention and Control, Nurse.

### I. INTRODUCTION

Healthcare-Associated Infections (HAIs) is a disease acquired while in a hospital that develops as a result of treatment or hospital visits, and can occur in people receiving health services, health workers, and hospital visitors (Purba et al., 2021). Healthcare-Associated Infections (HAIs) are an occasional consequence of hospitalization and one of the top ten causes of death in the United States, according to a study from the Agency for Healthcare Research and Quality, 5% to 15% of hospitalized patients in high-income countries are found to be exposed to Healthcare. Associated Infections (HAIs) (Haque et al, 2018).

The Centers for Disease Control (CDC) stated that out of 50 countries, treatment rooms (45%), NICU rooms (8%), and intensive care units (ICU) (41%) had the highest rates of health-related infection services (HAIs). With a range of 4.8 to 15.5%, the incidence of health-related infections (HAIs) in Indonesia is 15.75% greater than in industrialized countries (Asnawati et al, 2022). The percentage of ongoing Healthcare-Associated Infections (HAIs) in West Java Province is 2.2% (Aliyupuiudin, 2019). In 2010 Healthcare-Associated Infections (HAIs) were reported in ten public education institutions with an incidence of 6%-16%, with an average of 9.8%. (Ministry of Health, 2017).

Infection is a persistent problem that can push patients to hospital inpatient units. Hospitals must develop a complete program to handle infection cases because they have various complexities of problems, one of which is the Infection Prevention and Control (IPC) program. Essential Infection Prevention and Control (PPI) is carried out in inpatient units because it can reduce the number of HAIs that are carried out by means of isolation precautions, education, and training, employee health, supervision of antibiotic use, and infection surveillance (Ministry of Health, 2017).

The role of the nurse is a determinant in the successful implementation of Infection Prevention and Control (IPC) (Hutahaean & Handiyani, 2018). Improving the quality of patient safety related to infection is driven by the performance of nurses, especially the role of Infection Prevention and Control (IPC) care (Asmara et al, 2019). Infection Prevention and Control Actions (IPC) have a significant effect on nurse performance when providing nursing care to patients such as assessment, diagnosis, intervention, implementation, evaluation, and documentation (Adhiwijaya, Sjattar, & Natsir, 2019).

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However, there are some obstacles experienced by nurses in the implementation of Infection Prevention and Control (IPC) including scarcity of facilities and infrastructure, lack of knowledge of nurses, and tracking and data collection of infection cases that are not sustainable (Adhiwijaya, Sjattar, & Natsir, 2019). Therefore, the ongoing obstacles must be handled wisely because the impact that will take place is an increase in the transmission rate of Healthcare-Associated Infections (HAIs) to health workers. Based on this background, the researchers conducted an exploration related to "The Relationship between Nurse Performance and the Implementation of Infection Prevention and Control in the Inpatient Room of Hospital X in Bogor Regency, Indonesia".

## II. METHOD

This research is a descriptive quantitative analytic study with a cross-sectional approach, namely data for both dependent and independent variables and the factors that encourage it are collected at the same time (Suharmanto, 2021). The population of this study was nurses working in the Inpatient Room of X Hospital with a sampling technique using non-probability sampling and a total sample of 45 nurses. The inclusion criteria are as follows: 1) The nurse implementing the inpatient room of Hospital X; 2) Implementing nurses who work  $\leq 5$  years and  $> 5$  years; 3) Willing to be involved in research. While the exclusion criteria are as follows: 1) Nurses who are on leave; 2) Nurses in the High Care Unit (HCU) room; and 3) Nurses who are in the Covid-19 inpatient room.

This research was conducted from March to June 2023. Research ethics was carried out by interviewing the hospital with researchers regarding the research being carried out, as well as ethics for a sample of nurses at X Hospital and an ethical letter issued by KEP-K UPNVJ with letter number 148/V /2023/KEPK. The ethical principles that researchers use include respecting human dignity (respect for persons), doing good (beneficence) and not harming (non-maleficence), and justice.

The data in this study were taken using questionnaires consisting of questionnaires A, B, and C. Questionnaire A collected information such as name, age, gender, education, length of service, and participation of respondents in IPC training. Questionnaire B is a questionnaire (Nursalam, 2020) that has been modified by researchers. The questionnaire includes 25 statements of behavior, professionalism, and the nursing process. Nurse performance assessment is said to be good if  $\geq$  median value, said to be poor if  $<$  median value with median: 115.00. Meanwhile, questionnaire C is a questionnaire (Hutahaean, Handiyani, & Gayatri, 2018) and has been modified by previous researchers from previous research findings (Yulistiyani, 2022). This questionnaire uses the Likert Scale rating system, which is a scale used to measure a phenomenon such as assumptions, attitudes, groups of people, or individual perceptions (Sugiyono, 2018).

The instrument validity test in this study was conducted on 30 inpatient nurses at the Family Medical Center Hospital. Validity Test on Nurse Performance Instruments with 25 items obtained valid results with a range of Pearson Correlation values (0.417-0.758). Test the validity of the IPC Implementation instrument with as many as 14 valid items with a range of Pearson Correlation values (0.375-0.747), while there is 1 item that shows the value of  $r$  count (0.257)  $<$   $r$  table (0.361) with that 1 item being declared invalid. The reliability test on the Nurse Performance instrument in this study used Cronbach's alpha to obtain a value of  $\alpha = 0.933$ , which means that the Nurse Performance instrument has a very reliable level of reliability. The reliability test on the Infection Prevention and Control Implementation instrument obtained a value of  $\alpha = 0.796$ , which means that this instrument has reliable reliability. Data analysis in this study used univariate and bivariate analysis. Univariate analysis of the sample data can reveal a larger proportion of the population using tables of frequency and proportion distributions. While bivariate analysis was carried out to test the dependent and independent research variables using the Chi-Square test.

## III. RESULTS

The frequency distribution in this study was obtained from data on respondent characteristics based on age, gender, education level, length of work, infection prevention and control (IPC) training, nurse performance, and implementation of infection prevention and control (IPC).

**Table 1. Characteristics of Respondents Based on Age, Gender, Education Level, Length of Work, and Infection Prevention and Control (IPC) Training, 2013 (n=45)**

Characteristics	Category	Frequency (N)	Percentage (%)
Age	> 30 Years	8	17.8%
	$\leq 30$ Years	37	82.2%
	Total	45	100%
Gender	Male	5	11.1%
	Female	40	88.9%

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	Total	45	100%
Level of education	Diploma	28	62.2%
	Bachelor	17	37.8%
	Total	45	100%
Length of work	> 5 Years	11	24.4%
	≤ 5 Years	34	75.6%
	Total	45	100%
IPC training	Ever	25	55.6%
	Never	20	44.4%
	Total	45	100%

Table 1 shows that the majority of nurses in the inpatient room of Hospital X are aged ≤ 30 years as many as 37 respondents (82.2%) and most of the nurses are female as many as 40 respondents (88.9%). The highest level of education was found in Diploma graduates with 28 respondents (62.2%) with work experience >5 years for 11 respondents (24.4%) and <5 years for 34 respondents (75.6%). As many as 25 respondents (55.6%) had attended IPC training which was held at Hospital X in Bogor Regency, while 20 respondents (44.4%) had never attended IPC training.

**Table 2. Characteristics of Respondents Based on Nurse Performance at X Hospital, 2013 (n=45)**

Characteristics	Category	Frequency (N)	Percentage (%)
Nurse Performance	Good	23	51.1%
	Not Good	22	48.9%
	<b>Total</b>	<b>45</b>	<b>100%</b>

Table 2 shows that the majority of nurses have good performance, namely 51.1%. while as many as 48.9% of nurses have poor performance.

**Table 3. Characteristics of Respondents Based on Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)**

Characteristics	Category	Frequency (N)	Percentage (%)
Implementation of Infection Prevention and Control	Good	18	40%
	Not Good	27	60%
	<b>Total</b>	<b>45</b>	<b>100%</b>

Table 3 shows that the majority of nurses were unable to properly implement infection prevention and control, namely 27 respondents (60%). Meanwhile, 18 respondents (40%) were able to properly implement infection prevention and control. Bivariate analysis in this study used the Chi-Square test to determine the relationship between age, gender, education level, length of work, infection prevention and control training (IPC), and nurse performance with the implementation of infection prevention and control in the inpatient room of X Hospital in Bogor Regency

**Table 4. Analysis of Nurse Age Relationship with Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)**

Age	Implementation of Infection Prevention and Control				Total		OR (95% CI)	p-value
	Good		Not Good		N	%		
	N	%	N	%				
> 30 Tahun	3	37.5	5	62.5	8	100	0.880	0.874
≤ 30 Tahun	15	40.5	22	59.5	37	100	(0.182-	
<b>Total</b>	18	40	27	60	45	100	4.250)	

Table 4 shows that as many as 62.5% implement infection prevention and control poorly among those aged > 30 years. The results of the Chi-Square statistical test showed a p-value of 0.874 which means that there was no significant relationship between the age of the nurse and IPC implementation in the inpatient room of X Hospital in Bogor Regency.



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**Table 5. Analysis of the Relationship between Gender and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)**

Gender	Implementation of Infection Prevention and Control				Total		OR (95% CI)	p-value
	Good		Not Good		N	%		
	N	%	N	%				
Male	2	40	3	60	5	100	1.000	1.000
Female	16	40	24	60	40	100	(0.150-	
Total	18	40	27	60	45	100	6.671)	

Table 5 shows that 60% of female respondents implemented IPC poorly. The Chi-Square statistical test yielded a p-value of 1,000, which indicated that there was no relationship between gender and IPC implementation in the inpatient room of X Hospital in Bogor Regency.

**Table 6. Analysis of the Relationship between Education Level and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)**

Level of education	Implementation of Infection Prevention and Control				Total		OR (95% CI)	p-value
	Good		Not Good		N	%		
	N	%	N	%				
Diploma	13	46.4	15	53.6	28	100	2.080	0.259
Bachelor	5	29.4	12	70.6	17	100	(0.578-	
Total	18	40	27	60	45	100	7.486)	

Table 6 shows that as many as 70.6% with an undergraduate/Ners level of education implement IPC poorly. The results of the Chi-Square analysis showed a p-value of 0.259 which means that there was no relationship between education level and the implementation of infection prevention and control in the inpatient room of Hospital X in Bogor Regency.

**Table 7. Analysis of Relationship between Length of Work and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)**

Length of work	Implementation of Infection Prevention and Control				Total		OR (95% CI)	p-value
	Good		Not Good		N	%		
	N	%	N	%				
> 5 Years	3	27.3	8	72.7	11	100	0.475	0.322
≤ 5 Years	15	44.1	19	55.9	34	100	(0.107-	
Total	18	40	27	60	45	100	2.107)	

Table 7 shows that as many as 72.7% with work duration > 5 years cannot implement IPC properly. The results of the Chi-Square analysis showed a p-value of 0.322 which means that there was no significant relationship between the length of work of nurses and the implementation of IPC in the inpatient room of Hospital X in Bogor Regency.

**Table 8. Analysis of the Relationship between Infection Prevention and Control Training (IPC) and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)**

IPC Training	Implementation of Infection Prevention and Control				Total		OR (95% CI)	p-value
	Good		Not Good		N	%		
	N	%	N	%				
Ever	13	52	12	48	25	100	3.250	0.066
Never	5	25	15	75	20	100	(0.903-	
Total	18	40	27	60	45	100	11.696)	

Table 8 shows that the majority of nurses who have never attended IPC training cannot implement IPC properly, as many as 75%. The results of the Chi-Square statistical test showed a p-value of 0.066 which means that there was no significant relationship

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between Infection Prevention and Control (IPC) training and the implementation of IPC in the inpatient room of Hospital X in Bogor Regency.

**Table 9. Analysis of the Relationship between Nurse Performance and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)**

Nurse Performance	Implementation of Infection Prevention and Control				Total		OR (95% CI)	p-value
	Good		Not Good		N	%		
	N	%	N	%	N	%		
Good	15	65.2	8	34.8	23	100	11.875 (2.677-52.670)	0.001
Not Good	3	13.6	19	86.4	22	100		
Total	18	40	27	60	45	100		

Table 9 shows that as much as 86.4% with poor performance also implemented IPC poorly. The results of the Chi-Square analysis showed a p-value of 0.001 which means that there was a significant relationship between nurse performance and IPC implementation in the inpatient room of X Hospital in Bogor Regency. From the results of the analysis, OR = 11,875 (95% CI = 2,677-52,670) was also obtained. Because the value of OR > 1, it can be seen that nurses with good performance have an 11.8 times greater chance of implementing IPC properly than nurses with poor performance.

#### IV. DISCUSSION

Based on the characteristics of the respondents related to age, it was found that the majority of nurses were aged  $\leq 30$  years. This is in accordance with the findings of Hutahaean, Handiyani & Gayatri (2018) where the majority of nurses are between 26 to 30 years old which is of productive age. The findings of this study are also supported by the findings of Kristianingsih, Arofiati & Widakdo (2022), namely the majority of nurses are <30 years old (67.0%), this study reveals that this age is also a productive age, where as one gets older, a person becomes more able to make decisions, think wisely, control emotions, and be tolerant of the views of others. In Ibrahim & Rahmi's research (2021) most of the age of the nurses is aged 21-30 years (69.7%) this is because they have enthusiasm, agility, and are found to think critically to carry out their duties as nurses while in the productive age range.

This study shows that there is no relationship between age and IPC implementation in inpatient rooms at Hospital X in Bogor Regency as evidenced by a p-value of 0.874 ( $p > 0.05$ ). This is in line with research conducted by Alemania, Djafri & Pabuti (2018) which found no relationship between the age of the respondent and the implementation of infection prevention and control with a p-value of 0.648. Research by Powell-Jackson et al (2020) also says that there is no difference in certain age groups in the performance of nurses in implementing IPC between good and poor. Nurses who are younger (<30 years old) are able to apply IPC well compared to nurses aged >30 years due to stronger motivation, physical and spirit. In addition, nurses with a younger age have a high spirit of idealism and have a sense of wanting to fulfill higher responsibilities than nurses with old age.

The majority of the gender of the nurses in this study were female (60%). This is supported by research by Alemania et al (2018) that the majority of the research respondents were women (85.71%). This is in accordance with the findings of Asmara et al (2019), namely the majority of nurses are female with a total of 68.8%. Women are considered more able to comply with the authority and regulations that apply than men. However, it turns out that women also have a tendency to take more days off from work/leave than men because of the nature of women to get pregnant and give birth.

The results of the analysis show that there is no significant relationship between gender and IPC implementation as evidenced by a p-value of 1,000. The same thing was found in Alemania, Djafri & Pabuti's research (2018) that found no relationship between gender and IPC implementation. In research by Puspita, Oktariani & Rizqiea (2020) it was also found that there was no consistent relationship between male and female gender in problem-solving, motivation, analysis findings, social and communication skills, learning acquisitions, and competitive drive.

A high level of education affects the level of knowledge of nurses. This can be interpreted that the higher the level of education, the higher the knowledge and competence carried out by nurses on the performance carried out by Arifianto, Aini & Kustriyani (2019). However, the findings of this study showed that there was no relationship between education level and the implementation of IPC in the inpatient rooms of X Hospital as evidenced by the p-value of 0.259. The same thing was found in the research of Alemania, Djafri & Pabuti (2018) which explained that there was no significant difference between the level of education and the implementation of IPC with a p-value of 0.102.

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The findings of this study also showed that among the 45 people studied, 46.4% of nurses with Diploma education levels could implement infection prevention and control well. According to Daryati, Subekti & Ekacahyaningtyas (2020), the majority of nurses in the study were Diploma nurses, namely 52.1%. Diploma nurses first experience a process of adaptation to the world of work in hospitals compared to Bachelor/Ners. Meanwhile, Handayani, Suarjana & Listyowati (2019) stated that nurses with a bachelor's degree in nursing had a 0.33 times greater chance of complying with hand washing than nurses with a Diploma degree in nursing. Nurses with a higher degree of nursing have a higher probability of thinking so that in carrying out nursing actions, nurses with higher education will better implement IPC in hospitals (Handayani, Suarjana & Listyowati, 2019).

Based on the characteristics of the respondents related to the length of work, it was found that the majority had a length of service of <5 years. This research is in line with research conducted by Heriyati, Hatisah & Astuti (2020) which shows the results that nurses with 1-5 years of service are 60.6% more than nurses with 6-10 years of service with a total of 39.4 %. The results of the analysis also showed that there was no relationship between the length of work and the implementation of IPC infections in inpatient rooms at Hospital X in Bogor Regency with a p-value of 0.322. The results of research conducted by Handayani, Suarjana & Listyowati (2019) also stated that there was no correlation between length of service and hand washing compliance as a form of implementing infection prevention and control with a p-value of 0.139.

The same thing was found in research conducted by Alemania, Djafri & Pabuti (2018) that found no significant difference between the average length of work and the implementation of good and bad IPC as evidenced by a p-value of 0.256. However, a different thing was found in Shanty, Uktutias & Muhadi's research (2020) that there was a relationship between the length of work and adherence to infection prevention and control as evidenced by a p-value of 0.023. The majority of nurses in the study had a length of service of >10 years as many as 18 nurses. Of the 18 nurses with >10 years of service, as many as 100% of nurses had good hand hygiene compliance. The IPC actions carried out were installing infusions, changing bandages, handling post-operative medical waste, and injecting.

The findings of this study indicate that the majority of nurses have attended IPC training (55.6%). This is in accordance with Haryanto's findings (2022) that as many as 84% of respondents had participated in IPC training. The results of the research are in line with the research of Alemania, Djafri & Pabuti (2018) which states that 87.5% of nurses in the Inpatient Surgery Room of Dr M. Djamil Hospital Padang have received IPC training. The results of the analysis of this study also showed that there was no relationship between IPC training and the implementation of infection prevention and control in inpatient rooms at Hospital X in Bogor Regency as evidenced by a p-value of 0.066.

The same thing was also found in research conducted by Alemania, Djafri & Pabuti (2018) that found no relationship between training and the application of IPC with a value of  $p = 0.674$ . The study did not provide detailed questions regarding the level of training and the number of IPC trainings attended by nurses. So this resulted in no correlation between IPC training and the implementation of infection prevention and control. Different things were found in research conducted by Nurrahmani, Asriwati & Hadi (2019) that found a relationship between knowledge and compliance with hand hygiene at Cut Meutia Langsa Hospital in Aceh. It turns out that nurses at the hospital routinely receive IPC training every year so that nurses can have good knowledge of how to apply IPC in accordance with applicable SOPs.

Nurse performance is the result of all work activities in a job function carried out in a certain period and is a combination of ability and effort to produce what is done. Nurse performance is an activity of nurses in carrying out their duties, authority and responsibilities as well as possible in achieving the main tasks of the profession and realizing goals in the organization (Adhy Purnawan et al, 2021). The results of the analysis regarding the performance of nurses found that the majority of nurses were able to implement IPC well.

This is in line with the research of Adhy Purnawan et al (2021) that most nurses have good performance, namely 82.5%. A different thing was found in Agustin et al's research (2022) where in this study the majority of respondents had a poor performance of 53.7%. A study by Adhy Purnawan et al (2021) explained that nurses who have good performance will do good prevention and control of nosocomial infections, where this performance greatly influences the prevention and control of nosocomial infections.

The results of the analysis also show that most of the nurses have implemented IPC well. This research is in line with research by Puspita, Oktariani & Rizqiea (2020) that the majority of respondents had good nosocomial infection prevention measures 65.8%. The findings of this study are also supported by the findings of Haryanto (2022), namely that overall nurses have a high Healthcare-Associated Infections behavior of 93.3%. One of the factors that nurses at Hospital X in Bogor Regency implement IPC is due to routine control and monitoring and supervision related to IPC to nurses in inpatient rooms carried out by the head nurse of IPCN.

This study shows that there is a significant relationship between nurse performance and IPC in inpatient rooms at Hospital X in Bogor Regency as evidenced by a p-value of 0.001. The Odds Ratio value in the statistical test results is 11.875 (2.677-5.670) which

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means that nurses with good nurse performance have 11.8 times greater chances of implementing IPC properly. The results of this study are in line with research by Adhy Purnawan et al (2021) that there is a significant relationship between nurse performance and prevention of nosocomial infections at RSIA Vitalaya as evidenced by a p-value of 0.008 and an odds ratio of 9.2 (1.4-58, 4) which means that nurses with good performance will be able to implement IPC properly by 9.2 times higher than nurses with poor performance.

Alfariki's research (2019) states that there is a relationship between nurse behavior and the implementation of infection prevention and control programs at the Kendari City Hospital. The results of this study explained that 18 respondents who rated the implementation of the IPC program well were (77.8%) better able to carry out nosocomial infection prevention and control. Meanwhile, 37 nurse respondents who assessed that the implementation of IPC was not good enough (70.3%) to prevent and control nosocomial infections.

The performance of nurses in the inpatient room of Hospital X in Bogor Regency is quite good, where 23 out of 45 nurses are able to have good performance. This is also supported by sufficient abilities and skills, perception, high motivation, and supervision. The results of this study are in line with research conducted by (Adhy Purnawan et al (2021) which states that nurses at RSIA Vitalaya South Tangerang improve nurse performance by increasing enthusiasm, responsibility, discipline, and actions are carried out in accordance with Standard Operating Procedures (SOP) which In addition, in order to fulfill organizational goals, nurses have the motivation and desire to do their best, as seen from their performance in the hospital.

However, there were some nurses who performed less well in this study. There were 22 out of 45 nurses who had poor performance. Nurses who have poor performance in the end are also less able to implement infection prevention and control properly. This is evidenced that 19 out of 22 nurses who had poor performance implemented infection prevention and control poorly as well. This means that the performance of nurses who are not good will increase the risk of these nurses to implement infection prevention and control poorly too.

In line with the opinion expressed by Abdullah, Andi & Pasinringi (2016) that there are still nurses who have poor performance in implementing nosocomial infection prevention in their research. This can happen because the nurse does not apply the knowledge she has in carrying out nursing actions including the prevention of nosocomial infections in the hospital. Research by Asmara et al (2019) states that the performance of nurses in implementing infection prevention and control is considered not optimal. This is caused by the implementation of infection prevention and control which is not placed as a priority in patient care measures.

The non-optimal performance of nurses in implementing IPC has resulted in the failure of the IPC program in hospitals. Many factors can affect the performance of nurses in implementing IPC in hospitals. According to Sastrohadiwiryono (2003) there are 5 factors that drive nurse performance, including skills, motivation, support received, job availability, and employee relations with the organization. Research by N. Qasem & Hweidi (2017) states that the lack of motivation of nurses in implementing IPC will lead to ineffectiveness in the performance of nurses in implementing PPI. The performance of nurses in implementing IPC is still in the poor category of 50% and this shows that the involvement of nurses in implementing the IPC program is still lacking (Asmara et al, 2019). This ultimately encourages an increase in the incidence of HAIs. Where HAIs often occur in developing countries (Ayed et al, 2019).

Research by Adhy Purnawan et al (2022) explains that to reduce the incidence of nosocomial infections, it is necessary to make comprehensive and maximum efforts to prevent nosocomial infections in every unit that is at risk for transmitting nosocomial infections. Research by Asmara et al (2019) explains that there are factors that are most related to the performance of nurses in implementing PPI. A good reward has a good opportunity to improve nurse performance. This is proven in the research of Asmara et al (2019) which states that rewards have an opportunity of 27.5 times to improve nurse performance in implementing PPI.

Nurse performance is closely related to knowledge, attitudes and skills. Improving the performance of nurses in the implementation of PPI, of course, must get management support in the form of evaluation through supervision. But unfortunately, reviews of nurse performance evaluations in hospital infection programs are still limited (Asmara et al, 2019). So that it ultimately affects the implementation of IPC in hospitals. Good nurse performance will increase the opportunity to be able to implement IPC properly. Conversely, if the nurse's performance is not good, it will increase the risk of implementing IPC poorly. This is of course supported by experience, knowledge and skills, level of education and knowledge, enthusiasm and motivation, as well as supervision by the head of the room to increase hospital nurse compliance with PPI.

## **V. CONCLUSIONS**

The description of the characteristics of nurses is dominated by age  $\leq 30$  years as much as 82.2%. The majority of nurses, 88.9%, were women. More nurses had a Diploma education than Bachelor, as much as 62.2%. The majority of nurses 75.6% have worked

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for  $\leq 5$  years, and as many as 55.6% of nurses have attended IPC training. At Hospital X in Bogor Regency, 51.1% of nurses had a good performance, and 60% of nurses had a poor implementation of infection prevention and control.

There was no significant relationship between the characteristics of the respondents and the implementation of IPC in this study due to the occurrence of several other factors, however, a significant relationship was found between the performance of nurses and the implementation of IPC in line with previous studies which said that there were still nurses who had poor performance in implementing prevention. nosocomial infection in his research. This can happen because the nurse does not apply the knowledge she has in implementing nursing actions including the prevention of nosocomial infections in the hospital.

Researchers recommend improving the quality of nurses by providing retraining or retraining for nurses to add experience and insight so that it will increase the work ethic that is beneficial for the implementation of infection prevention and control which is well organized by hospital management.

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## The Learning Styles and Preferred Learning Modalities of Freshman Students in the New Normal: Their Impact on the Academic Performance in Mathematics in the Modern World



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**ABSTRACT:** The present study aimed to focus on finding out the Learning Styles and Preferred Learning Modalities and Academic performance of the students in Mathematics in the Modern World. The respondents comprised 830 freshman students enrolled in Mathematics in the Modern World for the First Semester School Year 2021-2022 at Isabela State University-City of Ilagan Campus. The factors were categorized as follows: Profile of the students, Learning Styles, Preferred Learning Modalities, and the Academic Performance of the students in Mathematics in the Modern World. Also, it aimed to determine if there is a significant difference in the academic performance of the students when grouped according to their profile; test if there is a significant difference in the learning styles of the student when grouped according to their profile; test if there is a significant relationship between the learning styles and the academic performance of the students; and to determine if there is a significant relationship between the preferred learning modalities and academic performance of the students in the Mathematics in the Modern World subject. The data gathered were analyzed and interpreted based on the Descriptive Statistics, Analysis of Variance or the F-test and the Chi-square test, and the Micro-Stat Software Program (SPSS) computer output. The descriptive method using the survey and correlational techniques were used in this study. The use of questionnaires and standardized instruments – The VARK Learning Style Inventory by Neil Fleming was used to evaluate the student’s learning styles. The academic performance of the students was limited to the grade obtained in Mathematics in the Modern World validated by the Campus Registrar. The results reveal that in terms of profile socio-economic status, the majority of the respondents belong to families whose monthly income is at most P9, 520.00. Moreover, most students used mobile phones as the gadgets available at home for educational purposes. The results also revealed that the students have fairly satisfactory mathematics performance. There is a significant difference in the academic performance of the students in Mathematics in the Modern world in terms of sex, the field of specialization, the mother’s source of income, and the family’s monthly income. As to profiles of the father’s source of income and the gadget available at home used for educational purposes, there is no significant difference in the academic performance of the students. Most students are classified as Auditory Learners, thus, they learn best through interactive listening. The learning styles of the students differ when grouped in terms of field of specialization and family’s monthly income. Hence, students’ learning styles vary when grouped according to the abovementioned profile. As to the relationship between the learning styles of the students and their academic performance, no statistically significant relationship was found between learning styles and the academic performance of students. Therefore, the learning styles of the students have no influence on their academic performance in Mathematics in the Modern World. Online learning is the preferred learning modality of the students which is 47.40 percent of the total respondents. The study also showed that there is a significant relationship between the preferred learning modality and the academic performance of the students.

**KEYWORDS:** Learning Styles, Preferred Learning Modality, Auditory Learners, Online Learning, Academic Performance

### INTRODUCTION

Education in the Philippines has been receiving sufficient attention from the authorities and is one of the precedence sectors of the government alongside health, agriculture, and public works. The educational system in the country is comparable with other traditional practices in other neighboring countries. The traditional setup involves the physical engagement of teachers and learners within the corners of their classrooms where activities and learning assessments are administered onsite.

Conversely, in the advent of the COVID-19 pandemic wherein mobility and public activities had been put into Different levels of restriction, education systems around the world had been faced with many implications in the transition towards the “new

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normal". There are many adjustments and fine tunings needed to obtain a perfect scheme most applicable to the culture and conditions of the teaching-learning process.

Amidst the need to ensure learning continuity, traditional methods of education have been disrupted. The implementation of lockdowns and government-imposed restrictions on mobility has resulted in the physical closure of schools, colleges, and universities. As a consequence, alternative modes of teaching delivery have been adopted as substitutes for the conventional face-to-face learning. This significant disruption has not only impacted the educational institutions themselves but has also placed a burden on numerous families who are reluctant to assume the responsibility of home-schooling. It has become a profound shock, affecting not only the productivity of parents but also the social lives and learning experiences of students. In light of these uncertainties and developments, the academic community and its stakeholders are striving to find ways to uphold the delivery of quality services, so as not to compromise the most vital recipients, the students. School interventions must be established to support the government's efforts in safeguarding public health and facilitating recovery, while also mitigating the adverse effects on students and their education. Each student possesses a unique learning style, encompassing visual, auditory, reflective, active, logical, intuitive, and mnemonic aspects. Learning extends beyond mere retention of information and knowledge expansion; it involves comprehending how acquired knowledge can be applied in everyday life (Entwistle & Ramsden, 2015). To ensure continuous learning for students, Higher Education Institutions (HEIs) across the nation have adopted various delivery modalities. These modalities include the utilization of platforms such as Learning Management Systems (LMS), modular approaches, and more. When selecting a suitable platform for an academic institution, several factors must be taken into consideration, including the characteristics of teachers and students, as well as their technical capabilities, among others. However, despite these concerted efforts, concerns arise regarding students' poor performance and their level of proficiency in Mathematics (Carpio & Indama, 2021).

On the other hand, learning styles provide a significant challenge for educational institutions in the twenty-first century, given that students are expected to engage in active involvement in increasing their sense of self and societal participation (Nuankaew et al., 2019; Truong, 2016). With the reasons mentioned above, this research is an attempt to respond to the challenge of mitigating students' difficulties in the learning process during this time of the pandemic. It aims to identify the learning styles and preferred learning modalities of the students in the 'New Normal' result which will serve as baseline data for teachers in planning class instruction and adapting their methods and techniques to the student's learning styles and their preferred learning modalities. When teachers are able to meet students' learning styles and their preferred learning modalities in the execution of their classroom instruction, it is believed that despite the limitations brought about by the New Normal, classroom learning will still be maximized. Hence, students' academic performance will not be sacrificed. In addition, in order to achieve good academic performance in Mathematics in the Modern World, this study is intended to assist University administrators and faculty members in discovering answers and addressing challenges.

### **REVIEW OF RELATED LITERATURE and RELATED STUDIES**

In the modern world, education is undergoing significant transformations, driven by advancements in technology, evolving pedagogical approaches, and a better understanding of individual differences in learning. One critical aspect that influences students' academic performance is their learning styles and preferred learning modalities. Learning styles refer to the preferred methods through which individuals acquire, process, and retain information while learning modalities encompass the various sensory channels through which learners engage with educational material. Understanding the diverse learning styles of freshman students can help educators tailor their instructional strategies to optimize the learning experience and improve academic outcomes. By identifying the learning styles and modalities that align with individual students, educators can create a supportive and engaging environment that caters to their unique needs.

Aside from learning styles and teaching strategies, academic achievement is also considered as the center of interest in educational research. Studying the issue of achievement has extended beyond simple to complex issues of intelligence and prior academic achievement into how learners interact with the learning material and teaching strategies. This issue on academic achievement is particularly true in the case of the Philippine basic education, as reflected in the overall performance of the high school students. Results of the National Achievement Test (NAT) among public high schools all over the country had been declining since 2010 (Valdez, 2016). NAT is just one of the country's criteria for measuring students' academic achievement in mathematics. The Philippine NAT results provide continuous documentation of the need to put greater emphasis on improving the teaching and learning of mathematics in the country. The question is: what more must be done and taken into greater account to be able to improve the academic performance of high school students in mathematics? Dalmolin, Eet al., (2018) found that there is a correlation between learning styles and students' academic success. Also, the study by Vizehfar and Torabizadeh (2018) revealed



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that students prefer learning with diverse learning styles because it improves academic achievement. Magulod Jr. (2019) also conducted research on learning styles and academic performance and discovered a significant relationship between learning styles and student academic performance. Thus, learning styles are each person's own means of taking in, processing, understanding, and remembering knowledge. Environmental, emotional, and cognitive aspects, as well as prior experiences, influence students' learning styles.

Moreover, gaining an understanding of these learning styles is a method for cultivating a classroom environment that yields greater success compared to previous students. Consequently, it is crucial for faculty to comprehend these styles in order to develop instruction that is more suitable for individual students. The academic performance of students may be linked to their learning preferences. The success of a student is, to some extent, reliant on the teacher's understanding of their unique learning styles (Cabual, 2021).

Using a student learning style questionnaire, Hamidah and Kusuma (2020) also conducted a study to examine trends in students' learning styles during the COVID-19 pandemic period. They discovered that while students learning preferences varied, they tended to favor auditory learning styles (50%) over visual learning styles (42.11%) and kinesthetic learning (7.89%), respectively. 34 Dissimilarities between the conclusions of the already cited studies.

Moreover, as cited by Daron, C. E., (2013), Lapinig in her study concluded that many underachieving students fall behind because their learning styles are mismatched with the approaches used by their teachers and the learning modality. With the increasing use of technology in the educational process under the New Normal, it is important to evaluate the influence of learning styles in distance education and to provide empirical evidence of the impact of learning styles on academic performance in online education. Both teaching and learning styles play an essential role in learning development and achievement. Thus, the researcher shall pay great attention to discovering the students' learning styles, particularly under the New Normal.

According to Lathan (2023), while the teachers still hold authority, they act more as facilitators, coach students, and assist them in their learning. For this approach to become effective, the teachers should consider the students preferred learning styles. If students are aware of their learning styles, they will be able to cope with this approach with ease. Similarly, the term "learning styles" refers to the concept that individuals differ in regard to what mode of instruction or study is most effective for them. Proponents of learning-style assessment contend that optimal instruction requires diagnosing individuals' learning styles and tailoring instruction accordingly. Assessments of learning style typically ask people to evaluate what sort of information presentation they prefer (e.g., words versus pictures versus speech) and/or what kind of mental activity they find most engaging or congenial (e.g., analysis versus listening), although assessment instruments are extremely diverse. The most common—but not the only—hypothesis about the instructional relevance of learning styles is the meshing hypothesis, according to which instruction is best provided in a format that matches the preferences of the learner (e.g., for a "visual learner," emphasizing visual presentation of information) (Pashler, et al., 2009)

The notion that individuals are responsible for their own education poses a significant barrier to learning. However, when students assume control over their own education, the learning process becomes more effective as they imbue it with purpose (Nzesei, 2015). It is essential for teachers to comprehend the concept of customized learning. Every individual interacts with their environment during the learning process, leading to varied knowledge processing and the need for diverse learning environments. Consequently, it becomes crucial to address the challenge of creating conducive learning environments while planning such encounters, with the aim of assisting individuals in maximizing their learning outcomes (Sighn, 2017).

Verde and Valero (2021) present a comprehensive examination of various teaching methodologies employed prior to, during, and after the COVID-19 pandemic. The study elucidates the diverse approaches to instruction, including inperson learning, blended learning, and remote education, implemented at two Spanish universities—one private and one public—during the pandemic. The study's findings indicate that the COVID-19 pandemic has necessitated adjustments in teaching methodologies for both teachers and students. Particularly during periods of high COVID-19 incidence, distance education or blended education became imperative, requiring teachers to swiftly adapt to these changes. This adaptation process has led to a significant expansion of their knowledge regarding new didactic resources for classroom instruction. The results of the study demonstrate a clear preference among public university students for in-person learning, as they expressed higher satisfaction with this method compared to other approaches. Online teaching emerged as their second choice due to its high-quality class experiences, while blended learning was the least favored option. Regarding private university students, their satisfaction levels were relatively similar across the three teaching methods employed at their institution. However, they exhibited a slightly higher preference for face-to-face teaching compared to the other approaches.

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Numerous prior studies have explored the correlation between learning styles and academic achievement among college students. Williams, Brown, and Etherington (2013) have corroborated a positive association between learning styles and academic performance specifically within university contexts. Recognizing and understanding the various learning style preferences of students enrolled in applied sciences courses can ultimately contribute to more impactful learning experiences. Additionally, Alavi and Toozandehjani (2017) determined that having knowledge of students' learning styles can enhance their learning outcomes while simultaneously promoting self-actualization among students.

### **CONCEPTUAL FRAMEWORK**

This study operates on the fundamental premise that every individual is unique. Just like snowflakes, no two people are identical, even in the case of identical twins. While humanity shares equal worth, each person possesses distinct characteristics and attributes (Richards, S., 2020). Also, every student develops in his way including the way he learns. Different students learn in different ways, so requiring everyone to follow one particular method of learning could limit two-thirds or more of any given class. In addition, Neil Fleming's VARK Model, which classifies learners into four (4) groups according to their preferred learning styles, forms the basis of this study (New School of Architecture & Design, 2021). Education continues to promote learning styles as a way for teachers to support students and differentiate lessons. While there are multiple models related to learning styles, one of the most popular models for understanding learning styles is the VARK model. The study categorizes four distinct sensory modes and introduces a separate category for multimodal learners. Aural learners derive the greatest benefit from listening to lectures, participating in tutorials, and employing tape recorders. Visual learners, on the other hand, gain the most advantage from visual aids such as graphs, flow charts, and photographs. Kinaesthetic learners acquire knowledge through hands-on practice and real-life experiences, while read/write learners excel by taking meticulous notes and engaging in text-based reading.

The unexpected arrival of the COVID-19 pandemic caught society off guard, leaving little time for adequate preparation to mitigate its impact. The education system in the Philippines, in particular, found itself in a critical predicament due to the rapid spread of this health crisis. Higher Education Institutions faced the daunting task of prioritizing the safety of their academic community by minimizing the risks of infection. Consequently, in light of the imposed community quarantine measures, the continuation of regular face-to-face classes had to be immediately suspended. This presented a Herculean challenge: finding alternative ways to ensure teaching and learning could persist beyond the conventional in-person instruction. Therefore, there arose an urgent necessity to explore innovative learning modalities that would facilitate a transition from traditional methods to more flexible teaching and learning options.

Hence, the study argues that in order to provide equal learning opportunities, it is crucial to consider different learning modalities, such as VARK. The study is based on Cabual's proposition that effective teaching and student learning can be achieved by acknowledging learners' styles and preferred modalities. Each student possesses their own unique learning style and preferences. Considering that learners have varying circumstances in terms of time, pace, and location, offering different delivery modes allows for customized learning experiences that cater to students' needs for accessible and high-quality education. Additionally, providing students with the option to choose their preferred delivery mode from the time of enrollment promotes convenience. The paradigm shifts in the teaching and learning processes within Philippine higher education require collaboration among stakeholders and the fostering of a culture of knowledge sharing, resource pooling, and the adoption of best practices. Every individual is called upon to participate in this transition or transformation towards the "new normal. To achieve this, leadership and solidarity among humanity are necessary to overcome the challenges posed by the coronavirus, as emphasized in the CHED Memo Order, Series 2020.

If the students are taking classes in a mixed classroom or hybrid learning environment for the first time, they could feel a little lost. They may have trouble transitioning to this new type of education, from adjusting to digital coursework to maintaining discipline without face-to-face connection — especially if their particular learning style isn't being taken into account. One of the things that educators should understand about the learning process is that students are different people, especially in terms of their learning preferences. Different learning styles indeed exist, as almost all educators are aware of; nevertheless, there has not been much success in incorporating this into the classroom. Gaining a comprehension of these learning styles is a means of fostering a classroom environment that yields greater success compared to previous cohorts. Consequently, it is crucial for faculty members to grasp these styles in order to develop instruction that aligns more effectively with students' needs. The academic performance of students may be connected to their individual learning preferences. Therefore, the success of students is partially contingent upon the teacher's understanding of their respective learning styles (Cabual, 2021).

While most students utilize multiple modalities in their learning, some may exhibit specific strengths and weaknesses in certain modalities. For instance, if a student identifies as a "visual learner," relying solely on verbal lectures may leave them feeling

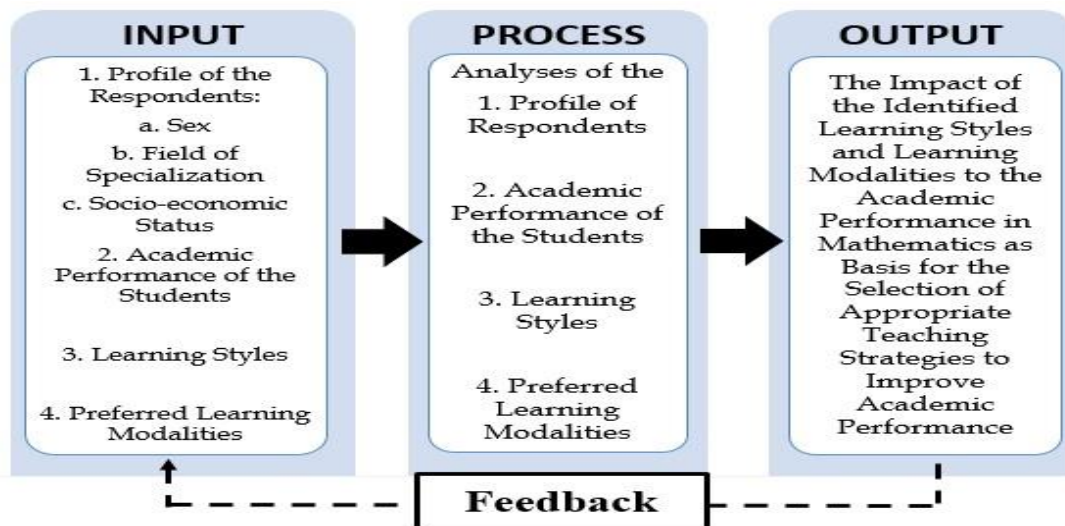
# The Learning Styles and Preferred Learning Modalities of Freshman Students in the New Normal: Their Impact on the Academic Performance in Mathematics in the Modern World

disengaged, confused, and frustrated (Sphero Inc., 2023). According to Martin (2015), researchers such as Reiff, Eisler, Barbe, and Stronk have found that in a classroom setting, approximately 25-30% of students are visual learners, 25-30% are auditory learners, 15% are tactile/kinaesthetic learners, and 25-30% demonstrate a mix of modalities. Consequently, only 30% of students primarily retain information through visual means (Bertolini, 2023). A student's academic performance in school is influenced by their learning styles or modes of learning, as well as the use of appropriate learning modalities. Dayon (2018) also cited Felder and Brent (2005), who discovered that poor test performance among students can be attributed to a mismatch between their learning styles and their teachers' teaching modes.

This study is based on the central theme that the students' Academic performance in Mathematics in the Modern World depends on their learning styles and preferred learning modalities. In this matter, the researcher conducted the study to help determine the relationship between learning styles and learning modalities in their academic performance in Mathematics in the Modern World.

## RESEARCH PARADIGM

The study used the Input-Process-Output (IPO) paradigm to analyze the profile of the respondents, their learning styles, preferred learning modalities, and their academic performance in Mathematics in the Modern World.



## Statement of the Problem:

This study aimed to determine the learning styles of the freshman students of the Isabela State University- City of Ilagan Campus in the New Normal and evaluate their impact on students' academic performance in Mathematics in the Modern World during the First Semester of School Year 2021-2022. Specifically, it sought to answer the following questions:

1. What is the profile of the students in terms of:
  - 1.1. sex;
  - 1.2. field of specialization;
  - 1.3. socio-economic status;
  - 1.4. parents' source of income;
  - 1.5. monthly family income;
  - 1.6. available gadgets at home for educational purpose/s?
2. What is the academic performance of the students in Mathematics in the Modern World during the first semester of School Year 2021-2022?
3. Is there a significant difference in the academic performance of the students when grouped according to the selected profile variables?
4. What are the students' learning styles?
5. Is there a significant difference in the Learning Styles of the students when grouped according to the selected profile variables?
6. Is there a significant relationship between the learning styles and the academic performance of the students?
7. What is the preferred learning modality of the students?

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8. Is there a significant relationship between the preferred learning modalities and the academic performance of the students?

## HYPOTHESES

This study was guided by the following hypotheses:

1. There is no significant difference in the academic performance of the students when grouped according to the selected profile variables.
2. There is no significant difference in the Learning Styles of the students when grouped according to the selected profile variables.
3. There is no significant relationship between the learning styles and the academic performance of the students.
4. There is no significant relationship between the preferred learning modalities and the academic performance of the students.

## SIGNIFICANCE OF THE STUDY

Mathematics is often perceived as a challenging subject for many students. By examining the impact of learning Styles on mathematics performance, the study can help educators personalize their teaching methods and approaches to meet the diverse needs of students. This understanding can lead to the development of innovative instructional strategies that cater to different learning styles, making mathematics more accessible and engaging for students.

The study of the learning styles of freshman students in the new normal and their impact on academic performance in mathematics in the modern world has several significant implications. It helps identify the different ways in which students prefer to acquire, process, and retain information, and can aid educators in tailoring their teaching methods and materials to suit individual learning styles. The findings of the study can inform decisions regarding the integration of learning style-based approaches in educational policies, curriculum frameworks, and teacher training programs. Overall, the study has the potential to enhance teaching practices, promote student engagement, and optimize academic performance in mathematics by considering the learning styles of freshman students in the new normal.

## METHODOLOGY

### Research Design:

The study employed a descriptive correlational design. The descriptive component of the study also revolved around the personal profile of the freshman students, their learning style preferences, and their academic performance. Subsequently, the correlational component was centered on the relationship between learning style preferences to the academic performance of students enrolled in Mathematics in the Modern World.

### Respondents of the Study:

The respondents of this study were the freshman students of Isabela State University–Ilagan Campus, City of Ilagan, Isabela consisting of 830 students enrolled in Mathematics in the Modern World subject for the First Semester School Year 2021-2022 who were selected through the total enumeration.

### Research Instrument:

This study used a survey questionnaire and an informal interview to collect quantitative data from respondents. The questionnaire identified their learning styles and modalities and used them to identify their academic performance in Mathematics in the Modern World.

**Questionnaire on Learning Style (Learning Style Inventory/LSI).** The learning style of the students was measured using the VARK Learning Style Model, a questionnaire developed by Neil Fleming to evaluate the learner’s preferred learning style namely visual, auditory, and kinaesthetic. Some parts or items of the questionnaire were simplified by the researcher and the student-respondents answered each item as to how they learn.

In the Learning Style Survey, the students indicated how much they agree with each item on a scale of 1, 3, or 5 in learning where **5 means Often**, **3 means Sometimes**, and **1 means Seldom**. The highest sum of scores among the preferences indicates the most dominant preferred learning style of the respondents. The classification of the Learning Style Inventory (LSI) is shown below.

Learning Style	No. of Items
Visual	2, 3, 7, 10, 14, 16, 19, 22
Auditory	1, 5, 8, 11, 13, 18, 21, 24
Kinesthetic	4, 6, 9, 12, 15, 17, 20, 23

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**The Documentary Analysis.** The academic performance of the respondents was limited to the grade obtained in Mathematics in the Modern World. To ensure the veracity of the grades, the School Registrar validated them and an informal interview was conducted among the respondents.

### DATA GATHERING PROCEDURE

The researcher obtained data by asking permission, coordinating with the Campus Executive Officer, and giving orientation to the respondents. Questionnaires were given online and administered by the researcher. All information was kept confidential.

### Statistical Treatment of Data

The following statistical tools were used to analyze and interpret the collected data in order to reach the desired results:

- 1. Simple Frequency Count and Percentage Distributions.** These Tools were used to determine the result of the Learning Style Survey and the academic performance of the student-respondents in Mathematics in the Modern World and their profile.
- 2. Weighted Mean.** This was used to analyze the students' Learning Styles in terms of visual, auditory and kinaesthetic.
- 3. Post Hoc Analysis of Variance (F-Test).** This was employed to distinguish the difference in the academic performance of the students when grouped according to the given variable and determine the difference in the Learning Styles of the students when grouped according to the selected profile variables.
- 4. Chi-Square Test ( $\chi^2$ ).** This was used to determine if there is a significant relationship between the students' Preferred Learning Styles and their academic performance in Mathematics in the Modern World.

### DATA ANALYSIS PROCEDURE

To determine the students' Learning Styles, the scoring procedures below were used: Place the point value on the line next to the corresponding item below. Add the points in each column to obtain the preference score under each heading. The Learning Style of the students will be based on the sum of the scores obtained among the eight (8) questions in each category. In this LSI, the Learning Style of the student corresponds to the highest sum obtained from the survey.

**OFTEN** = 5 points      **SOMETIMES** = 3 points      **SELDOM** = 1 point

VISUAL		AUDITORY		KINAESTHETIC	
Item	Points	Item	Points	Item	Points
2		1		4	
3		5		6	
7		8		9	
10		11		12	
14		13		15	
16		18		17	
19		21		20	
22		24		23	
<b>VPS =</b>		<b>APS =</b>		<b>TPS =</b>	
VPS = Visual Preference Score		APS = Auditory Preference Score		KPS = Kinesthetic Preference Score	

**Mean.** This was used to identify the student's academic performance using the following scale as follows: (*Based on the grading system of Isabela State University*).

Grading Scale	Numerical value	Description
1.0	98-100	Excellent
1.25	95-97	Very Satisfactory
1.50	92-94	Satisfactory
1.75	89-91	Fairly Satisfactory
2.00	86-88	Good

## The Learning Styles and Preferred Learning Modalities of Freshman Students in the New Normal: Their Impact on the Academic Performance in Mathematics in the Modern World

2.25	83-85	Fairly Good
2.50	80-82	Fair
2.75	77-79	Below Fair
3.00	75-76	Passed
5.00	Below 75	Failed

### RESULTS AND DISCUSSION

The data gathered were organized into tables which were thoroughly and completely analyzed and interpreted. The problems were answered and treated with appropriate statistical tools.

#### 1. Profile of the Respondents

**Table 1.1. Frequency & Percentage Distribution of the Students in Terms of Sex**

Sex	Frequency	Percentage
Male	415	50.00
Female	415	50.00
<b>Total</b>	<b>830</b>	<b>100</b>

Table 1.1 presents the profile of the students in terms of sex. As shown in the table, there is an equal distribution of the respondents as to their sex. Noting the results, it can be concluded that the number of students enrolled in Mathematics in the Modern World during the First Semester School Year 2021-2022 is equal. Additionally, the results of the researcher's interview with students indicate that both male and female ISUI students place a high priority on education.

**Table 1.2. Frequency & Percentage Distribution of the Students in Terms of Field of Specialization**

Field of Specialization	Frequency	Percentage
Bachelor of Science in Architecture	163	19.60
Bachelor of Science in Civil Engineering	194	23.40
Bachelor of Science in Electrical Engineering	131	15.80
Bachelor of Science in Industrial Technology	127	15.30
Bachelor of Science in Midwifery	44	5.30
Bachelor of Science in Psychology	79	9.50
Bachelor of Secondary Education	92	11.10
<b>Total</b>	<b>830</b>	<b>100.00</b>

Table 1.2 displays the profile of the students in terms of their field of specialization. Out of the 830 respondents, 194 or 23.40% of the respondents enrolled in Bachelor of Science in Civil Engineering; while only 44 or 5.30% of the students enrolled in Bachelor of Science in Midwifery.

**Table 1.3.1. Frequency & Percentage Distribution of the Students in Terms of Parents' Source of Income**

Source of Income of Mother	Frequency	Percentage
Self-Employed/Business Owner	2	0.20
Farming	90	10.80
Fishing	11	1.30
Government Employee	103	12.40
None	344	41.40
Non-Government Employee/Private Agencies Employee	69	8.30
Daily Wage Earner	211	25.40

**The Learning Styles and Preferred Learning Modalities of Freshman Students in the New Normal: Their Impact on the Academic Performance in Mathematics in the Modern World**

	<b>Total</b>	<b>830</b>	<b>100.00</b>
<b>Source of Income of Father</b>	<b>Frequency</b>	<b>Percentage</b>	
Self-Employed/Business Owner	90		10.80
Farming	338		40.70
Fishing	13		1.60
Government Employee	80		9.60
None	158		19.00
Non-Government Employee/Private Agencies Employee	85		10.20
Self-Employed/Business Owner	66		8.00
<b>Total</b>	<b>830</b>		<b>100.00</b>

Table 1.3.1 displays the profile of the students in terms of their mother’s source of income. As gleaned in the table, most of the mothers of the respondents which is 344 or 41.40% of 830 respondents have no source of income; while there are 2 or 0.20% who are self-employed or have their own business. This implies that the mothers of the respondents are plain housewives and do not earn an income. This can be concluded that the family of the students come from low-income families.

Table 1.3.1 also exhibits the profile of the students in terms of the father’s source of income. Out of 830 respondents, 338 or 32.70% of the students responded that the source of income of their fathers is Farming; while 13 or 1.60% of the students responded that the source of income of their fathers is fishing. Results imply that most fathers’ source of income is Farming.

**Table 1.3.2. Frequency and Percentage Distribution of Students in Terms of Family’s Monthly Income**

<b>Family’s Monthly Income</b>	<b>Frequency</b>	<b>Percentage</b>
At least PhP190, 401.00	45	5.40
Between PhP114, 241.00 to PhP190, 400.00	14	1.70
Between PhP66, 641 to PhP114, 240.00	21	2.50
Between PhP38, 081.00 to PhP66, 640.00	41	4.90
Between PhP19, 041.00 to PhP38, 080.00	102	12.30
Between PhP9, 521.00 PhP19, 040.00	188	22.70
PhP9, 520, and below	419	50.50
<b>Total</b>	<b>830</b>	<b>100.00</b>

Table 1.3.2 shows the profile of students in terms of the monthly income of parents. It can be seen in the table that out of 830 respondents, 419 or 50.50% of them responded that their family monthly income is PhP9, 520.00 and below; while only 14 of the respondents answered that the monthly income of their family is between PhP114, 241.00 to PhP190, 400.00. The results show that most of the family monthly income of the respondents is PhP9, 520.00 and below. This is supported by the findings in Table 1.3.1 since most of the mothers of the respondents have no work. Hence, most of the respondents have a very low family monthly income. The findings of this study do not coincide with the survey conducted by the Philippine Statistics Authority (PSA) on “Highlights of the Preliminary results of the 2021 Family Income and Expenditure Survey (FIES) Visit 1” which showed that the average income of Filipino families from January to June 2021 was estimated at PhP149, 980.00 thousand or PhP12, 498.33 per month. Hence, compared to the results of the study, the family monthly income of the students is much lower than the average monthly income as stated by the PSA. (PSA 2021)

**Table 1.3.3. Frequency and Percentage Distribution of Students in Terms of Available Gadgets at Home for Educational Purpose/s**

<b>Available Gadgets at Home for Educational Purpose/s</b>	<b>Frequency</b>	<b>Percentage</b>
Cellular Phone/Mobile Phone	757	91.20
Desktop	13	1.60
Laptop	55	6.60
Tablet or Ipad	5	0.60
<b>Total</b>	<b>830</b>	<b>100.00</b>

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It is shown in the table that there are 757 or 91.20% of students used Cellular Phones or Mobile Phones during the conduct of their online classes while only 5 responded that Tablet or Ipad is their gadget for their online classes. The majority of students used Cellular Phones or Mobile Phones during their online classes, which is consistent with Noah Darko-Adjei's (2019) study that distance learning students find it easier to use a smartphone.

**Table 2. Frequency and Percentage Distribution of the Academic Performance of Students in Mathematics in the Modern World**

Academic Performance	Range	Frequency	Percentage
1.00	98–100	2	0.20
1.25	95–97	23	2.80
1.50	92–94	94	11.30
1.75	89–91	177	21.30
2.00	86–88	134	16.10
2.25	83–85	127	15.30
2.50	80–82	110	13.30
2.75	77–79	116	14.00
3.00	75–76	16	1.90
5.00	Below 75	2	0.20
INCOMPLETE	INC	29	3.50
<b>Total</b>		<b>830</b>	<b>100.00</b>
<b>Mean = 2.11</b>			

Table 2 reflects the academic performance of the students in Mathematics in the Modern World. It is depicted from the table that out of 830 students, 177 or 21.30% have an academic performance of 1.75 with an equivalent numerical value of 89–91; while there were 2 students who received a grade of 5.00, which is a failing grade. The majority of Filipino students have performed fairly satisfactorily in mathematics, but this does not coincide with the PISA 2018 National Report of the Philippines, with more than 50% obtaining scores below the lowest proficiency level.

**TABLE 3. Comparison of the Academic Performance of the Students When Grouped According to Their Profile**

Students' Academic Performance and the Following Profile	Probability of F	Decision	Remarks
Field of Specialization	0.000	Reject Ho	Significant
Sex	0.008	Reject Ho	Significant
Gadgets Available at Home	0.055	Accept Ho	Not Significant
Mother's Source of Income	0.033	Reject Ho	Significant
Father's Source of Income	0.155	Accept Ho	Not Significant
Family's Monthly Income	0.000	Reject Ho	Significant

As indicated in the table, there is no significance in the Academic Performance of the students when grouped according to Gadgets available at home used for educational purpose/s and the Father's Source of Income. Hence, gadgets available at home for educational purposes do not affect the academic performance of the students. This is also true when respondents were grouped according to their father's source of income. The finding shows that the academic performance of the students is not affected by the source of income of their fathers.

Conversely, the profile of the students in terms of Field of Specialization, Sex, Mother's Source of Income, and Family's Monthly Income. Results show that there is a significant difference in the Mathematics achievement of the male and female students since the mean grade of the female students is 2.084 while the mean grade of the male students is 2.122. The result coincides with the findings of the study of Lee & Kung which revealed that boys had significantly higher math self-concept than girls, whereas girls exhibited higher mathematics achievement than boys. (Lee, C-Y., Kung H-Y., 2018). Also, some researchers who investigated the influence of gender stereotype as a predictor of secondary school students' academic achievement found that gender stereotype has a significant influence on students' academic achievement in favor of male students (Igbo, et al., 2015). Similarly, the academic performance of the students is related to their family's monthly income Machebe, et al.,



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(2017) found that the income level of parents impacts the academic achievements of the students. Results of their study showed that greater academic achievement for a student is attained by those students from financially buoyant families. Furthermore, a study revealed that academic achievement had a positive influence on the parents' education, parents' occupation, and parents' income (Dahie, et al., 2016). In addition, a report (PhD Essay 2018) revealed that there was a positive correlation between the parent's level of education, income, and occupation with the pupil's educational performance. The researcher concluded that parents' low socio-economic status impacted negatively pupil's performance, by denying the children access to resources that are readily available to children from higher socioeconomic status. The result implies that the three constructs have statistically significant positive effects on students' achievement. However, the results of another study are in contrast with the findings of this study, which revealed that there was no relationship concerning gender and performance in Mathematics among students in the schools they investigated (Musimenta, et al., 2020). The implication here is performance in Mathematics cannot be attributable to gender disparity because there were instances when girls performed better than boys, and other instances where boys took the lion's share in performance.

**TABLE 4. Frequency and Percentage Distribution of the Students' Learning Styles**

Learning Style	Frequency	Percentage
Visual	257	31.00
Auditory	260	31.30
Kinesthetic	69	8.30
Multiple Learning Styles	244	29.40
<b>Total</b>	<b>830</b>	<b>100</b>

Table 4 exhibits the students' learning styles. It can be gleaned in the table that out of 830 students, 260 or 31.30% of students were classified as Auditory Learners, thus, they learned best through listening. Only 69 or 8.30% were classified as Kinaesthetic Learners which means that these students learned best while they perform, do things or being physically involved in a classroom situation. The finding coincides with the results of the study of Carabelle, M.R. (2015) which revealed that the preferred learning style of the respondents in her study was auditory which infers that the students learn best by way of using their listening skills compared to seeing and moving.

**TABLE 5. Comparison in the Learning Styles of the Students when Grouped According to Their Profile**

Students' Learning Styles and the Following Profile	Probability of F	Decision	Remarks
Field of Specialization	0.000	Reject Ho	Significant
Sex	0.862	Accept Ho	Not Significant
Gadgets Available at Home	0.089	Accept Ho	Not Significant
Mother's Source of Income	0.161	Accept Ho	Not Significant
Father's Source of Income	0.165	Accept Ho	Not Significant
Family's Monthly Income	0.000	Reject Ho	Significant

The learning styles of students differ when grouped according to their profile in terms of Sex, Gadgets, Mother's source of income, and Father's source. This is supported by Rahman, et al., (2017) who found no relationship between learning styles, genders, and interaction of learning styles with genders. On the hand, when students are grouped in terms of Field of specialization and Family's monthly income, there is a significant difference in their learning styles. This means that the learning styles of the students differ when grouped in terms of field of specialization and family's monthly income.

**Table 6. Results of the Test of Significant Relationship between the Learning Styles and Academic Performance of the Students**

Variable	Probability of $X^2$	Decision	Remarks
Auditory Learning Style	0.1707	Accept Ho	Not Significant
Kinesthetic Learning Style	0.3210	Accept Ho	Not Significant
Visual Learning Style	0.4114	Accept Ho	Not Significant
Multiple Learning Styles	0/5034	Accept Ho	Not Significant

# The Learning Styles and Preferred Learning Modalities of Freshman Students in the New Normal: Their Impact on the Academic Performance in Mathematics in the Modern World

Learning Styles and Academic Performance of the Students	0.2730	Accept Ho	Not Significant
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As to the significant relationship between the learning styles and academic performance of the students, no statistically significant relationship was found between learning styles and the academic performance of students. Studies have found no statistically significant relationship between learning styles and academic performance of students. This is consistent with studies such as Azizollah Arbabisarjou, et al. (2016) and Noushin Kohan, et al. (2021). Wilkinson, et al. (2014) found that the overall academic performance of 276 students in first-year medicine and dentistry is not influenced by learning style. Villajuan, A. (2019) found that learning styles were significantly related to academic achievement.

## CONCLUSIONS AND RECOMMENDATIONS

**Findings:** The following were the significant findings of the study:

### 1. Profile of the students

- 1.1. The male and female students enrolled in Mathematics in the Modern World during the First Semester School Year 2021-2022 are equal in number.
- 1.2. Also, in terms of their field of specialization, there are more BSCE students enrolled in Mathematics in the Modern World. Out of the 830 respondents, 194 or 23.40 percent of the respondents are enrolled in the Bachelor of Science in Civil Engineering.
- 1.3. As to the source of income of the mother or father of the students, the majority of the mothers which comprised of 344 or 41.40 percent are not employed and have no source of income.
- 1.4. On the other hand, with respect to the father's source of income of the respondents, out of 830 respondents, 338 or 32.70 percent of the students responded that the source of income of their father is Farming. Thus the majority of the fathers' monthly income relies on farming.
- 1.5. As to the family monthly income, the results show that most of the family monthly income of the respondents is P9, 520.00 and below which comprises 50.50 percent of the total respondents. This only shows that the students and their families live in modesty where basic needs are of greatest priority.
- 1.6. In terms of the available gadget at home used for educational purposes, out of 830 students, 757 or 91.20 percent of them used Cellular Phones or Mobile Phones during the conduct of their online classes. This, therefore, means that the majority of them prioritized using Cellular Phones or Mobile Phones when joining online classes since it's the most commonly used gadget by youngsters and it is the most available and most affordable gadgets to use for online classes.

### 2. Academic Performance in Mathematics in the Modern World

With respect to the academic performance of the students, the majority of the students enrolled in Mathematics in the Modern World, which is 177 or 21.30 percent, received a grade of 1.75 with a numerical value of 89–91 and have fairly satisfactory performance in Mathematics in the Modern World.

### 3. Academic Performance in Mathematics in the Modern World and Profile of Students

The academic performance of students is not affected by their father's source of income, but by their profile in terms of Field of Specialization, Sex, Mother's Source of Income, and Family's Monthly Income. This further implies that there is a significant difference in the Mathematics achievement of the male and female students since the mean grade of the female students is 2.084 while the mean grade of the male students is 2.122.

### 4. Learning Styles

The majority of the students have learning styles such as Auditory. This implies that they learned best through interactive listening and therefore, most learners prefer the auditory learning style in which they tend to listen to lectures, discussions, and explanations and follow oral directions.

### 5. Learning Styles and Profile of the Students

The results show that the learning style of students is not affected by Sex, Gadgets, or Mother's and Father's income, but differs when grouped according to the field of specialization and family's monthly income.

## **The Learning Styles and Preferred Learning Modalities of Freshman Students in the New Normal: Their Impact on the Academic Performance in Mathematics in the Modern World**

### **6. Significant Relationship between the Learning Styles and the Academic Performance of the Students**

As to the relationship between the learning styles of the students and their academic performance, no statistically significant relationship was found between learning styles and the academic performance of students.

### **7. Preferred Learning Modality of the Students**

As to the students' Preferred Learning Modality, 394 or 47.40 percent of the students preferred Online. The overall findings of this study showed that most of the students preferred online learning to other modes of learning.

**8. Relationship between the Students' Preferred Learning Modality and their Academic Performance in Mathematics** With regard to the relationship between the students' Preferred Learning Modality and their Academic Performance, it was found that there is a significant relationship between the preferred learning modality and the academic performance of the students.

## **CONCLUSIONS**

The freshman students have fairly satisfactory performance in Mathematics in the Modern World. Data revealed that the academic performance of the students differ significantly in terms of field of specialization, mother's source of income, sex, and family monthly income. The identified learning style of the students is the Auditory Learning Style which means that students learned most effectively through interactive listening. In addition, the students differ significantly in their learning styles in terms of their field of specialization. However, the academic performance of the students is not significantly related to their learning styles, thus, regardless of their learning styles, the academic performance of the students is not affected. Based also on the result, students preferred blended learning as their learning modality which significantly affects their academic performance in Mathematics in the Modern World.

## **RECOMMENDATIONS**

In response to the call for quality education by concerned sectors of Isabela State University-City of Ilagan Campus and in consideration of the identified space for improvement on the part of the Mathematics instructors, the following points are hereby recommended:

1. **Assess individual learning styles:** Students have different learning preferences, such as visual, auditory, kinesthetic, or a combination of these. It is essential to identify students' learning styles to tailor instruction accordingly. Teachers can use various assessments, such as learning style inventories or observations, to understand their students' preferences.
2. **Incorporate a range of instructional strategies:** After identifying students' learning preferences, teachers should employ a variety of teaching modalities to meet the needs of all students. For instance, diagrams, charts, or films may be helpful to visual learners while lectures or debates may be more appealing to auditory learners. The use of manipulative or hands-on activities may be beneficial for kinesthetic learners.
3. **Use technology and multimedia:** Integrating technology and multimedia resources can enhance learning experiences for students. Online platforms, educational apps, interactive simulations, and virtual manipulatives can provide opportunities for active engagement and individualized learning.
4. **Provide differentiated instruction:** Adjust instruction based on students' learning styles and abilities. Offer alternative explanations, supplementary materials, or additional support to address individual needs. Differentiation allows students to access content in a way that aligns with their preferred learning modalities.
5. **Encourage active learning:** Engage students in active learning strategies that involve problem-solving, critical thinking, and application of mathematical concepts. This can include group work, hands-on activities, projects, and real-world examples to promote deeper understanding.
6. **Promote self-awareness and metacognition:** Help students become aware of their own learning styles and preferences. Teach them strategies to effectively manage their learning, such as setting goals, planning study time, monitoring progress, and seeking help when needed.
7. **Provide professional development opportunities:** Allocate resources and time for teachers to attend training sessions, seminars, workshops, and conferences that focus on effective teaching strategies, instructional technology, differentiated instruction, assessment methods, and addressing diverse learning needs. These opportunities can enhance teachers' competencies and keep them updated with the latest research and best practices in education.

# The Learning Styles and Preferred Learning Modalities of Freshman Students in the New Normal: Their Impact on the Academic Performance in Mathematics in the Modern World

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## The Effect of Good Corporate Governance Mechanism on Firm Value with Financial Performance as a Moderation Variable



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**ABSTRACT:** This study aims to examine the effect of good corporate governance mechanisms consisting of managerial ownership (KM), audit committee (KA), board of commissioners (DK), and board of directors (DD) on firm value (PBV) and financial performance (ROA) as moderating variable. In this study the population used is a banking company listed on the Indonesia Stock Exchange (IDX). The number of samples collected was 15 companies within a 5 year research period. The selected sample was carried out using a purposive sampling technique. The results showed that managerial ownership has a positive and significant effect on firm value, audit committee has no significant effect on firm value, the board of commissioners has no significant effect on firm value, the board of directors has a positive and significant effect on firm value, financial performance can moderate the effect of managerial ownership on firm value, financial performance does not moderate the effect of the audit committee on firm value, financial performance does not moderate the effect of the board of commissioners on firm value, financial performance moderates the effect of the board of directors on firm value.

**KEYWORDS:** managerial ownership, audit committee, board of commissioners, firm value, price to book value, return on assets

### I. INTRODUCTION

The Indonesian economy is growing rapidly with easy access to transactions provided by banking companies, both state-owned and private banks. The establishment of a company must have a clear purpose. There are several purposes for the establishment of a company. The first goal is to achieve maximum profit. The second goal is to prosper the company owner or shareholder. While the third goal of the company is to maximize the value of the company which is reflected in the stock price. The objectives of the three companies are substantially not much different. It's just that the emphasis to be achieved by each company is different from one another (Harjito, Martono, & Tohrin, 2022).

The company's value describes the amount of the company's equity with the company's debt in a certain period. Indriastuti, Suhendi, & Hanafi, (2020) states the value of the company is the price that must be paid by prospective buyers if the company is sold. According to Yanti & Patrisia., (2019) said that the success of the Corporate Value created by the company is a reflection of shareholder prosperity, corporate value can provide maximum shareholder prosperity if the stock price increases. The increasing value of the company is expected to attract interest and increase the confidence of investors to invest their funds in the company. A high increase in corporate value is a long-term goal that should be achieved by the company, in the process of increasing corporate value it is necessary to implement Good Corporate Governance (good corporate governance) (Widiatmoko, 2020)..Improving the quality of good corporate governance in companies is expected to be able to improve and improve supervision of company performance so that companies become more controlled. To achieve better and more controlled company performance, a good corporate governance mechanism is needed. Good corporate governance mechanisms are procedures, procedures, and company rules to produce good corporate governance so that it can provide company benefits (Nuswantara, Carolina, & Krisprimandoyo, 2020).

The implementation of Good Corporate Governance in a company will increase the value of the company because in GCG there are principles of transparency and accountability which indicate that companies must have clarity and transparency that will be presented by investors, with clarity and openness implemented by the company will increase investors' sense of security to can invest in the company (Kong, Famba, Kurauone, Chituku-Dzimiro, & Sun, 2020)..

The basic principles of GCG consist of fairness, accountability, transparency, independence and responsibility. While the mechanism of GCG includes: the number of commissioners, the independence of the board of commissioners, the size of the board of directors, and the existence of an audit committee. Based on the basic principles and mechanisms of GCG, it is hoped that it will be able to optimize company performance and company value by implementing a good control system for company

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managers. So that the company is developing in a better direction with the development of the company's stock price as an indicator of assessment and the impact on achieving company value as desired (Yanti & Patrisia, 2019). Corporate governance also provides a structure that facilitates the determination of the goals of a company, as well as a tool for monitoring company performance techniques (Abbasi, Kalantari, & Abbasi, 2012).

The company's financial performance is one of the factors seen by potential investors to determine investment. For companies to maintain and improve financial performance is a must so that the company's shares continue to exist and remain in demand by investors. The better the company's performance, the higher the return that will be obtained by investors. Financial performance describes the level of soundness and financial condition of the company in a certain period. According to Rosiana & Mahardhika, (2021), an assessment of banking performance is one of the benchmarks for society to give trust to banks. This study uses profitability ratios in the form of ROA as a measure of a bank's financial performance, because in determining the soundness level of a bank, Bank Indonesia as a banking supervisor pays more attention to assets where most of the funds come from public deposits (Rivai, Sudarto, & Veitzal, 2013)..

### **II. HYPOTHESES DEVELOPMENT**

#### **Managerial Ownership and Corporate Values**

Managerial share ownership is the shareholder of managers and directors who are actively involved in decision making (Rahman & Reja, 2015). Managers who are also shareholders will of course align their interests as managers with their interests as shareholders. The research results of Indriastuti et al., (2020) showed that managerial ownership has a positive and significant effect on firm value. Based on the description above, the development of the hypothesis derived is:

H<sub>1</sub>: Managerial ownership has a positive effect on firm value.

#### **Audit Committee and Corporate Values**

The audit committee is an important component of good corporate governance. By ensuring the integrity and quality of financial reports, the audit committee helps protect the interests of shareholders and maintain public trust in the company. The results of research from Alsagr, Belkhaoui, & Aldosari., (2018) and Widiatmoko (2020) show that the audit committee has a positive and significant effect on firm value. Based on the description above, the development of the hypothesis derived is:

H<sub>2</sub>: The audit committee has a positive effect on firm value.

#### **Board of Commissioners and Corporate Values**

The board of commissioners is tasked with controlling and providing direction to the board of directors. The board of commissioners does not have direct authority over the company. The main function of the board of commissioners is to oversee the completeness and quality of report information on the performance of the directors. Therefore, the position of the board of commissioners is very important in bridging the principal's interests in a company. Research by Nuryana & Dwi Surjandari., (2019) and Nuswantara et al., (2020), found that the board of commissioners has a positive effect on company value. Based on the description above, the development of the hypothesis derived is:

H<sub>3</sub>: The board of commissioners has a positive effect on firm value.

#### **Board of Directors and Corporate Values**

The board of directors in the company will determine the policies to be taken or the company's strategy in the long term and short term (Yanti & Patrisia, 2019). In order for the implementation of the duties of the directors to run effectively, one of the principles that needs to be fulfilled is that the composition of the directors must be in such a way as to enable appropriate, fast and effective decision-making, and can act independently (Abdel-Azim & Soliman, 2020). Research by Widiatmoko (2020) and Filip, Vesna, & Kiril., (2014), found that the board of directors has a positive effect on company value. Based on the description above, the development of the hypothesis derived is:

H<sub>4</sub>: The board of directors has a positive effect on firm value.

#### **Managerial Ownership and Firm Value with Financial Performance as Moderating Variables**

Managerial ownership can help reduce agency conflicts between shareholders and management. Managers who own company shares tend to act in ways that benefit shareholders, because they are also shareholders who have an interest in the long-term success of the company. The results of research by Oleiwi et al., (2019) show that financial performance variables have an impact on the relationship between managerial ownership and firm value. Based on the description above, the development of the hypothesis derived is:

H<sub>5</sub>: Financial performance moderates the effect of managerial ownership on firm value.

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### Audit Committee and Corporate Values with Financial Performance as Moderating Variables

The application of GCG principles means that the company will have an audit committee and independent commissioners as parties who carry out supervision and control in creating fairness, transparency, accountability and responsibility. The proportion of audit committee independence has a positive relationship between the audit committee and the reduced pressure of managers on the audit committee in preparing financial reports. Research conducted by Kryeziu & Hoxha., (2021) found that financial performance has an impact on the relationship between audit committees and firm value.

Based on the description above, the development of the hypothesis derived is:

H6: Financial performance moderates the effect of the audit committee on firm value.

### Board of Commissioners and Corporate Values with Financial Performance as Moderating Variables

The board of commissioners in a company places more emphasis on the monitoring function of the directors' policy implications. The role of the commissioner is expected to minimize agency problems that arise between the board of directors and shareholders. The board of commissioners plays an important role in directing strategy and overseeing the running of the company and ensuring that managers really improve company performance as part of company goals. Nikolić, Nielsen, & Peković., (2022) found that financial performance variables have an impact on the relationship between the board of directors and company value. Based on the description above, the development of the hypothesis derived is:

H7: Financial performance moderates the effect of the board of commissioners on firm value.

### Board of Directors and Company Value with Financial Performance as Moderating Variable

Good corporate governance is proposed and is expected to be able to provide improvements to company performance through monitoring management performance and ensuring management accountability to stakeholders based on the applicable regulatory framework. Parties - parties who have certain interests will carry out the preparation of financial statements in accordance with their wishes. This often happens and is considered entrenched in the management of a company. This is due to supervision that is still not optimal by the company and the rules and standards for accounting, auditing and the principle of transparency which are still weak in application. Therefore, good supervision and control need to be carried out to prevent fraud from occurring. Thus it is necessary to have a party whose role is to control and oversee the actions and decisions of the company's managers, which in the end the management of the company runs in a healthy, clean and responsible manner. Research conducted by El-Charani, Abraham, & Skaf., (2022) found that financial performance has an impact on the relationship between the board of directors and company value. Based on the description above, the development of the hypothesis derived is:

H8: Financial performance moderates the effect of the board of directors on firm value.

## III. RESEARCH METHODE

### Population and Sample

The population taken for this study is a banking company listed on the Indonesian Stock Exchange. Sampling from this study used a purposive sampling method with the following criteria: (1) Banking companies listed on the Indonesia Stock Exchange in the 2016-2020 research period, (2) Banking companies that issued complete annual financial reports for the 2016-2020 period, (3) Companies that provide data according to research variables during the 2016-2020 period.

### Research variable

The variables in this study consist of one dependent variable, namely firm value, one independent variable of good corporate governance which is proxied to be 4 including managerial ownership, audit committee, board of commissioners, and board of directors, and one variable of financial performance moderation. The following table is the variables and variable measurements.

**Table 1. Variable and Measurement**

Variable	Symbol	Measurement
Dependent variable		
Firm Value	PBV	Price per share/Book value per share
Independent variable		
Managerila ownership	MOWN	Share owned by management/Total share
Audit Committee	AC	The number of audit committee
Board of Commissioner	BOC	The number of board of commissioners



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Boar of Director	BOD	The number of board of directors
Moderating variable		
Financial performance	ROA	Net income/Total assets

### Data analysis

Testing the hypothesis of this study uses multiple regression analysis with a significance level of 0.05, meaning that the hypothesis is accepted if the significance value of each variable is less than 0.05. The regression equation as follows:

$$PBV = \alpha + \beta_1 MOWN + \beta_2 AC + \beta_3 BOC + \beta_4 BOD + \beta_5 MOWN * ROA + \beta_6 AC * ROA + \beta_7 BOC * ROA + \beta_8 BOD * ROA + \epsilon$$

## IV. RESULT AND DISCUSSION

### Descriptive Statistics

Descriptive analysis is usually used by researchers to display an overview of the sample data to be studied. In this study, an overview of the research sample will be shown including the mean, standard deviation, minimum value, and maximum value of each variable that will be used in research such as MOWN, AC, BOC, BOD, PBV, and ROA.

**Table 2. Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
MOWN	75	0,00	0,24	0,0485	0,06506
AC	75	1,00	9,00	3,8667	1,30832
BOC	75	3,00	10,00	6,0267	2,08582
BOD	75	3,00	12,00	8,3867	2,81355
PBV	75	0,53	37,88	3,3840	6,42258
ROA	75	-15,89	4,00	1,1704	3,31024

**Source:** Data processed

Based on table 2 it can be seen that good corporate governance which is proxied by MOWN has a mean value of 0.0485 with a minimum value of 0.00 and a maximum value of 0.24. AC has a mean value of 3.8667 with a minimum value of 1.00 and a maximum value of 9.00. BOC has a mean value of 6.0267 with a minimum value of 3.00 and a maximum value of 10.00. BOD has a mean value of 8.3867 with a minimum value of 3.00 and a maximum value of 12.00. Meanwhile, the company value proxied by PBV (Price to Book Value) has a mean value of 3.3840 with a minimum value of 0.53 and a maximum value of 37.88. The financial performance proxied by ROA (Return on Assets) has a mean value of 1.1704 with a minimum value of -15.89 and a maximum value of 4.00.

### Hypothesis Test Results

The t test in this study was used to determine the partial effect of the independent variables on the dependent variable. The following test results were obtained:

**Table 3. Hypothesis test result**

Variable	Coefficient	Std. Error	t-Statistic	Sig.
MOWN	0.391	10.96	3.52	0.001
AC	-0.116	0.532	-1.069	0.289
BOC	-0.254	0.477	-1.643	0.105
BOD	0.61	0.345	4.041	0.000
MOWN*ROA	0.567	2.816	4.803	0.000
AC*ROA	-0.352	0.199	-0.993	0.324
BOC*ROA	-0.469	0.180	-1.088	0.280
BOD*ROA	0.939	0.107	2.857	0.006

Dependent variable: PBV

**Source:** Data process

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### **Effect of managerial ownership on firm value**

Based on table 3 it is known that the significance value of the MOWN variable is 0.001 which is smaller than 0.05 and the beta value is 0.391 which indicates a positive direction. Increased managerial ownership can illustrate that the company will continue to grow because company ownership is an investment that comes from the managers and boards that manage the company, so that when managerial ownership increases, the value of the company will also increase. So it can be concluded that the MOWN variable can affect the PBV variable.

The results of this study support the first hypothesis which states that managerial ownership has a positive effect on firm value. These results are in line with research conducted by Indriastuti et al., (2020) and Abbasi et al., (2012) which states that managerial ownership has a positive and significant effect on firm value, so that H1 is accepted.

### **Effect of the audit committee on firm value**

Based on table 3 it is known that the significance value of the AC variable is 0.289 which is greater than 0.05 and the beta value is -0.116 indicating a negative direction. The main task of the audit committee is designed to increase transparency, minimize risk, ensure compliance, improve internal control, and increase corporate value through independent oversight of the company's financial reports and business processes, which does not require a large number of tasks to perform. So it can be concluded that the AC variable cannot affect the PBV variable.

The results of this study do not support the second hypothesis which states that the audit committee has a positive effect on firm value. The results of this study are in line with research conducted by Alsagr et al., (2018), Nuryana & Dwi Surjandari., (2019) and Kakar et al., (2021) which state that the audit committee has no influence on firm value, so H2 is rejected.

### **Effect of the board of commissioners on company value**

Based on table 3 it is known that the significance value of the BOC variable is 0.105 which is greater than 0.05 and the beta value is -0.254 indicating a negative direction. The size of the board of commissioners is not too influential because what influences it is not the number or quantity of the board of commissioners but the individual ability (skills) of the board of commissioners themselves in providing strategic direction for the long-term interests of the company, so that the number does not really affect the level of company value. So it can be concluded that the BOC variable cannot affect the PBV variable.

The results of this study do not support the third hypothesis which states that the board of commissioners has a positive effect on firm value. The results of this study are in line with the results of research conducted by Doğan & Ekşi., (2020), Babić, Nikolić, & Simić., (2020) and Arouri, Hossain, & Muttaakin., (2011) which states that the board of directors has no influence on company value, so H3 is rejected.

### **Effect of the board of directors on company value**

Based on table 3 it is known that the significance value of the BOD variable is 0.000 which is smaller than 0.05 and a beta value of 0.610 indicates a positive direction. The board of directors has the task of overseeing company management, making strategic decisions, ensuring compliance, maintaining financial stability, and promoting the long-term interests of the company and its stakeholders, and for these tasks to be carried out properly, an adequate number of board of directors is required. So it can be concluded that the BOD variable can affect the PBV variable.

The results of this study support the fourth hypothesis which states that the board of directors has a positive effect on firm value. The results of this study are in line with the results of research conducted by Asare, Muah, Frimpong, & Anyass., (2022), Yanti & Patrisia., (2019) and Filip et al., (2014) which stated that the board of directors has a positive and significant effect on firm value, so that H4 is accepted.

### **Effect of financial performance in moderating the relationship between managerial ownership and firm value**

Based on table 3 it is known that the significance value of the MOWNxROA variable is 0.000 which is smaller than 0.05. So it can be concluded that the ROA variable can moderate the relationship between the MOWN variable and the PBV variable. The results of this study support the sixth hypothesis which states that financial performance moderates the effect of managerial ownership on firm value, so that H5 is accepted. These results are not in line with research conducted by Purwitaningsari (2021) which states that financial performance does not positively moderate managerial ownership of company value.

### **Effect of financial performance in moderating the relationship between the audit committee and firm value**

Based on table 3 it is known that the significance value of the ACxROA variable is 0.324 which is greater than 0.05. So it can be concluded that the ROA variable cannot moderate the relationship between the AC variable and the PBV variable. The results of this study do not support the seventh hypothesis which states that financial performance moderates the effect of the audit

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committee on firm value. This result is in line with the results of research conducted by Purwitaningsari (2021) which states that financial performance does not moderate the effect of the audit committee on firm value, so H6 is rejected.

Effect of financial performance in moderating the relationship between the board of commissioners and company value  
Based on table 3 it is known that the significance value of the BOCxROA variable is 0.280 which is greater than 0.05. So it can be concluded that the ROA variable cannot moderate the relationship between the BOC variable and the PBV variable. The results of this study do not support the eighth hypothesis which states that financial performance moderates the effect of the board of commissioners on firm value, so H7 is rejected. These results are not in line with research conducted by Tutut Suhartanti and Nur Fadrih Asyik (2015) which states that financial performance has an impact on the influence of the board of commissioners on firm value.

The influence of financial performance in moderating the relationship between the board of directors and company value  
Based on table 3 it is known that the significance value of the BODxROA variable is 0.006 which is smaller than 0.05. So it can be concluded that the ROA variable can moderate the relationship between the BOD variable and the PBV variable. The results of this study support the ninth hypothesis which states that financial performance moderates the effect of the board of directors on firm value, so that H8 is accepted. These results are not in line with research conducted by Purwitaningsari (2021) which states that financial performance does not moderate the positive influence of the board of directors on company value.

### V. CONCLUSIONS

This study aims to determine the effect of good corporate governance on firm value with financial performance as a moderating variable. The objects of this research are banking companies listed on the Indonesia Stock Exchange for the 2016-2020 period. Based on the research that has been done, the following conclusions can be drawn:

Managerial ownership (MOWN) has a significant effect on firm value (PBV). The results of this study support the research conducted by Saputra (2010) and Mukhtaruddin, et. al. (2014). The audit committee (AC) has no significant effect on firm value (PBV). The results of this study support the research conducted by Mukhtaruddin, et. al. (2014) and Anggie Indah Purwitaningsari (2021). The board of commissioners (BOC) has no significant effect on firm value (PBV). The results of this study support the research conducted by Mukhtaruddin, et. al. (2014). The board of directors (BOD) has a significant effect on firm value (PBV). The results of this study support the research conducted by Marini and Marina (2017).

Financial performance (ROA) can moderate the relationship between managerial ownership and firm value positively. The results of this study do not support the results of research conducted by Purwitaningsari (2021). Financial performance (ROA) cannot moderate the relationship between the audit committee and firm value. The results of this study support the results of research conducted by Purwitaningsari (2021). Financial performance (ROA) cannot moderate the relationship between the board of commissioners and company value. The results of this study do not support the results of research conducted by Tutut Suhartanti and Nur Fadrih Asyik (2015). Financial performance (ROA) can positively moderate the relationship between the board of directors and company value. The results of this study do not support the results of research conducted by Purwitaningsari (2021).

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## Analysis Anthropometric, Aerobic Capacity, Anaerobic and Physical Activity of Lampung Provincial Gymnastics Athletes



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**ABSTRACT:** This study aims to determine the anthropometric profile, aerobic, anaerobic capacity and physical activity of the Lampung Province Gymnastics Athletes. The method used is (Mix Method) descriptive quantitative & qualitative with a sample of 10 athletes. The instruments used are tests and measurements of body mass index, bleep test, running-based anaerobic sprint test (RAST), and global physical activity questionnaire (GPAQ). The data analysis technique used descriptive statistics, and regression test. The results of this study indicate that the anthropometric profile measured by Body Mass Index (BMI) is in the normal category (80%), aerobic capacity is in the good category (40%), anaerobic capacity is in the very good category (50%), and activity level Physical fitness is included in the moderate category (60%). The results of the regression test showed that: 1) There was a relationship between BMI and aerobic capacity, the sig value was obtained.  $0.043 < 0.05$ . 2) There is no relationship between BMI and anaerobic capacity, the sig value is obtained.  $0.516 > 0.05$ . 3) There is a relationship between BMI and the level of physical activity obtained by sig.  $0.000 < 0.05$ . 4) There is no relationship between aerobic capacity and anaerobic capacity with a sig value of  $0.280 > 0.05$ . 5) There is a relationship between aerobic capacity and the level of physical activity, obtained a sig value of  $0.034 < 0.05$ . 6) There is no correlation between anaerobic capacity and physical activity level, the sig value is  $0.938 > 0.05$ . So in this study, anthropometric variables measured by BMI had a significant relationship with aerobic capacity and physical activity, and there was a significant relationship between aerobic capacity and physical activity levels in the Lampung Province's gymnastics athletes.

**KEYWORDS:** Physical Activity, Anthropometry, Anaerobic, Aerobic Capacity

### I. INTRODUCTION

Sport is an activity that cannot be separated from the life of modern society, even sports become a lifestyle, especially in urban communities still doing more activities such as playing badminton, gym, jogging and cycling besides that there are also other social and hiburam activities, such as participating in recitation, community service work in the environment and not forgetting recreation with family on holidays (leisure). A person must always do physical activity in his life (Suharjana, 2013). Sports are actually carried out in a planned manner so that they can produce good physical condition (Arif & Kusnanik, 2017). with a physical condition that can be said to be good, especially supported by a supportive posture, of course, it can produce excellent sports quality, especially if it leads to the achievement itself (Toselli, 2021). Furthermore, posture itself can greatly affect the achievements of athletes, especially those who rely on posture (Jurjiu & Pantea, 2018).

Gymnastics is a sport with systematic physical exercise movements, and assembled as a whole with the aim of forming and developing personality harmoniously. Gymnastics has an organization, namely (PERSANI) is a forum for coaching sportsmen (athletes) who have the potential to achieve achievements both at national and international levels. This is the most important point in the function of every activity, one of which is the organization of the Indonesian Gymnastics Association (PERSANI) Pengprov Lampung which has a structure and has been running for approximately 40 years. In addition, it still controls from the Indonesian National Sports Committee (KONI) and from the Youth and Sports Service (DISPORA). Based on the situation in the Persani Provincial Government organization, there are results of the achievements of Lampung gymnastics athletes, namely the record of achievements achieved by Lampung gymnastics coaching has contributed significantly to the progress of Lampung Province, this can be proven by obtaining medals from every championship that is followed both at the national and international levels. The record of achievements that have been achieved by athletes in Persani Lampung from the last 20 years of the year

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(1991-2019). It can be described that the Persani Lampung Athletes have won national level medals as many as 12 people selected disciplines, namely Artistic, Rhythmic, Aerobics with details of the number of gold medals, Silver and bronze from all gymnastics disciplines to date still exist and remain consistent in fragrant Lampung Province. It can be described that the Sons and Daughters of Persani Lampung have won National and International medals of 12 Gymnasts consisting of Artistic, Rhythmic, Aerobics disciplines with details of the amount of gold, silver and bronze from gymnastics disciplines until now still exist and consistently make the name of Lampung Province proud.

Achievement is supported by the training process with an intensity adjusted by the coach to the athlete, thus gymnastics difloat needs to do exercises to measure aerobic and anaerobic capacity and physical activity. An achievement will experience its peak if in training there is habituation starting from the program, form of training, system and form of training (Saputra & Hariadi, 2018). There is a definition of aerobic capacity, which is the ability to maintain endurance based on the duration of long exercise, while anaerobic capacity is the ability to perform very high exercise activities in repetitive events. It is important to train aerobic ability as individuals with high initial endurance are more resistant to fatigue and will have faster recovery. Anthropometry comes from the words anthropos and metros. Anthoropos means body and metros means size. So anthropometry is the size of the body. This understanding is very general. Anthropometry (body size) is one way to directly assess nutritional status, especially the state of energy and protein of a person's body (Utomo et al., 2012). Thus, anthropometry, aerobic capacity is often termed VO2 Max measured using the Bleep aerobic ability test instrument (VO2 max) It is important to train aerobic ability as individuals with high initial endurance are more resistant to fatigue and will have faster recovery. Anthropometry comes from the words anthropos and metros. Anthoropos means body and metros means size. So anthropometry is the size of the body. This understanding is very general. Anthropometry (body size) is one way to directly assess nutritional status, especially the state of energy and protein of a person's body (Utomo et al., 2012). Thus, anthropometry, aerobic capacity is often termed VO2 Max measured using the Bleep aerobic ability test instrument (VO2 max) Test, as one of the test instruments that can describe the degree of aerobic capacity of a float gymnastics athlete. (Supariasa, 2001) that measurements of anthropometric characteristics can be done such as weight, height, age and (BMI) Body Mass Index. The training process of an athlete is not only measured aerobic capacity because there is anaerobic capacity to determine the ability of float gymnastics athletes, one of the measuring instruments is the Running-based Anaerobic Sprint Test (RAST) is a form of test that is represented in two main components that appear, namely power and speed. Anaerobic capacity that measured anaerobic endurance data aimed to determine anaerobic endurance through rapid activity such as sprints without the use of oxygen.

Based on the type of exercise described above, of course, it is related to physical activity in everyday life in float gymnastics athletes, physical activity is aimed. (WHO, 2012) physical activity can be defined as body movements produced by skeletal muscles and require energy. Various physical activities such as running, walking, working, playing, lifting weights and various other physical exercises. So until now it is not known the level of physical activity of float gymnastics athletes using the Global Physical Activity Questionnaire (GPAQ) is an instrument to measure physical activity developed by WHO. GPAQ was developed for the purpose of monitoring physical activity in developing countries. GPAQ consists of 16 questions that collect data from participation in physical activity in three domains, namely physical activity while working, travel activities from place to place, and activities that are recreational or leisure.

### **METHOD**

Research method is a technique or way to search, obtain, conclude or record data, both in the form of primary data and secondary data used for the purposes of compiling a scientific work and then analyzing factors related to the subject matter so that there will be a truth to the data obtained. According to (Sugiyono, 2014) the research method is: "The research method is a scientific way to obtain data with specific purposes and uses". In this study the author used survey research method.

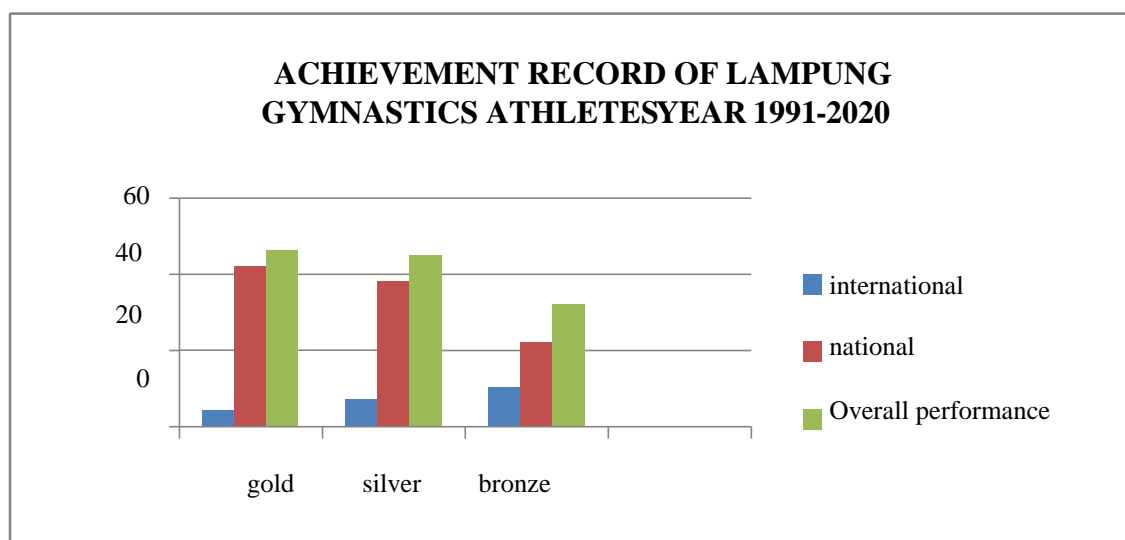
The type of research conducted is descriptive quantitative. Descriptive Quantitative is a type of research used to analyze data by describing or describing data that has been collected as it is. In this study, the authors used quantitative research methods. According to Sugiyono (Sugiyono, 2014). This type of quantitative research can be interpreted as a research method based on the philosophy of positivism, used to examine certain populations or samples, sampling techniques are generally carried out randomly, data collection using research instruments, data analysis is quantitative / statistical, with the aim of testing what has been determined. This research was conducted in Bandar Lampung, especially on Lampung Provincial Gymnastics Athletes in Idola (PENGPROV PERSANI) and in several places related to this research problem. The time of the research took place from March to May.

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## RESULT AND DISCUSSION

Gymnastics for Lampung province is a leading sport, namely the 2nd seed of the first leading sport is weightlifting in Lampung Province, gymnastics in the gymnastics category (Rhythmic, Aerobic, Artistic). This is according to the information conveyed by coach Rhythmic (Yuli yanti) in the glory year of gymnastics from 1990 Every year always gives a gold medal in Lampung Province to the Asean School championship, in SEA Games also gave medals to Lampung Province. And the most successful era was in PON XVI in 2004 which was held in South Sumatra Province. That was the year when gymnastics athletes at rhythmic were able to obtain many giving 4 gold medals and Sepriyadi in the artistic field 1 gold and at that time the points between weightlifting and gymnastics were most prominent at PON XVI.

It can be described that the Sons and Daughters of Persani Lampung have won National and International medals of 12 Gymnasts consisting of Artistic, Rhythmic, Aerobics disciplines with details of the amount of gold, silver and bronze from gymnastics disciplines until now still exist and consistently make the name of Lampung Province proud. Achievement is supported by the training process with an intensity adjusted by the coach to the athlete, thus gymnastics difloat needs to do exercises to measure aerobic and anaerobic capacity and physical activity.



**Table 1.** Percentage of Limpugn Gymnast Achievement Me dal Record

Gymnast from Lampung Province Yolanda based on defending at the 2018 Asian Games. Yolanda became one of the Lampung gymnastics athletes representing Indonesia. In 2013 he also won 2 silver medals from the kejurmas in Surabaya, then won 2 silver medals at Popnas, and 2 other silver medals from inter-club competitions in Surabaya. In 2014, again he won 3 gold medals at the PPLP event in Surabaya. Not only that, this gymnastics athlete also presented gold, silver and gold medals. bronze every year. Both in 2015, 2016, 2017, and finally in 2018 won 2 bronze medals from the Asean School Games in Kuala Lumpur. (Lampungpro) And in the international event, rhythmic gymnastics from Lampung Province won a bronze medal in the international championship Heliopolis International Tournament in Cairo, the 2nd Egypt, which was held for 2 days. Rhythmic gymnastics from Lampung Province who succeeded in making the country proud at the world level.

Tri Wahyuni, who played in the Rhythmic Individual Junior/Senior number on the ribbon, was able to rank third out of 8 participating countries. (Lampungpro) The Lampung Aerobics Gymnastic 2nd gymnastics exercise, Umi Sri Haryani and Denda Firmansyah were declared qualified to represent Indonesia at the 2021 South East Asia (SEA) Games, after winning 1st place in the national selection. (RRI Bandar Lampung). Gymnast athlete from Lampung Province Meiyusi Ade Putra Senior Artistic Gymnast Lampung is still mighty.

Because Pre-PON Gymnastics has an organization, namely (PERSANI) is a forum for coaching sportsmen (athletes) Lampung gymnastics who have the potential to achieve achievements both at national and international levels, it can be concluded that gymnastics comes from information, places or sources, achieving records of achievement that are of interest, and even winning in international events can become a leading and prestigious sport in Lampung Province.

The description of the object of data research is a description of data that used in a study. In testing the description of this data the researcher try to find out the picture or condition of the respondent who becomes samples in this study.

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### **Gender**

Based on the sex of the research subjects are grouped into two, Namely men and women with an overview of the distribution of subjects, it is seen that the number of male subjects is 2 people (20%) and female subjects are 8 people (80%).

### **Age**

Based on the age of the study subjects, researchers obtained samples with The age range is from 13 years to 34 years and categorized can be seen that the number of subjects with the range The age of 13-19 years is 5 people (50%), the age range of 20-27 years is 3 people (30%) and the age range of 28-34 years is as many as 2 people (20%).as many as 2 people (20%).

### **Height**

Based on the height of the study subjects, researchers get samples with a height range from 1.51 meters to 1.70 meters and It is categorized and seen that the number of subjects with a height range of 1.51 - 1.55 meters is 3 people (30%), height range Body1.56 - 1.60 meters is as many as 3 people (30%), height range Body1.61 - 1.65 meters is as many as 3 people (30%) and height range Body1.66 - 1.70 meters is as much as 1 person (10%).

### **Weight**

Based on the body weight of the study subjects, researchers obtained samples with a weight range from 41 kg to 60 kg and categorized as views that the number of subjects with a body weight range of 40 – 45 kg is as many as 3 people (30%), weight range 46 – 50 kg is as much as 1 person (10%), body weight range 51 – 55 kg is as many as 3 people (30%) and The weight range of 56 – 60 kg is as many as 3 people (30%). **Body Mass Index Anthropometry**

Body Mass Index shows that the average Athlete's Body Mass Index is 20.17 kg/m<sup>2</sup>, standard deviation is 1.94 kg/m<sup>2</sup>, lowest BMI is 17.26 kg/m<sup>2</sup> and the highest BMI is 22.66 kg/m<sup>2</sup>. **Aerobic apacity**

Based on the results of research and measurement of aerobic capacity of Gymnastics Athletes Lampung Province uses MultiStage Fitness Test or BleepTest shows that the average vo<sub>2</sub>max of Athletes is 34.09 ml/kg/min, standard deviation is 6.48 ml/kg/min, lowest VO<sub>2</sub>max is 26.40 ml/kg/min and The highest VO<sub>2</sub>max is 47.10 ml/kg/min.

### **Anaerobic apacity**

Based on the results of research and measurement of anaerobic capacity of athletes Lampung Provincial Gymnastics shows that the average anaerobic capacity is 4.71, standard deviation is 1.11, lowest anaerobic capacity value (best) is 2.50 and highest (worst) anaerobic capacity value is 5.91.

### **Physical Activity**

Based on the results of research and physical activity measurements of Gymnastics Athletes Lampung Province shows that the average physical activity is 2544MET minutes/week, standard deviation is 892.28MET minutes/week, the lowest physical activity value was 1440MET minutes/week and the lowest physical activity value was 1440MET minutes/week and the highest physical activity was 3600MET minutes/week.

Data collection of anthropometric profiles, aerobic capacity, anaerobic and physical activity. The respondents of this study were Provincial Gymnastics Athletes Lampung with 10 people. In gymnastics athletes there are 10, namely Aerobics, 3 gymnastics athletes 1 male and 2 female, Rhythmic 6 gymnastics athletes female and artistic 1 male gymnastics athlete. Here are the results of the data analysis frequency distribution of respondents based on anthropometric profile, capacity aerobic, anaerobic as well as physical activity

### **Anthropometry Body Mass IndexLampung Provincial Gymnastics Athletes**

An overview of the frequency distribution and percentage of the criteria for the Body Mass Index of Lampung Provincial Gymnastics Athletes totaling 10 people based on the results of research after being grouped and classified by interval class, A total of 2 female gymnastics athletes in Lampung Province (20%) have body categories that are in the thin category, 2 male gymnastics athletes have body categories that are in the normal category (20%), 6 female gymnastics athletes have body categories that are in the normal category (60%), and no athletes are in the pre-obesity, class 1 obesity, class 2 obesity and class 3 obesity categories.

### **Aerobics Capacity Lampung Provincial Gymnastics Athletes**

An overview of the frequency distribution and percentage of aerobic capacity criteria for Lampung Provincial Gymnastics Athletes totaling 10 people based on the results of the study after being grouped and classified by interval class, as many as 1 male gymnastics athlete in Lampung Province (10%) has an aerobic capacity category that is in the very good category, 1 male gymnastics athlete has an aerobic capacity category that is in a good category (10%), 3 female gymnastics athletes have an aerobic capacity category that is in a good category (30%), 3 female athletes have an aerobic capacity category that is in the medium



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category (30%), 2 female athletes had aerobic capacity categories that were in the low category (20%) and none of the athletes were in the very high and very low categories.

### Anaerobic Capacity of Lampung Provincial Gymnastics Athletes

An overview of the frequency distribution and percentage of anaerobic capacity criteria of Lampung Provincial Gymnastics Athletes totaling 10 people based on the results of the study after being grouped and classified by interval class as many as 1 male gymnastics athlete in Lampung Province (10%) has an anaerobic capacity category which is in the very good category, 4 female gymnastics athletes in Lampung Province (40%) have an anaerobic capacity category which is in a very good category, 1 male gymnastics athlete has an anaerobic capacity category which is in a good category (10%), 3 female gymnastics athletes have an anaerobic capacity category which is in a good category (30%), 1 female gymnastics athlete has an anaerobic capacity category that is in the moderate category (10%), and no athlete is in the less and very less category.

### Statistical Analysis of Research Data

The Pearson Product Moment correlation is denoted  $r$ , provided that the value is  $r$  Not more than the price  $(-1 < r < +1)$ . If  $r = 1$  means a negative correlation perfect,  $r = 0$  means no correlation, and  $r = 1$  means the correlation perfect positive (strong). Correlations marked positive indicate direction positive correlation. Correlations marked negatively indicate the direction of correlation the negative. While 0.000 indicates no correlation between variable. While the strength of the relationship will be consulted with the table interpretation. The results of the correlation analysis between anthropometric profile variables, Aerobic, anaerobic capacity as well as physical activity, are as follows:

**Table 2. Summary of Anthropometric Data Analysis (BMI), Aerobic Capacity, Anaerobic and Physical Activity**

Result	Variable					
	X <sub>1</sub> -X <sub>2</sub>	X <sub>1</sub> -X <sub>3</sub>	X <sub>1</sub> -X <sub>4</sub>	X <sub>2</sub> -X <sub>3</sub>	X <sub>2</sub> -X <sub>4</sub>	X <sub>3</sub> -X <sub>4</sub>
Correlation	0,625	0,234	0,905	0,379	0,670	-0,029
Sig. (2-tailed)	0,043	0,516	0,000	0,280	0,034	0,938
Criterion Correlation	Strong	Low	very Strong	Low	Strong	very Strong
Direction Correlation	Positive	Positive	Positive	Positive	Positive	Negative
Coefficient Determination (R <sup>2</sup> )	0,391	0,055	0,819	0,144	0,449	0,001
Equation Regression	$\hat{Y} = 18,685 + 0,626X$	$\hat{Y} = 38,356 + 0,233X$	$\hat{Y} = 4,761 + 0,905X$	$\hat{Y} = 31,115 + 0,378X$	$\hat{Y} = 16,562 + 0,669X$	$\hat{Y} = 51,418 - 0,029X$
Conclusion	Significant	insignificant	Significant	insignificant	Significant	insignificant

### Analysis of Anthropometric Profile (BMI) Data with Aerobic Ability

In the correlation table, a correlation coefficient price of 0.625 is obtained with significance 0.043. Based on the data above, testing can be done hypothesis by comparing the level of significance (p-value) as next: In this case it can be seen that the correlation coefficient is 0.625 with a significance of 0.043. Because of the significance of  $<0.05$ ,  $H_0$  is rejected, meaning  $H_a$  is accepted, which means that if there is a relationship, the relationship is significant between anthropometric profile (BMI) and aerobic ability.

Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The Pearson Product Moment correlation result returns 0.625 which means there is a correlation.

Positive between anthropometric profile (BMI) and aerobic ability. After the results are obtained that there is a significant positive relationship between anthropometric profile (BMI) and aerobic ability, the next step is to interpret the strength of the relationship between anthropometric profile (BMI) and aerobic ability. After interpretation with the table of the level of correlation coefficient relationship owned by Sugiono obtained The result is that the strength of the relationship between anthropometric profile (BMI) and aerobic ability is strong. Based on the results of the correlation coefficient, it can also be

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understood that the correlation is positive, meaning that the better the anthropometric profile (BMI), the better the aerobic ability with strong relationship strength.

While explaining the percentage of the influence of anthropometric profiles (BMI) on aerobic ability called the coefficient of determination which is the result of squaring R, a coefficient of determination (R<sup>2</sup>) of 0.391 was obtained, which contains the understanding that the influence / contribution of anthropometric profiles (BMI) on aerobic ability is By 39.1%, while the rest is influenced by other variables. The form of influence of anthropometric profile (BMI) (X1) on aerobic ability (X2) can be described by regression equation as can be seen in appendix 10 of the Coefficient table obtained namely  $\hat{Y} = 18.685 + 0.626X$

### **Analysis of Anthropometric Profile (BMI) Data with Anaerobic Ability**

In the correlation table, the price of the correlation coefficient is 0.234 with a significance of 0.516. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.234 with a significance of 0.516. Because of the significance of >0.05, Ho is accepted, meaning Ha is rejected, which means that if there is a relationship, the relationship is not significant between anthropometric profile (BMI) and anaerobic ability. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The correlation result of Pearson Product Moment produces 0.234 which means there is a correlation positive between anthropometric profile (BMI) and anaerobic ability.

After the results are obtained that there is a positive relationship between anthropometric profile (BMI) and anaerobic ability, the next step is to interpret the strength of the relationship between anthropometric profile (BMI) and anaerobic ability. After interpretation with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between anthropometric profiles (BMI) and anaerobic ability was low. Based on the results of the correlation coefficient, it can also be understood that the correlation is positive, meaning that the better the anthropometric profile (BMI), the better the anaerobic ability with low relationship strength.

While explaining the percentage of influence of anthropometric profiles (BMI) on anaerobic ability called the coefficient of determination which is the result of squaring R, a coefficient of determination (R<sup>2</sup>) of 0.055 was obtained, which contains the understanding that the influence / contribution of anthropometric profiles (BMI) to anaerobic ability is 5.5%, while the rest is influenced by other variables. The form of influence of anthropometric profile (BMI) (X1) on anaerobic ability (X3) can be illustrated by regression equations as can be seen in appendix 11 of the Coefficients table obtained, namely:  $\hat{Y} = 38.356+0.233X$

### **Analysis of Anthropometric Profile (BMI) Data with Physical Activity Level**

In the correlation table, the correlation coefficient price is 0.905 with a significance of 0.000. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.905 with a significance of 0.000. Because of the significance of <0.05, Ho is rejected, meaning Ha is accepted, which means that if there is a relationship, the relationship is significant between anthropometric profile (BMI) and physical activity level. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The correlation result of Pearson Product Moment produces 0.905 which means there is a correlation positive between anthropometric profile (BMI) and physical activity level. After the results are obtained that there is a significant positive relationship between anthropometric profile (BMI) and physical activity level, the next step is to interpret the strength of the relationship between anthropometric profile (BMI) and physical activity level. After interpreting with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between anthropometric profile (BMI) and physical activity level was very strong. Based on the results of the correlation coefficient it can also be understood that the correlation is positive, This means that the better the anthropometric profile (BMI), the better the level of physical activity with a very strong relationship. While explaining the percentage of the influence of anthropometric profiles (BMI) on physical activity levels called the coefficient of determination which is the result of squaring R, a coefficient of determination (R<sup>2</sup>) of 0.819 was obtained, which contains the understanding that the influence / contribution of anthropometric profiles (BMI) on physical activity levels is 81.9%, while the rest is influenced by other variables. The form of influence of anthropometric profile (BMI) (X1) on the level of physical activity (X4) can be illustrated by regression equations as can be seen in appendix 12 of the Coefficient table obtained, namely:  $\hat{Y} = 4.761+0.905X$

### **Analysis of Aerobic Ability with Anaerobic Ability**

In the correlation table, the correlation coefficient price is 0.379 with a significance of 0.280. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.379 with a significance of 0.280. Because of the significance of >0.05, Ho is accepted, meaning Ha is rejected, which means that if there is a relationship then the relationship is not significant between aerobic ability and anaerobic ability.

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Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The correlation result of Pearson Product Moment produces 0.379 which means there is a correlation positive between aerobic ability and anaerobic ability.

After the results have been obtained that there is a positive relationship between aerobic ability and anaerobic ability, the next step is to interpret the strength of the relationship between aerobic ability and anaerobic ability. After interpretation with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between aerobic ability and anaerobic ability was low.

Based on the results of the correlation coefficient, it can also be understood that the correlation is positive, meaning that the better the aerobic ability, the better the anaerobic ability with low relationship strength.

While explaining the percentage of the influence of aerobic ability on anaerobic ability called the coefficient of determination which is the result of squaring R, a coefficient of determination (R<sup>2</sup>) of 0.144 was obtained, which contains the understanding that the influence / contribution of aerobic ability to anaerobic ability is 14.4%, while the rest is influenced by other variables. The form of influence of aerobic ability (X<sub>2</sub>) on anaerobic ability (X<sub>3</sub>) can be illustrated by regression equations as can be seen in appendix 13 of the Coefficients table obtained, namely:  $\hat{Y} = 31.115 + 0.378X$

### **Analysis of Aerobic Ability Data with Physical Activity Levels**

In the correlation table, the correlation coefficient price is 0.670 with a significance of 0.034. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is 0.670 with a significance of 0.034. Because of the significance of <0.05, H<sub>0</sub> is rejected, meaning H<sub>a</sub> accepted, which means that if there is a relationship then the relationship is significant between aerobic ability and physical activity level. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The Pearson Product Moment correlation result is 0.670, which means that there is a positive correlation between aerobic ability and physical activity levels. Once it has been found that there is a significant positive relationship between aerobic ability and physical activity levels, the next step is to interpret the strength of the relationship between abilities aerobics with the level of physical activity. After interpreting with Sugiono's correlation coefficient relationship level table, it was found that the strength of the relationship between aerobic ability and physical activity level was strong. Based on the results of the correlation coefficient, it can also be understood that the correlation is positive, meaning that the more aerobic ability, the better the level of physical activity with strong relationship strength.

While explained the percentage of the influence of aerobic ability on the level of physical activity called the coefficient of determination which is the result of squaring R, a coefficient of determination (R<sup>2</sup>) of 0.449 was obtained, which contains the understanding that the influence / contribution of aerobic ability to the level of physical activity is 44.9%, while the rest is influenced by other variables. The form of influence of aerobic ability (X<sub>2</sub>) on the level of physical activity (X<sub>4</sub>) can be illustrated by the regression equation as can be seen in appendix 14 of the Coefficient table obtained, namely:  $\hat{Y} = 16.562 + 0.669X$

### **Analysis of Anaerobic Ability with Physical Activity Level**

In the correlation table, a correlation coefficient price of -0.029 with a significance of 0.938 is obtained. Based on the data above, hypothesis testing can be carried out by comparing the level of significance (p-value) as follows: In this case it can be seen that the correlation coefficient is -0.029 with a significance of 0.938. Because of the significance of >0.05, H<sub>0</sub> is accepted, meaning H<sub>a</sub> is rejected, which means that if there is a relationship then the relationship is not significant between anaerobic ability and physical activity level. Furthermore, if the correlation coefficient of the results of the Pearson Product Moment correlation analysis is not = 0, then it can be said that a relationship occurs. The Pearson Product Moment correlation result is 0.029, which means that there is a negative correlation between anaerobic ability and physical activity levels.

While explained the percentage of the influence of anaerobic ability on the level of physical activity called the coefficient of determination which is the result of squaring R, the coefficient of determination (R<sup>2</sup>) is obtained 0.001, which means that the influence / contribution of anaerobic ability to the level of physical activity is 0.01%, while the rest is influenced by other variables. The form of influence of anaerobic ability (X<sub>3</sub>) on the level of physical activity (X<sub>4</sub>) can be described by the regression equation as can be seen in appendix 15 of the Coefficient table obtained, namely:  $\hat{Y} = 51.418 - 0.029X$

## **DISCUSSION**

Based on the description of the general description data above, it shows that Lampung Province has a record of achievements that have been achieved by athletes in Persani Lampung from the last 20 years from the last year (1991-2019). It can be described that the Sons and Daughters of Persani Lampung have won 12 National level medals consisting of Artistic, Rhythmic, Aerobics

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disciplines with details of the number of gold, silver and bronze medals from all gymnastics disciplines to date still exist and remain consistent in making Lampung Province proud. The achievements of the Lampung athletes show that gymnastics has contributed greatly to determining the position of Lampung province in its participation in Pekan National Sports (PON), and subsequently has made a training and coaching center in Lampung Province. Therefore, the branch of gymnastics is quite superior, interesting and phenomenal. Interesting because this branch has made many achievements both regionally and internationally. Furthermore, phenomenal, because this branch almost every time participates in events and gets awards and champions. That is, the achievements achieved are always consistent, but the popularity is very less when compared to other sports, especially game sports.

Based on the results of gender shows that the research respondents are grouped into two, namely men and women with a picture of the distribution of images, it can be seen that the number of male respondents is 2 people and female respondents are 8 people. This shows that some or the majority of respondents are women, it can be seen that the interest of gymnasts is mostly women, in addition to the numbers determined for women such as Rhythmic gymnasts, this is in accordance with the opinion of the coach. Based on the age results, it shows that the research respondents get sampel with an age range of 13 years to 34 years and categorized and described it can be seen that the number of subjects with an age range of 13-19 years is 5 people, the age range of 20-27 years is as many as 3 people and the age range of 28-34 years is as many as 2 people. This shows that some or the majority of respondents are junior or young age determined in gymnast numbers according to the talents taken and interests, training to get potential athletes and golden age. This is in the opinion of the coach.

Based on height, it shows that the research respondents get samples with height from 1.51 meters to 1.70 meters and are categorized and described, it can be seen that subjects with a height range of 1.51-1.55 meters are as many as 3 people, the height range of 1.56-1.60 meters is as many as 3 people, the height range of 1.66-1.70 meters is 1 person. This shows that some or the majority of respondents are a minimum height range of 1.51 to 1.60 meters to be categorized as gymnasts in Rhythmic and Aerobics numbers who are shouted for artistic gymnastics selection Severance height ranges from 1.66 to 1.70 to be categorized as gymnasts. Body height is the distance from the floor to the vertex when a person's body position is standing upright (Rudiyanto. et al., 2012). Height itself can be said to be the cumulative length of the three parts of the body, namely the neck and head, leg length and body length (Etty, 2014). In addition, what is meant by the leg itself is the lower limb, including the hips and legs (Lisdiantoro & Pambudi, 2022).

This is according to the opinion of the trainer based on body weight, showing that the research respondents obtained samples with body weights from 41 kg to 60 kg and categorized and described, it can be seen that the number of subjects, the weight range of 40-45 kg is as many as 3 people, the weight range of 46-50 kg is as many as 1 person, the weight range of 51-55 kg is as many as 3 people, and the weight range of 56-60 kg is as many as 3 people. It shows that some or the majority of respondents are in the weight range of 45-55 kg can be categorized as gymnasts in the Rhythmic numbers that are chanted, while for the selection of Aerobics and Artistic gymnasts in the weight range of 56-60 kg. With athletes that have excess body weight, they can inhibit the movement carried out so that the results can be less effective and cannot be with fast movements as desired (Santika & Subekti, 2020).

Based on the results of the study in Figure 19, the results of the study after being grouped and classified from the graph can be concluded that as many as 2 gymnastics athletes have a body category that is in the thin category while 2 male athletes have a body category that is in the normal category and 6 female gymnastics athletes have a body category that is in the normal category This can show that there are no gymnast athletes who are in the pre-obese category, Grade 1 obesity, grade 2 obesity, grade 3 obesity. Based on the results of the study in Figure 20, the results of the study after being grouped and classified from the graph, it can be concluded that as many as 1 male gymnastics athlete has an aerobic capacity category that is in the very good category and 1 male gymnastics athlete has an aerobic capacity category which is in the good category while 3 female gymnastics athletes have an aerobic capacity category which is in the good category for 2 female gymnastics athletes have an aerobic capacity category is in the low category and no athletes are in the very high and very low categories. This shows that in gymnastics sports good endurance is needed to be able to support performance, the aerobic capacity of athletes seen from the strong endurance of someone who trains and regulates the athlete's Vo2Max according to the opinion of the coach.

Based on the results of the study after being grouped and classified from the graph, it can be concluded that as many as 1 male gymnastics athlete has an anaerobic capacity category which is in the very good category, 4 female gymnastics athletes have an anaerobic capacity category which is in the very good category, 1 male gymnastics athlete has an anaerobic capacity category which is in the good category, 3 female gymnastics athletes have an anaerobic capacity category anaerobic capacity is in the category moderate, and no athlete is in the less and very less categories. This shows that the anaerobic capacity of athletes can be seen by

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tests that use the Running Based Anaerobic Sprint Test (RAST) in the main speed and agility and fatigue of athletes, this is according to the opinion of the coach.

Based on the results of the study after being grouped and classified from the graph, it can be concluded that as many as 2 male gymnastics athletes have physical activity in the high category, as many as 2 female gymnastics athletes have a physical activity category that is in the high category, and 6 female gymnastics athletes have a physical activity category that is in the medium category, and no athletes are in the low physical activity category. Doing training activities is done mostly every day with the duration of training doing physical activity activities 3 to 4 hours, athletes are also required to be able to perfect every movement during the match. Therefore, an athlete must have excellent physique to be able to perform at its best.

In this study the instrument taken to measure anthropometric profile is the measurement of Body Mass Index, the instrument used to measure aerobic capacity is the Multi-Stage Fitness Test or Bleep Test, an instrument used to measure the anaerobic capacity of researchers using the Running-based Anaerobic Sprint Test (RAST). Anthropometry is a measurement involving the whole body to determine the proportions and ratios in a person's body (Maulina, 2018). Global Physical Activity Questionnaire (GPAQ) is an instrument to measure physical activity developed by WHO. (T. Jeff Chandler, 2019) physical activity values from the Global Physical Activity Questionnaire (GPAQ) have a level of validity being correlated with data from the accelerometer ( $r = 0.48$ ). GPAQ consists of several questions that collect from participants in physical activity in three domains, namely, as well as physical activity that is recreational or leisure, physical activity measurement using (GPAQ) which consists of 16 questions involving physical activity while working, traveling from place to place and athlete training activities, physical activity that is recreational or leisure.

### CONCLUSION

Research conducted on Lampung Provincial Gymnastics athletes by measuring anthropometric profiles, aerobic capacity, anaerobic and physical activity can be concluded that the body mass index in Lampung gymnastics athletes shows that they are generally included in the normal category with a percentage of 80%. In this case also Body mass index has a relationship with aerobic ability, has strong correlation criteria, positive and significant correlation direction, then body mass index has a relationship with physical activity level, has very strong correlation criteria, positive and significant correlation direction and body mass index has a relationship with physical activity level and has very strong correlation criteria, The direction of the correlation is positive and significant. Then the aerobic capacity of Lampung gymnastics athletes is included in the good category, with test data results Vo2max percentage 40%. Aerobic capacity has a relationship with anaerobic ability, has low correlation criteria, positive and insignificant correlation directions, aerobic capacity also has a relationship with physical activity levels, has strong correlation criteria, positive and significant correlation directions. And the anaerobic capacity of Lampung gymnastics athletes is included in the very good category, the results of the RAST data test with a percentage of 50%. Anaerobic capacity has a relationship with the level of physical activity, has very low correlation criteria, negative and insignificant correlation directions. As well as the physical activity of Lampung gymnastics athletes is included in the medium category, with a percentage of 60%. Aerobic capacity also has a relationship with physical activity levels, has strong correlation criteria, positive and significant correlation directions.

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## House Terrace Utilization as a Hydroponic Cultivation (Tjsl PT Pertamina Patra Niaga Fuel Terminal Gorontalo)



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**ABSTRACT:** Research on the utilization of house terraces as hydroponic cultivation areas has been conducted in Tenda village, Hulonthalangi sub-district, Gorontalo city. This research employed a qualitative approach with a focus on studying one of PT Pertamina Patra Niaga Fuel Terminal Gorontalo's Corporate Social Responsibility (CSR) programs, namely the Kelurahan Tenda Hijau program, located in Tenda village, Hulonthalangi sub-district, Gorontalo city.

The data collection for this research was conducted through observation and literature study, spanning a period of two weeks from May 26, 2023, to June 2, 2023. The focus of this study was twofold, examining the pre-implementation process and the program's actual implementation. The results of this research indicate that the utilization of house terraces as hydroponic cultivation areas is an effective solution to optimize limited space in urban areas. Hydroponic cultivation on house terraces has the potential to enhance local food availability, and the utilization of house terraces for hydroponic cultivation has environmental impacts.

**KEYWORDS:** hydroponic system, house terrace, tenda village, pt pertamina fuel terminal gorontalo

### INTRODUCTION

The utilization of house terraces as spaces for hydroponic cultivation has become an interesting topic in the field of urban agriculture. In densely populated urban areas, limited land often poses a major constraint on practicing agricultural activities. However, by employing hydroponic methods and utilizing house terraces, an effective solution can be achieved on producing plants within confined spaces.

Tenda village is an example of an area in Indonesia that faces land limitations and the need for local food sources. In this context, the utilization of house terraces as spaces for hydroponic cultivation becomes an interesting alternative to enhance food availability and reduce dependency on food supplies from outside the village.

PT Pertamina Patra Niaga Fuel Terminal Gorontalo as a state-owned enterprise (BUMN) engaged in oil and gas distribution, recognizes the limitations present in Tenda village as a long-term potential. Through its Corporate Social Responsibility program, PT Pertamina Patra Niaga Fuel Terminal Gorontalo collaborates with the residents of the village to form a dedicated group that implements a program called Kelurahan Tenda Hijau. Through the Kelurahan Tenda Hijau program, community members are taught, facilitated, and encouraged to collectively engage in hydroponic cultivation on their respective house terraces.

Hydroponic cultivation conducted on house terraces in Tenda village has the potential to provide significant benefits. Firstly, the hydroponic method allows plant growth without the need for soil. This is particularly important in situations where land is limited, and soil quality may be an issue. Additionally, hydroponics requires less water usage compared to conventional farming, thus helping to address any water scarcity issues that may exist in the area.

In this journal, the researchers explore the concept and practice of utilizing house terraces as spaces for hydroponic cultivation in Tenda Village. The researchers discuss important aspects such as designing hydroponic systems suitable for house terraces, as well as the challenges and opportunities that may arise in implementing this practice.

It is hoped that this journal will provide valuable insights for the residents of Tenda Village and the general public who are interested in utilizing house terraces as spaces for hydroponic cultivation. Furthermore, by implementing this practice, it is expected to promote increased availability of local food, strengthen food resilience, and provide positive economic and social benefits for the community.

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### METHODS

This research utilizes a qualitative approach with a focus on studying one of PT Pertamina Patra Niaga Fuel Terminal Gorontalo's Corporate Social Responsibility (CSR) programs, namely the "Kelurahan Tenda Hijau" program, located in Tenda village, Hulonthalangi sub-district, Gorontalo city. Data collection for this study was conducted through observations and a literature review. The research had two main focuses: the pre-implementation phase of the program and the program's actual implementation. The study was conducted over a period of two weeks, from May 26, 2023, to June 2, 2023.

### RESULTS

#### The Pre-implementation Phase of the Program

Prior to the implementation of the Kelurahan Tenda Hijau program, PT Pertamina Patra Niaga Fuel Terminal Gorontalo conducted Social Mapping to identify the issues and potentials within Tenda village, Gorontalo city. Through the social mapping process, it was revealed that many families relied on natural resources outside of Tenda village for their daily consumption. This was seen as a risky situation, especially in the event of another outbreak of the Covid-19 virus, which would restrict the movement of people, including their ability to access their daily food needs. Therefore, there was a need for concrete steps to prepare for local food resilience, particularly at the village level.

On the other hand, there are many houses in Tenda village that have terraces that can be utilized for hydroponic cultivation. Moreover, the findings from the Social Mapping process served as the basis for proposing TJSI (Social and Environmental Responsibility) programs to the management of PT Pertamina Patra Niaga, including the Kelurahan Tenda Hijau program.

After the program proposal is approved by the management of PT Pertamina Patra Niaga, the Kelurahan Tenda Hijau program is then socialized and formulated collaboratively with local stakeholders, such as the sub-district head, village head, neighborhood association (RT/RW) leaders, and influential community figures. The focus of the discussions revolves around the technical implementation of the program and identifying the members who will be involved in it. The involvement of these stakeholders ensures that the program is tailored to the specific needs and context of Tenda village.



Figure 1. Socialization of the Kelurahan Tenda Hijau program

During the process of socialization, there are pros and cons regarding who has the right to be part of this program group, and several weaknesses of the hydroponic system such as the need for special skills in hydroponic cultivation. This is in line with what Roidah (2014) stated, the weaknesses of the hydroponic system include:

- (1) High initial investment
- (2) Requires special skills to measure and mix chemical ingredients
- (3) The availability and maintenance of hydroponic equipment can be somewhat challenging

It is undeniable that hydroponic cultivation requires a significant amount of capital in practice. However, this expensive investment is necessary and directly proportional to the long-term benefits that will be obtained. As is known, hydroponic cultivation has its advantages. As stated by Putra (2019), some advantages of hydroponic cultivation include:

1. Vegetables grown in hydroponics do not come into direct contact with soil, resulting in cleaner and healthier produce.
2. Vegetables are less prone to pests and diseases, and the nutrient solution is tailored to meet the specific needs of the plants.
3. Hydroponics requires less land compared to traditional farming methods.
4. Hydroponically grown vegetables have high market value due to their quality and perceived health benefits.
5. Harvested vegetables can be immediately consumed in their fresh state, providing maximum freshness and nutritional value.



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Silvina and Syafrinal (2008) also mentioned the advantages of hydroponic farming, which include easier maintenance of plant cleanliness, no need for land preparation and weed control, sterile growing media, efficient use of water and fertilizers, continuous cultivation regardless of the season, suitability for small land areas, and protection from direct rain and sunlight.

### The Implementation of the Program

The implementation of the Green Tent Program began with a hydroponic cultivation training attended by all members of the group. The training was inaugurated by the Manager of PT Pertamina Patra Niaga Fuel Terminal Gorontalo at that time.

Hydroponic plants generally require a significant amount of water. Siregar (2021) states that hydroponic cultivation is a technique that utilizes a nutrient-rich water medium. The literal meaning of hydroponics is "working water" (Masduki, 2017).



Figure 2. First day of hydroponic cultivation training

On the first day of the training, all the necessary facilities and equipment for hydroponic cultivation were handed over to the farming group. These hydroponic facilities and equipment were specifically tailored to the average size of the participants' household terraces as part of the Green Tent Program. To ensure effective knowledge transfer, the training sessions were not conducted as a one-time event. Instead, multiple training sessions were planned, with each session focusing on specific topics based on the evaluation of the previous training. This approach allowed for a progressive learning experience and addressed any specific areas that needed further clarification or improvement. Each training session ended with practical exercises and group discussions. These practical sessions provided participants with hands-on experience in setting up and managing the hydroponic systems. The group discussions fostered a collaborative learning environment, allowing participants to share their insights, exchange ideas, and address any challenges they encountered during the practical exercises.

By incorporating practical sessions and group discussions, the training aimed to enhance participants' understanding of hydroponic cultivation and enable them to apply the knowledge effectively in their own setups



Figure 3. Second day of hydroponic cultivation training

In the implementation of the program, the Hydroponic Farming group, consisting mainly of PKK (Family Welfare Movement) mothers from Tenda Village, not only received training but also received six months of guidance from the private sector. This support aimed to ensure that the processes and outputs produced by the Hydroponic Farming group in the Green Tent Program were optimized.



Figure 4. Hydroponic cultivation assistance

Furthermore, in support of the Kelurahan Tenda Hijau program, group members are provided with guidance and technical support by trained mentors or facilitators. These facilitators then assist the group members in understanding the basic concepts of hydroponics, selecting suitable plant varieties, planning the layout of the hydroponic system, determining the appropriate nutrient solution formula, and implementing more efficient water management.

Through this mentoring process, group members also gain a better understanding of practical steps in caring for plants, controlling pests and diseases, and regularly monitoring plant quality.



Figure 5. One of the results of hydroponic cultivation

## CONCLUSIONS

Based on the conducted research, the following conclusions can be drawn:

1. Utilizing house terraces as hydroponic cultivation areas is an effective solution to optimize limited space in urban areas.
2. Hydroponic cultivation on house terraces has the potential to improve local food availability. By utilizing house terraces, group members can produce their own vegetables and other food crops, reducing dependence on external food supplies.
3. The utilization of house terraces for hydroponic cultivation has environmental impacts. This method reduces the water usage required compared to conventional farming and decreases the risk of soil erosion that can occur on open land

## ADVICE

This research hopes to pave the way for further studies related to hydroponics. One suggested area of research is conducting a feasibility study on the economic aspects of hydroponic cultivation on house terraces. This research could involve analyzing the investment costs, operational expenses, and potential income generated from hydroponic cultivation on house terraces.

Additionally, it is important to pay attention to research on the social and behavioral factors that influence public acceptance of hydroponic cultivation on house terraces. Understanding these factors can provide insights into how to promote and encourage widespread adoption of hydroponics in the community.

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# The Actual Situation of the Insurance Business for Import and Export Goods Transported by the Sea at Insurance Enterprises in Vietnams



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**ABSTRACT:** To assess the current situation of the insurance business of import and export goods transported by sea at insurance enterprises in Vietnam. The author has used two research methods, namely the methodology and the meta-analysis method, to solve the research problems. Accordingly, the article has presented the theoretical basis for the insurance business of import and export goods transported by sea, the role, risks, losses, and insurance conditions of this service. Based on business data of insurance business for import and export goods transported by sea, the author has evaluated and analyzed this business. Assessing business results, and existing points in this business in Vietnam. The insurance business of import and export goods by sea in Vietnam is not yet internationally competitive and lacks long-term customer relationships. The international level is the difficulties that are hindering the development of Vietnam's insurance enterprises. The research results are also the basis for insurers to recognize weaknesses in the marine insurance business and have a way to overcome them in the future.

**KEYWORDS:** Insurance business, insurance enterprises, Marine insurance, Vietnam

## 1. THE PROBLEM

Cargo transportation by sea often encounters many potential unforeseen risks, including objective and subjective risks of people. Ship owners and shippers face great challenges when risks arise that are not promptly reimbursed by insurance companies, especially catastrophic risks causing great losses. Financial difficulty in remediating the damage caused by that risk could result in bankruptcy. Vietnam is on the path of economic modernization with strong development in all economic sectors. Especially after Vietnam joined the WTO and joined the Free Trade Agreements and deepened international economic integration, import and export activities became more and more exciting. This proves the great potential for import and export goods and the potential for the development of insurance for import and export goods transported by sea. However, in Vietnam today, the implementation of this insurance business still faces many difficulties and challenges, especially the issue of improving operational efficiency. The content of this article aims to learn about the theoretical basis of insurance for import and export goods transported by sea. Indicate the difficulties encountered when carrying out business activities of insurance for import and export goods transported by sea.

## 2. THEORETICAL BASIS

### 2.1. Insurance of goods imported and exported by sea

Cargo insurance for imports and exports by sea, also known as marine insurance, is one of the types of non-life insurance. This insurance helps to protect imported and exported goods against risks occurring at sea and by land related to the transportation process and causing damage and loss of goods. As the earliest profession, the oldest marine insurance policy is recorded in 1339 in Italy. Marine insurance developed with the development of foreign trade. In the face of possible risks from accidents, natural disasters, and piracy to goods, shippers have sought every way to secure their own assets and marine insurance is a tool of control and risk management. However, it was not until 1779 that a group of members of the Lloyd's organization gathered the mandatory principles and put them together in a contract called the Lloyd's Contract. This policy was recognized by the UK and used by many countries until the change in 1982. A new marine contract form is recognized and widely used by the Association of London Insurers to this day. In Vietnam, the development of insurance for import and export goods by sea is much later than in the world. The first service of insurance for import and export goods by sea was launched by Bao Viet enterprise (then a state-owned enterprise) in Vietnam in 1965. Before that, we were the only agents to carry out the operation. Insurance for import and export

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goods by sea for Chinese enterprises. Since the 1970s, Vietnam has had many import-export relationships with a group of socialist countries such as Russia, North Korea, and Poland, but we mainly carry out reinsurance activities. In the period after the liberation of South Vietnam from 1975 to 1992, Baoviet expanded many operations and scope of activities. In addition to the countries of the socialist group, Baoviet also cooperates in marine insurance with many countries around the world. In order to create conditions for the development of the insurance industry and economic development through the import and export of goods, Vietnam has created a legal corridor for these activities to develop. The issuance of the new General Rules - the General Rules 1990 along with the Vietnam Maritime Code helped to regulate the issues in marine insurance. In 1993, to meet the market's development and ensure the stability of the production and import-export economy, the government issued Decree 100/CP, which regulates and guides business activities insurance. Many insurance businesses were established after this decree. Currently, with 32 non-life insurance enterprises, of which 31 are engaged in the marine insurance business, it has created a vibrant, competitive, and growing market day by day.

### **2.2. The role of insurance for import and export goods transported by sea**

Not only has a traditional business, insurance of import and export goods transported by sea become a custom in international trade activities. Like other forms of transportation, this service faces many risks due to the long and difficult-to-control transportation process. Therefore, in order to ensure business capital, expand production activities, and avoid the risk of bankruptcy for import-export enterprises, marine insurance assumes four roles to solve the above problems. The first is the role of compensation for damage and risks. The insurance enterprise will compensate the loss of the risk for financial for the owner of the goods whose goods are insured for import and export goods transported by sea. In addition to insurance for human-caused risks, it also guarantees for risks beyond human ability such as incidents caused by natural disasters, and wars. When an import-export business has a loss of goods, they will be compensated a certain amount, helping them to preserve their business finances. According to the Vietnam Insurance Association, the amount of money indemnification by insurance businesses accounts for 24% of premium revenue in 2022. The second is the role of preventing and limiting financial losses. An insurance business is a for-profit business. Therefore, they continuously make statistics, evaluate and monitor the risks and potential risks for goods transported by sea. It is from those analyses and evaluation results that insurers have a solid basis to take preventive measures and minimize possible losses. The third is the role of creating absolute safety. When participating in buying insurance for import and export goods transported by sea, import and export businesses will have a third party to ensure possible risks for their goods. As a result, these businesses feel more secure, have spiritual support, and are protected from a solid cloth shield. Finally, the role of attracting foreign currency and increasing benefits for the economy. When import and export enterprises import goods at FOB and CF prices, and export at CIF and CIP prices, it will create competitiveness for domestic insurers with foreign ones. At the same time, when the business of insurance for imported and exported goods by sea develops, it will help domestic import and export businesses not have to buy insurance abroad. These factors have contributed to promoting the development of domestic enterprises and saving the consumption of foreign currency.

### **2.3. Risks and losses in the insurance of import and export goods transported by sea**

#### *Risk*

Risks in the insurance of import and export goods transported by sea are disasters, accidents, unexpected and accidental occurrences, or dangerous threats, which, when occurring, will cause loss to the business. Import and export are covered. Risks in the import and export of goods transported by sea are of many types. Risks caused by natural disasters are phenomena caused by nature such as rough seas, storms, hurricanes, lightning, and bad weather that humans cannot resist. Risks due to unexpected accidents at sea such as stranding, shipwreck, cargo destruction, fire, explosion, disappearance, collision with a ship, or another fixed or moving object other than water. Risks from human action are theft, shoplifting, loss of robbery, war, strike, arrest, confiscation. In addition, there are other risks such as the risk of loading and unloading goods, smelly goods, contamination. If the risk is classified, there is a business risk and a separate insurance risk. Business risks are normally insured risks. It includes risks such as stranding, sinking, fire, collision, throwing goods into the sea, missing and additional risks such as tearing, breaking, rusting, flattening, warping... However, there are also risks. are not insured such as risks caused by smuggling, confiscation, breaking the siege, intentional mistakes of the insured, improper packaging ... caused. Separately insured risks include those excluded from the insurance of import and export goods transported by sea. These are special, non-maritime risks such as war, strike, or riot. These risks are only insured if purchased separately, additionally. However, shippers are insured when the separately insured peril must have been the direct cause of the loss.

#### *Damage*

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Loss in import and export cargo insurance is damage or damage to goods caused by risks. Depending on the size and extent of the loss, there are two types of loss: partial loss and total loss. Partial loss is a loss where a part of the goods of an import-export enterprise covered by an insurance policy is lost, damaged or destroyed. Part loss can be loss in quantity, weight, volume or value. Total loss means that all goods of the import-export enterprise insured under the insurance contract are lost, damaged, damaged or become deformed or deformed, no longer as they were at the time of insurance. A total loss may be an actual total loss or an estimated total loss. Total loss is the fact that the entire insurance import-export enterprise is lost, damaged or destroyed, and cannot be recovered as it was when it was newly insured. In this case, the insurer must indemnify the entire insured value or the insured amount. The estimated total loss or damage of the insurance import-export enterprise is less than the total loss but the insurance import-export enterprise is reasonably waived because the actual total loss is deemed unavoidable or the costs of preventing or recovering the loss are greater than the value of the goods insured. When the goods of the import-export enterprise are abandoned, the ownership of the goods will transfer to the insurer and they have the right to dispose of the goods. Depending on the nature of the loss and insurance liability, the loss is divided into two types: general average and special average. General average means special sacrifices or expenses made intentionally and reasonably to save the ship and its cargo from peril. Private loss is a loss that causes damage only to one or more interests of shippers and shipowners on a ship. In private loss, in addition to material damage, there are also related costs to limit the damage when the loss occurs, called separate cost loss. Personal loss is the cost of preserving the goods to reduce damage or prevent further damage, including the costs of loading, unloading, shipping, repacking, and replacing packaging at the port of departure and along the way road.

### **2.4. Insurance conditions**

Insurance conditions in the insurance of import and export goods transported by sea are those that stipulate the scope of liability of the insurer for the risks of loss of goods of the participating import-export enterprise. Therefore, the scope of liability of the insurance enterprise depends on the insurance conditions agreed upon by the parties in the contract. The insurer's liability for goods under Vietnam's original insurance conditions is stipulated in the 1990 General Rules on Insurance of Import and Export Goods Transported by Sea issued by the Ministry of Finance. This Code of Conduct builds on the ICC articles of 1 January 1982 of the Institute of London Underwriters [ILU]. As these conditions are applied in most countries of the world, they have replaced the old conditions of ICC-1963 and become common international practice. Those conditions are Institute cargo clauses C (ICC-C), Institute cargo clauses B (ICC-B), Institute cargo clauses A (ICC-A), Institute war clauses and Institute strikes clauses.

### **3. METHODS**

Through the methodology, the author has collected documents related to the insurance business of import and export goods transported by sea. The theoretical basis is built from documents on the formation of the marine insurance business, the birth of insurance businesses and the development of the marine insurance business in Vietnam. The author also explores the role of this profession and insurance conditions are also included in the article to clarify the theoretical basis and research issues. By the method of analysis and synthesis, the author has synthesized data on the insurance business of goods imported and exported by sea in the Vietnam market from the Vietnam Insurance Association. The aggregated data presented in the article are data on revenue, growth rate, and the group of businesses with the highest market share in marine insurance in the 5 years from 2018 to 2022. The author also relies on these data tables to analyze the current situation and draw out the shortcomings in the insurance business of import and export goods transported by sea in the Vietnamese insurance market.

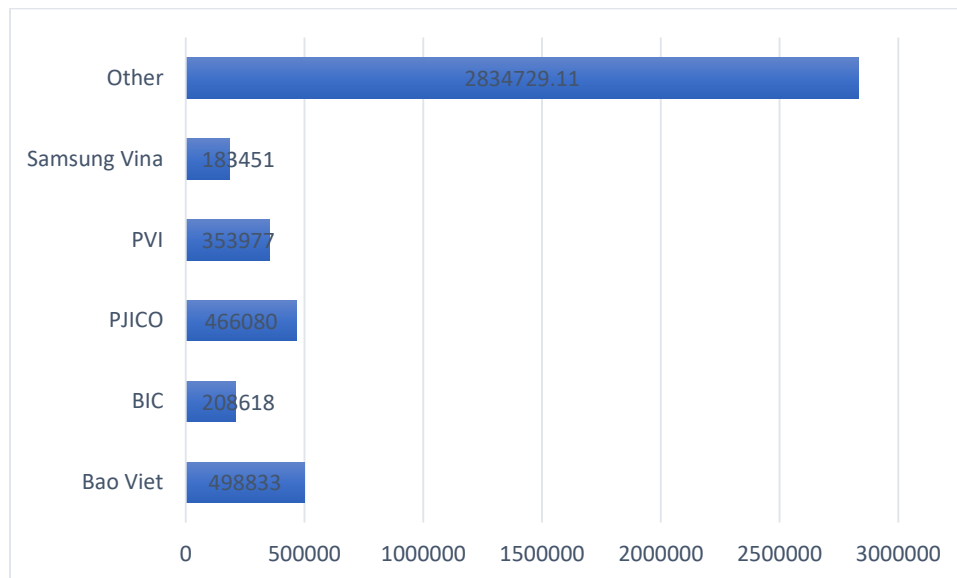
### **4. ACTUAL SITUATION OF INSURANCE BUSINESS FOR GOODS IMPORTED AND EXPORTED BY THE SEA AT VIETNAMESE INSURANCE ENTERPRISES**

The development of the insurance business of import and export goods transported by sea has created favorable conditions for importers and exporters to expand their operation scale and ensure the financial capacity of enterprises. Vietnam is on the path of economic modernization with the strong development of all economic sectors. Through free trade agreements, Vietnam is increasingly integrated into the international economy and import, and export activities are stronger. However, imported and exported goods participating in domestic insurance are very low. Currently, more than 80% of the market share of import and export cargo insurance is in the hands of foreign companies. According to the Vietnam Import-Export Report, the total import and export turnover in 2022 is 730.2 billion USD and the trade surplus is 12.4 billion USD while the total insurance premium for goods imported and exported by sea is the whole market only about 150 million USD.

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### 4.1. Business results of insurance for imported and exported goods by sea at Vietnamese insurance companies

As mentioned, there are currently 32 non-life insurance companies operating in the Vietnamese market. OPES insurance enterprise was just established in 2022, so it has not generated any revenue in the insurance business of goods imported and exported by sea. Five businesses dominate this business with a total share of 38%: Bao Viet with 11% of total market revenue, the second is PJICO with 10%, the third is PVI Insurance with a share of 8%, BIC and Samsung Vina accounted for 5% and 4% respectively. The proportion of 62% of revenue from insurance of import and export goods by sea belongs to the remaining 26 enterprises.



**Figure 1: Market share of import and export cargo insurance by sea**

**Unit: million VND**

**Source: Vietnam Insurance Association**

In the data on insurance premium revenue of the whole market in the five years from 2018 to 2022, we see two notable points: the overseas reinsur section. Very low Assumed and Overseas reinsur. Ceded is too tall. Explanation for Overseas reinsur results. The low insurance is due to the weak financial capacity of Vietnamese insurers, making it difficult to receive large reinsurance contracts. At the same time, we also need to cede reinsurance abroad to share insurance policies with the world's major insurers. This result can be seen that Vietnam's insurance enterprises are still weak, partly because of the shorter development time compared to other insurance companies in the world and partly because the Vietnamese economy is still weak compared to other insurance companies in the world with countries in the developed group.

**Table 1: Insurance premium income by line of insurance**

**Unit: million VND**

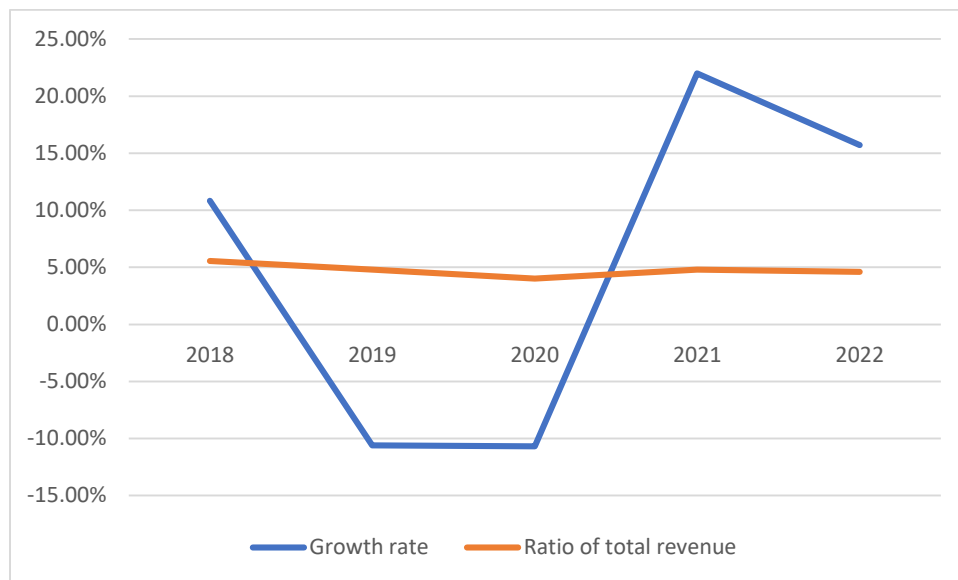
Criteria	2018	2019	2020	2021	2022
Direct insur. premium	2591631	2530828	2260463	2746887	3176920
Domestic reinsur. assumed	132364	122506	101107	73937	91117
Overseas reinsur. assumed	96283	71391	71674	18640	32329
Domestic reinsur. ceded	299434	356429	249794	307577	372179
Overseas reinsur. ceded	831348	796297	694314	845657	982222
Net premium	1689496	1571999	1489136	1686231	1945965

**Source: Vietnam Insurance Association**

Vietnam's exports are mainly raw materials and processed goods, making it difficult to compete in the international arena. Foreign partners often outsource shipping lines and insurance companies when signing commercial contracts, even for dominant products

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such as seafood, rice, coffee, and pepper. Therefore, a very small percentage of Vietnam's exports participate in buying domestic insurance. Many industry experts also said that Vietnamese enterprises, especially those with small and medium capital, are not familiar with international trade practices, of course often sell at FOB prices, so they do not need to buy insurance. transport. As a result, Vietnam's marine import-export cargo insurance industry suffered heavy losses. In any case, domestic insurers have an advantage in handling claims overpaying claims abroad. But right now, most companies have no real interest in it. In international trade, the buyer, as the owner of the goods, has the right to request the appointment of a carrier and an insurance company. Aware of this, many Vietnamese enterprises have actively purchased domestic insurance when importing goods. However, imported goods are still handled by foreign insurers because the number of companies with such awareness is very small.



**Figure 2: Growth rate of direct premium by line of insurance**

Source: Vietnam Insurance Association

In the Claims by Line of insurance table, we see that Direct insurance claims decrease in 2020 due to the impact of the covid-19 epidemic. During the 5 years, the ratio of Direct insurance claims compared to Direct insur. Premium about 30%/year. Thus, the profit of the insurance business of import and export goods by sea is very high. Therefore, promoting development and regaining market share from foreign insurers is essential for sustainable development and increasing revenue for Vietnamese insurers.

**Table 2. Claims by line of insurance**

Unit: million VND

Criteria	2018	2019	2020	2021	2022
Direct insurance claims	622389	650762	56943	699884	771009
Domestic reinsur. recovery	814109	133442	91509	226744	94136
Overseas reinsur. Recovery	154364	149406	167093	116470	255460
Domestic reinsur. Assumed claims	516229	46637	46970	33307	29308
Overseas reinsur. Assumed claims	59517	50477	32553	21293	13013
Net claims paid	4166669	377955	339248	3473189	411557

Source: Vietnam Insurance Association

### 4.2. Difficulties

The insurance business of goods imported and exported by sea in Vietnam is not yet internationally competitive. This type of insurance is an internationally competitive type of insurance based on a long-term customer relationship. In the context of lack of financial capacity and experience, it is very difficult to convince customers, especially customers in foreign areas, to sign insurance contracts with domestic insurance companies. On the other hand, a significant portion of goods are imported under ODA loan/grant programs, and aid agencies are often the first to arrange insurance. According to market practice, domestic importers



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and exporters often import at CIF prices and sell at FOB prices, leading to a lack of business partners for insurance companies. Besides, Vietnam's sea transport ships have been operating for many years and deteriorated, slowing down transit time and increasing risks. Shippers around the world often choose a shipping company with a new fleet of ships and a reputable, long-standing insurance company. Therefore, although sea transportation currently accounts for 80% of Vietnam's total import and export freight demand, domestic shipping contracts are very few and revenue from this operation accounts for a small proportion of the shipping lines assurance Company.

The operating capacity of Vietnamese insurance companies is still limited and has not reached the international level. Except for Bao Viet Group, which was established in 1965 with a large capital, other non-life insurance companies were established after Decree 100/CP dated December 18, 1993, with relatively low business capital. On the other hand, many foreign insurance companies were established hundreds of years ago with working capital of billions of dollars. In addition, in general, the qualifications of insurance personnel are still inadequate compared to market demand and weak compared to global standards. The insurance business is very diverse and includes different types of insurance. However, as mentioned above, Vietnam's import and export business practices are completely different from international practices, leading to the following consequences. The non-life insurance business in Vietnam has almost completely lost market share. It is not difficult to understand that foreign traders are entitled to charter ships and deliver goods at Vietnamese ports for both export and import. If the charter right belongs to a foreign trader (even if the Vietnamese carrier has taken steps to charter under the official contract), the right to choose a cargo insurance company must necessarily belong to the foreign trader outside. Only a very small percentage of foreign traders come and buy insurance for their goods from Vietnamese insurance companies.

### 5. CONCLUSION

As an important operation in the business activities of insurance companies, the insurance of import and export goods transported by sea has not achieved the development commensurate with the import and export market in Vietnam. Finding solutions to overcome difficulties such as poor competitiveness and weak business capacity is the way to help Vietnamese insurers gain market share in this insurance business in the future.

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## Changes in Children's Self-Confidence Level after Participating in Confident Child School Program 2018 - 2022



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**ABSTRACT:** This study aims to determine the level of self-confidence of the beneficiaries of the Sekolah Anak Percaya Diri program. The sample in this study were students of the Sekolah Anak Percaya Diri program as many as 57 children or all participants who actively participated in the program. The results of the analysis show that every year the self-confidence of children who take part in the Sekolah Anak Percaya Diri program has increased with the final results as many as 45 children in the good category, 11 children in the medium category and 1 child for the less category.

**KEYWORDS:** Self-Confidence, Children

### INTRODUCTION

Self-confidence is a person's belief in the abilities that exist within him. Individuals who have confidence in doing something without asking others whether what they are doing is necessary or not, right or not, they will do that activity. If someone has the belief that what will be done is right according to what is in him, then it will be done without asking for consideration from other parties.

Trust is a person's mental attitude in assessing himself and the surrounding objects so that the person has confidence in his ability to be able to do something according to his abilities. Based on this explanation, it can be concluded that self-confidence is the belief to do something in the subject as a personal characteristic in which there is confidence in one's ability, optimistic, objective, responsible, rational and realistic.

Self-confidence serves an important function to actualize the potential possessed by a person. The description above is in line with the opinion of Suyanto (2013: 15) "The attitude of self-confidence is the main thing that a learner must have in learning as well as in everyday life". Because with an attitude of self-confidence there will be a belief in an individual in all aspects of his strengths and abilities and with this belief makes him able to achieve various goals in his life. Problems that arise because someone lacks self-confidence, for example students who cheat on exams are examples that these students do not believe in their own abilities.

does not believe in his own abilities, he relies more on other parties. This illustrates unpreparedness, especially in students in facing exams. In addition, the low self-confidence of learners encourages learners to cheat in doing test questions cheating in working on exam questions.

### Aspects of Self-Confidence

Lauster (in Gufron and Risnawati, 2011) argues that excessive self-confidence is not a positive trait. In general, it will make people less careful and will do whatever they want. This is a behavior that causes conflict with others.

Individuals who have high confidence will look calmer. They have no fear, and are able to show their confidence at all times. According to Lauster (in Gufron and Risnawati, 2011) people who have positive self-confidence are mentioned below; a. Self-confidence

Self-confidence is a person's positive attitude about himself. He or she is truly capable of what he or she will do. b. Optimistic

Optimism is a positive attitude owned by someone who always has a good outlook in facing everything about himself and his abilities. c. Objective

One who views mistakes or things according to the proper truth. Not according to one's own personal or self-righteousness. d. Responsible

Responsibility is the willingness of people to bear everything that has become a consequence. e. Rationality and Reality

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Rationality and reality are the analysis of a problem, a thing, an event by using thoughts that are acceptable to reason and in accordance with reality.

Based on the above opinion, it can be concluded that self-confidence is the nature of a person who has aspects of self-confidence, optimistic, objective, responsible, rational and realistic.

Self-confidence is influenced by several factors. The following are these factors; a. Self-Concept

According to Anthony (in Gufron and Risnawati, 2011) the formation of self-confidence in a person begins with the development of a self-concept obtained in his association in a group. The results of the interactions that occur will produce a self-concept. Self-concept is defined as a person's picture of themselves and is a combination of physical, psychological, social, emotional aspirational beliefs, and the achievements they make. Self-concept is one of the important aspects for individuals in behavior.

Self-concept is what one feels and thinks about oneself. There are two self-concepts, namely the concept of the cognitive component and the self-concept of the affective component. The cognitive component is called Self Image and the affective component is called Self Esteem. The cognitive component is the individual's knowledge about himself including the knowledge of "who I am" which will give a picture of myself. This picture is called self-image. Meanwhile, the affective component is called self-esteem individuals towards themselves which will shape how self-acceptance and self-esteem of individuals. b. Self-esteem

A positive self-concept will form a positive self-esteem as well. Self-esteem is an assessment made of oneself. Santoso argues that a person's level of self-esteem will affect a person's level of selfconfidence. self-esteem is an important aspect of personality. So important that it has been studied by many researchers. Self-esteem is one of the factors that determine individual behavior. Everyone wants a positive appreciation for themselves. Positive appreciation will make a person feel valuable, successful and useful to others. Even though he has weaknesses or shortcomings both physically and psychologically. The fulfillment of self-esteem needs will result in an optimistic and confident attitude. Conversely, if this self-esteem need is not met, it will make a person or individual behave negatively.

Self-esteem is an individual's evaluation of themselves as low or high. The assessment is seen in their appreciation of their existence and significance. Individuals who have high self-esteem will accept and appreciate themselves for who they are. Self-esteem includes the evaluation and appreciation of oneself and results in a high or low assessment of oneself. A high self-assessment is an assessment of one's condition, appreciating one's strengths and potential, and accepting one's shortcomings, while a low self-assessment is an assessment of not liking or being satisfied with one's condition, not appreciating one's strengths by seeing oneself as something that is always lacking.

### **METODE PENELITIAN**

#### **Research Variables**

The variable in this study is a single variable, namely self-confidence.

#### **Operational Definition of Variables**

Self-confidence is an aspect of personality that individuals have as a whole will have a good impact on these individuals in everyday life such as feeling able to achieve various goals in their lives and being better able to direct behavior towards success and drive for achievement.

#### **Population**

The population of this study were all 57 confident children's school students.

#### **Research Techniques**

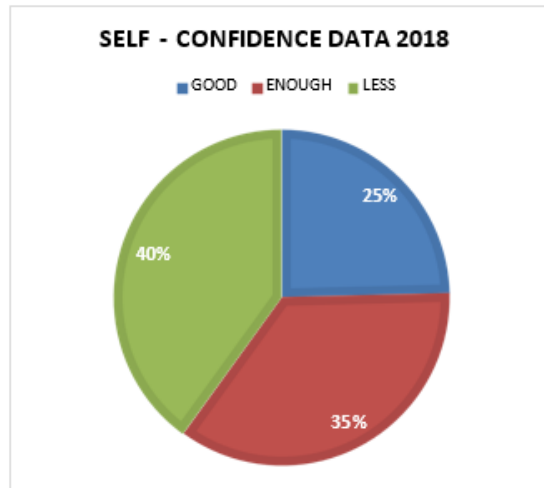
This study uses a qualitative approach with an evaluation design on the level of self-confidence of learners through filling out questionnaires and evaluations.

### **RESEARCH RESULTS AND DISCUSSION**

This research was conducted at Sekolah Anak Percaya Diri in Makassar which is located at Barukang 3 Lorong 3 Makassar City. The population in this study were all children of confident child school Makassar consisting of 57 students, so the results obtained were:

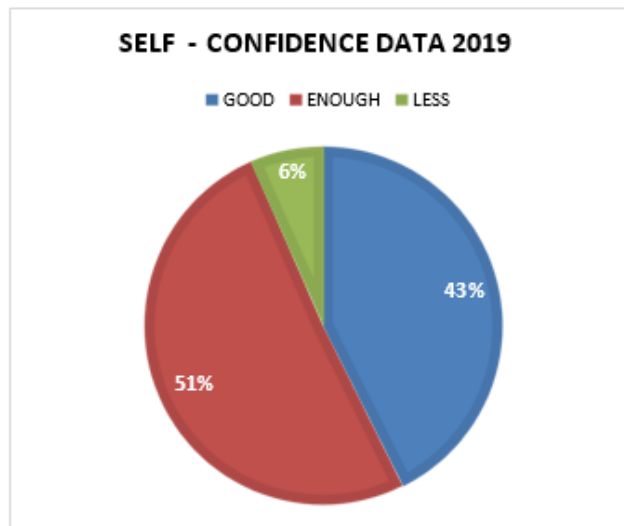
# Changes in Children's Self-Confidence Level after Participating in Confident Child School Program 2018 - 2022

## A. Self-Confidence Data 2018



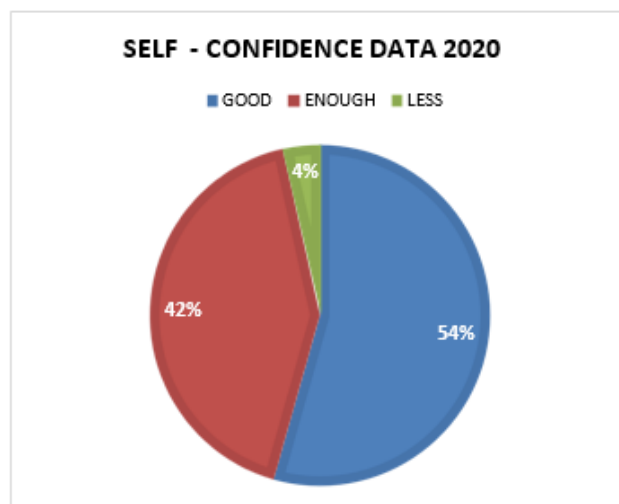
From the data above, it can be concluded that the number of children who are less confident is far more, namely 40%, while the number is quite confident as much as 35% and 25% who are confident.

## B. Self-Confidence Data 2019



From the data above, it can be concluded that the number of children who are less confident has decreased very significantly from 2018, namely 40% to 6%, while the number of children who are quite confident is 48% and 46% are confident.

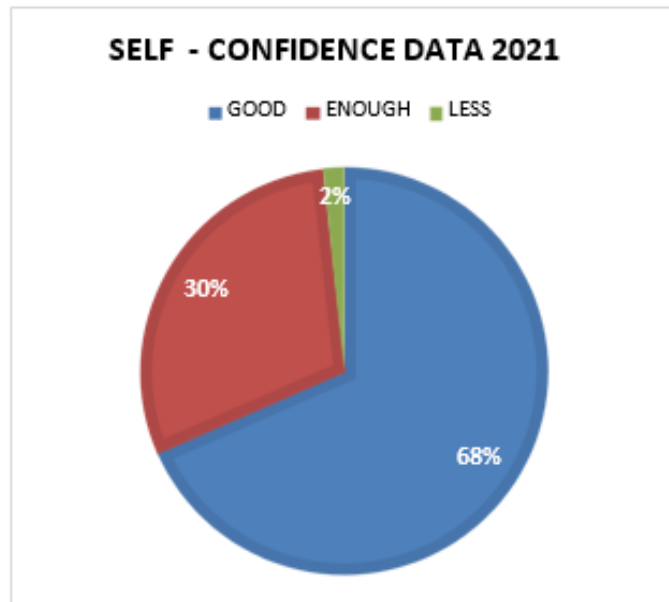
## C. Self-Confidence Data 2020



## Changes in Children's Self-Confidence Level after Participating in Confident Child School Program 2018 - 2022

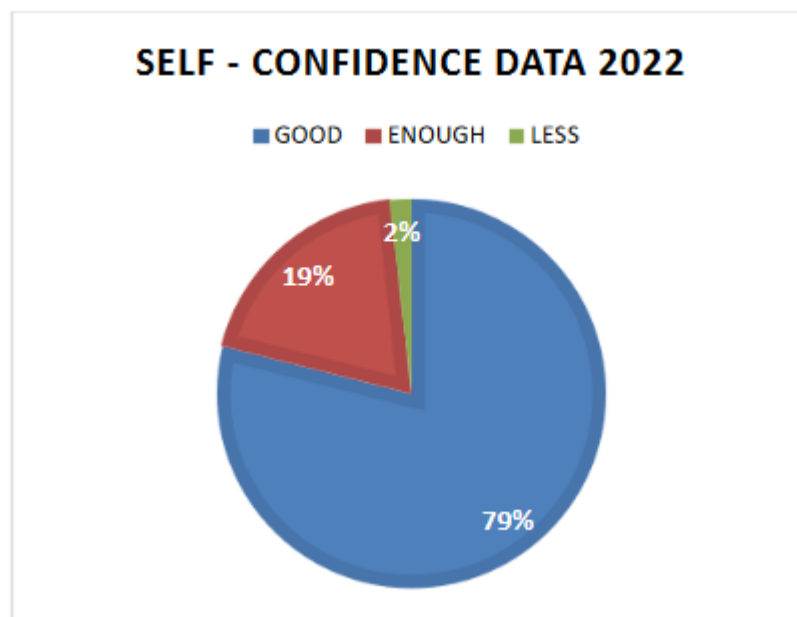
From the data above, it can be concluded that the number of children who are confident is 54%, 42% are quite confident and 4% are less confident.

### D. Self-Confidence Data 2021



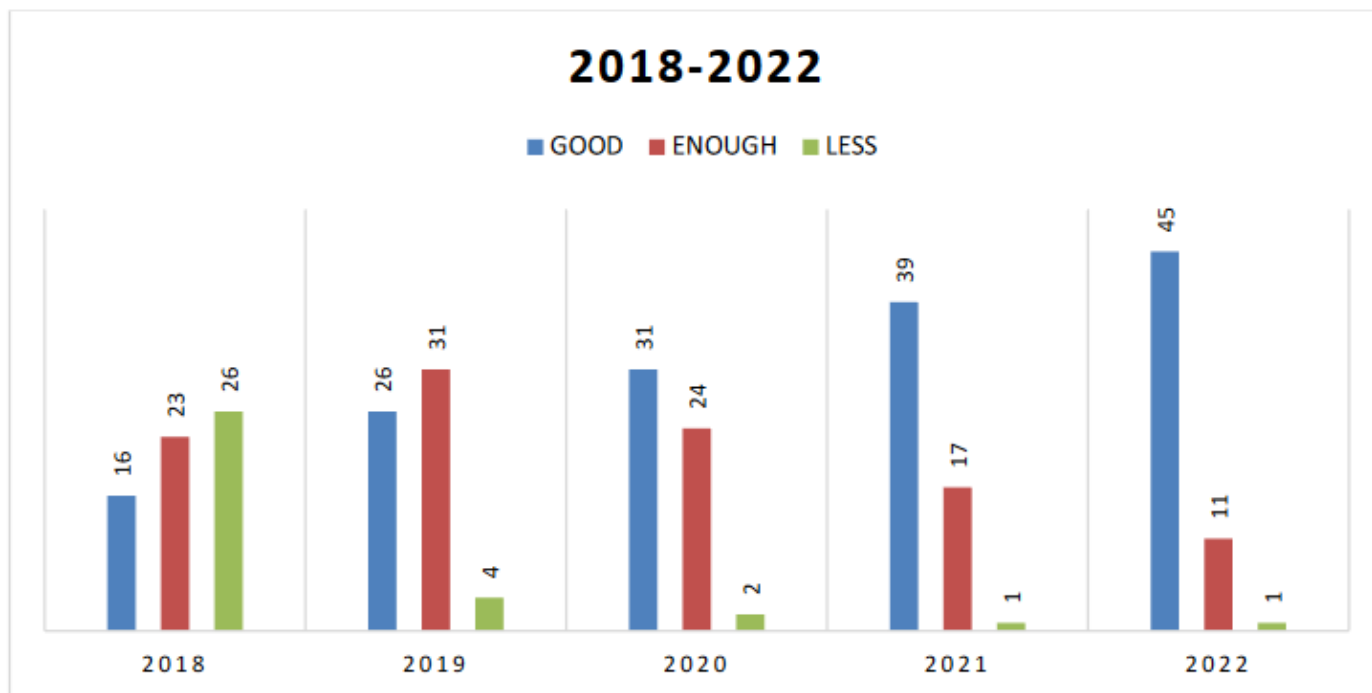
In 2021 the level of children's self-confidence is very good as seen from the number of children who are less confident as much as 2% and quite confident as much as 30% and 68% confident.

### E. Self-Confidence Data 2022



In 2022 the level of children's self-confidence is very good as seen from the number of children who are less confident as much as 2% and quite confident as much as 18% and 80% confident.

F. Comparison of Number of Confident Children 2018-2022



From the table above, it can be concluded that every year the number of good category confidence levels increases from 2018 by 16 people and in 2019 it increased to 26 people even though the number of students decreased by 4 people, in 2020 it increased by 5 people so that it became 31 people and in 2021 it increased to 39 people and in 2022 it increased to 45 people.

**CONCLUSIONS**

Based on the results of the research conducted, the researcher can draw the conclusion that of the 57 students at the Makassar Confident Children's School. Most of them have a level of selfconfidence in the Good category, it can be seen from the results of research from 2018 - 2022, namely 45 with a good category, while in 2021 only 39 people, 2020 as many as 31 people, 2019 as many as 30 people, 2018 as many as 16 people. So it can be ascertained that every year the increase in selfconfidence of children who are self-participants has increased significantly.

**ADVICE**

The suggestions put forward in this study are that students are advised to increase self-confidence by studying harder so that they are motivated to continue to obtain optimal learning outcomes.

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## Development and Validation of Self-Learning Packets in Linear Equation and Inequalities in Mathematics 8



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**ABSTRACT:** The shift of modality brought on by the COVID-19 pandemic, the Department of Education in the Philippines implemented the Distance Learning Modality, which averted the New Normal. Self-Learning Packets (SLPs), satisfy the challenge of distance learning. This descriptive-developmental study aimed to develop and validate SLPs that is aligned with the Most Essential Learning Competency in Mathematics 8. This study underwent five phases guided by the ADDIE Model (Analysis, Design, Development, Implementation, and Evaluation). The developed SLPs was very acceptable as validated by five expert validators invited from Saint Columban College and the Division of Zamboanga Sibugay. Selected Grade 8 students were also asked to evaluate the pretest and posttest. Results shows that the developed SLPs in grade 8 Mathematics were generally valid and acceptable as validated by the experts. The SLPs obtained 96.92% compliance in Content and 95.93% in Layout and Design. Paired t-test was conducted to check if there were significant changes of the student's performance from pretest and posttest. Based on the results there was a significant difference in the scores in pretest and posttest. The mean of pretest and posttest of SLP 1 were 5.10 and 7.30 with mean difference of 2.2 and the mean of pretest and posttest of SLP 2 were 4.60 and 7.20 with mean difference of 2.6, and p-value is lower than 0.05 for both SLPs. The expert validators strongly agreed that the SLPs possesses adequacy, coherence, usefulness, and reliability in equipping and enhancing student skills in linear Equations and Linear Inequalities.

**KEYWORDS:** development, validation, self-learning packet, linear equation, linear inequalities

### 1. INTRODUCTION

#### 1.1 Background of the Study

Learning is a continuous process and essential to our existence. Thus, constant learning is necessary for acquiring critical thinking skills and discovering new ways of learning (Tracy, 2010); as we face the post-pandemic and battle with learning losses, we must face and adapt to the change of learning styles of the learners brought by the pandemic. Teachers adopted different strategies to address the student's difficulties and gaps in their learning process. One of these techniques and aids teachers had utilized the Modules in mathematics. Modules are conceptualized and designed to aid the teacher in providing the students with the needed support to progress in their studies. These will increase and deepen the child's skills, knowledge, and understanding in various subject areas in math and include various learning areas in the curriculum. Modules can explore various ideas and concepts that would enrich their understanding of varied subject matters that sharpen their competencies. Furthermore, the Modules tend to reteach the lessons that could be clearer to the learners and help them gain mastery of the skills. Moreover, the Modules guarantee alignment of activities with the tasks/objectives and provide activities where students can have enough practice to enhance and develop their skills and focus on the least mastered skills (Cubillas, 2018).

As many know, Mathematics is a complex subject that needs analysis and critical thinking. To fully understand the subject, conceptualized education is required. Acelajado (2006), Mathematics instruction underscores sense. It establishes the connection between the learners' understanding and perception of mathematics theoretical and concrete structures. Most young learners who are not good at math view mathematics as a subject to be tolerated rather than appreciated because of its complex nature. Thus, a learning module is a good material that provides many drills and exercises parallel to a particular topic or competency that is helpful to students in understanding the lesson well. Furthermore, (Prastowo, 2012) describes and explains the different functions of the module. The first is self-contained educational material. Using modules in the learning process enables students to develop their ability to learn independently of educators. The second function is to take the place of educators. Modules as teaching materials must clearly explain learning information in a way that students of varying knowledge and age may comprehend. Simultaneously, the educator is associated with the explanatory function of anything. Consequently, the utilization

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of modules is capable of performing the duties of educational substitutes. Finally, the module can be used as an assessment instrument.

By using the modules as a reference for other students, students must be able to assess and measure their understanding of the subject matter they have learned. Students must read the numerous materials in each module.

Nepomuceno (2015) described modules as having the following characteristics: they focus on distinct, identifiable abilities or sets of skills or outputs other than skills. It is relatively brief in ensuring that students use their study time efficiently. Although it might promote group activities, it essentially involves self-teaching. It entails reading, reflecting, and applying theory to practice. A list of extra tasks or resources related to the improved skill is provided. It offers advice to students on how to create their own assignments, activities, and evaluation standards. It is reality-based in that it immerses students in authentic settings and uses simulation methods where that is not possible. It offers suggestions for enhancement and redesign. He provided the following justifications for the importance of modules in education using these features. The first is to help students learn on their own, to make specific minimum standards are met, to offer remedial units, to provide primary education, to update Content, to improve teacher skills, to combine theory and practice, to take into account differences in how people learn, to accommodate different groups in a single course, to review essential points in a class, to help people get certified in their fields, to offer resources for distance education, and to encourage mastery.

Furthermore, he described a module as a tool that enables the organization of various experience sequences to represent the particular interests of the educator or the students. The instructor can concentrate on the student's inadequacies in the subject matter that need to be addressed thanks to self-instructional units, which minimize the need for the instructor to go over topics that the student is already familiar with. It enables the assessment of students' academic progress. It minimizes the repetitive nature of instruction learning. The teacher is allowed to communicate with the student on a personal level. Due to the self-contained structure of self-instructional units, it was possible to update study materials without considerable adjustments. It is a model for instructors who want to create their own materials and incorporate their personalities.

### *Development of Module*

Modules are the most widely accepted learning materials, so it is vital to prepare them intelligently. It impacts learning since using this material has already been spread globally, and many researchers have proved that it affects students' learning process worldwide, especially in the subject of Mathematics.

The K to 12 curricula shall be learner-centered, and the production and development of locally produced teaching materials shall be encouraged. Teachers must consider their ability to construct materials such as modules to facilitate students' learning.

Salandanan (2009) stated that self-instructional materials are described as self-contained. The manner of presentation is such that the learning activities can be undertaken individually or in small groups. These materials are most effectively used in individualized instruction programs. Various strategies have been developed to foster self-directed learning. For instance, Smedley (2007) offered a set of strategies that may assist self-directed learning readiness: creating a supportive learning environment; providing constructive feedback; encouraging self-assessment; using self-reflection; providing opportunities to engage in their learning processes; and developing goal orientation values. These strategies may be helpful for teacher educators considering taking a step towards fostering students' self-directed learning and helping students survive and thrive in this information age.

In addition to these strategies mentioned above, an approach to self-directed learning requires using instructional materials designed to help the students learn independently. These self-instructional materials, which could be in module form, consisted of a self-contained, independent unit of instruction prepared for attaining defined instructional objectives (Macarandang, 2009). Two distinctive features of self-instructional modules are that they promote self-paced learning and their availability at any time and place. As a self-paced learning material, it allows a learner to work at his/her own pace rather than the group's, which can be too fast or slow. The availability of self-instructional material likewise allows students to learn when they wish rather than according to an external timetable. The researcher looks for related studies that support his present investigation to enrich the analysis further. Gagarin (2003) discovered that her produced physics modules were a successful instrument for teaching physics to Samson College of Science and Technology students. The validity and acceptability of the modules were decided to have been established by the Science teachers and college sophomores who worked in her school. In addition, her research findings demonstrated that she created physics modules that improved the educational opportunities available to students. As a result, she suggests using her modules as a model for generating instructional resources in other areas of science across the various grade levels and advocating for their implementation in classroom education. So for this reason, the developed modules were accepted and proven to be effective.

In the Study of Alberto, which is cited by Hena (1997), developed self-instructional modules based on the needs and interests of fourth-year BSE/BSEEd students, the effectiveness of which she tested is experimental research. The excellent



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performance of the experimental group demonstrated that the modules were helpful aids for facilitating learning. The same result was found by Receno (2001); in his study, He created and tested teaching materials to help first-year students at St. Michael College of Laguna improve their listening abilities. One of the things she discovered is that for first-year students to pay attention and value listening, they need to be provided with instructional tools that help them identify and use their internal linguistic resources.

However, Aggabao (2002) conducted a study to produce personalized self-instructional modules on selected themes in basic mathematics for use in the Teachers' College at the University of Isabela. The experimental method found that the college's materials for teaching Basic Mathematics must be revised and made for self-teaching. It was also found that teaching with self-instructional materials is just as effective as the current way of teaching and that both students and teachers like the idea of using individualized, self-instructional materials to teach Basic Mathematics. Moreover, Torre Franca (2017) concluded in her study on developing Self-Instructional Modules that the constructed educational modules on Rational Expressions and Variations within the field of Algebra are acceptable based on separate examinations by expert jurors and student users. The training modules are also consistent between these two groups of evaluators when statistical comparisons of ratings are made, which her study was supported by Isola (2010) and Abdu-Raheem (2014).

Despite the results of the different studies and solutions to distance education, challenges and issues concerning the effectiveness and coherence of the appropriate development approach still need to be supported. There still needs to be solid evidence that those developed modules are relevant to the different kinds of learners (Pacheco, 2022).

The accelerating literature suggests the baseline of learning modules to address distant learning and measures its effectiveness in attaining desired learning outcomes. However, some literature gaps were noticed as to the limitations of each study. Most of the standard learning modules developed a focus on contextualizing the objectives, lesson content, and assessment forms and are proven effective in grasping the lesson. However, this study would like to achieve the validity and effectiveness of the self-learning module to address the least mastered skills in Math 8, specifically in linear equation and linear inequalities.

The researcher has pursued this study because he believes that students can learn meaningfully with less supervision from teachers. He also believes that this will be of great help in improving mathematics instruction. This study aims to develop a self-learning module and validate its effectiveness in assessing student learning, performance, and achievement during this new standard setup of education.

The topic chosen by the researcher is based on the Most Essential Learning Competency (MELC) in Grade 8 Mathematics. There will be two SLPs with different competencies. SLP1 will focus on Linear equations in two variables. SLP 2 will focus on Linear Inequalities in two variables. The researcher chose those topics because it would help the learners if modules were contextualized and easy to understand for this topic are always part of the list of least mastered skills in mathematics 8.

However, in the recent event, in the new typical Education amidst Covid-19 for Junior High School, there has yet to be an online study on creating and validating Self-learning modules for teaching mathematics. Therefore, it is compelling to develop and validate self-learning modules in teaching Mathematics 8 that would benefit the learner in Junior High School.

Although, as of this school year, All schools are implementing full in-person classes, there is still a need to use self-learning packets to recover those learning losses during the pandemic. Using those developed learning packets helps and teaches students to manage their time and maximize their learning in other skills which are essential in every aspect of life.

Hence, students need to learn and master the competencies in the early grade, particularly in Math, for one skill may be a prerequisite to another. Thus, Math teachers should be equipped with more than just teaching strategies and techniques. However, they should also be innovative and armed with appropriate instructional materials such as Contextualized Learning Materials based on the learners' needs, which was highlighted in this study.

### **1.2 Theoretical Conceptual Framework**

The researcher used the ADDIE (Analysis, Design, Development, Implement, and Evaluate) model to develop the Self-Learning Packets on Linear Equations and Linear Inequalities in Mathematics 8.

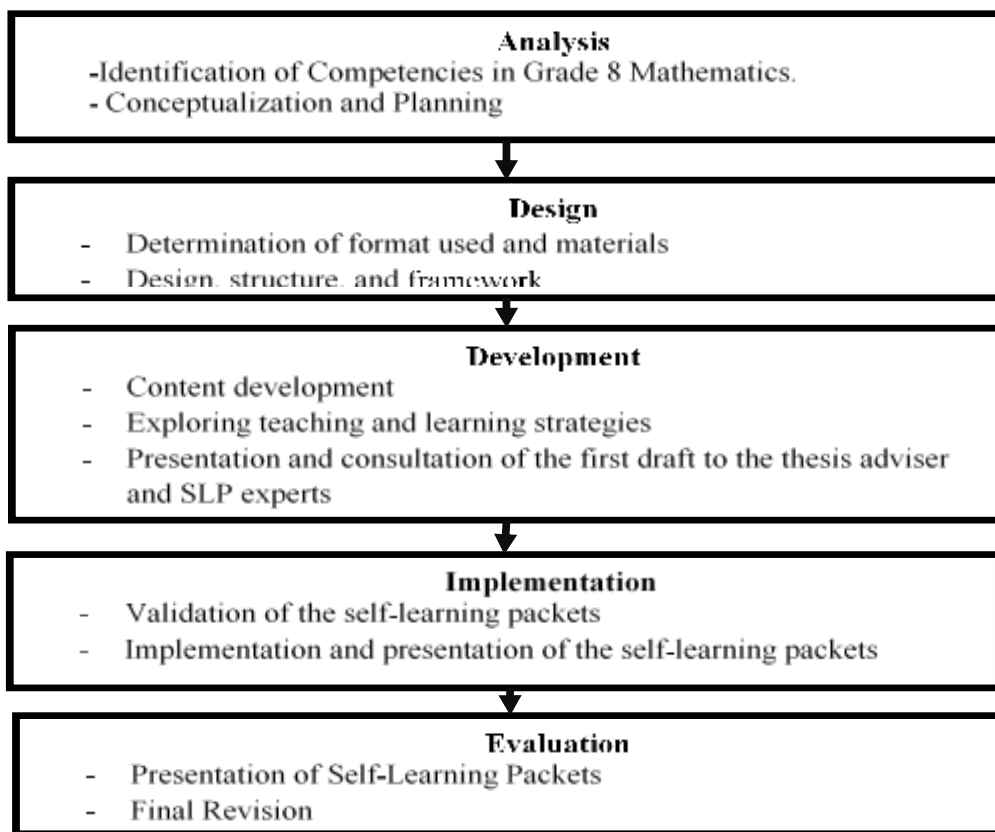


Figure 1. Conceptual Framework of the Study

As shown in Figure 1, the diagram illustrates the study's direction. Developing a learning packet in grade 8 Mathematics anchors the ADDIE (Analysis, Design, Development Implementation, and Evaluation) paradigm by Seels and Glasgow. Because it provides a dynamic and adaptable guideline for practically applicable training and performance support tools, the model is an excellent choice for this particular research project. It is supported by instructional theories such as behaviorism, constructivism, social learning, and cognitivism (Cullata, 2021), wherein the current education system adheres to.

The analysis phase includes the conceptualization, planning, and identifying topics and competencies in Grade 8 Mathematics for the two (2) self-learning packets. The Most Essential Learning Competencies (MELCs) from DepEd were used to select the competencies in the first quarter. The analysis result was self-evaluated and continued evaluation with experts for improvement.

The design phase focuses on the material's design, structure, and framework. It determines the format used in the self-learning packets, choosing relevant materials, learning strategy, assessment form, and evaluation.

The development phase includes the content development of the self-learning packets, enumerating the processes or set of procedures in the SLP development. Self-learning packets, presentation, consultation of the first draft to the thesis adviser and SLP experts, and initial validation of the SLP happened in this phase. This phase also covers the formative and summative evaluation that reflects students' academic achievement.

The implementation phase comprises the application of the development results in the learning process to know the effectiveness, attractiveness, and efficiency of the self-learning packets. The evaluation phase is the presentation and final revision of SLPs.

Branson (1975) stated that the ADDIE Instructional Design model was first created in the 1970s by the Center for Educational Technology at Florida State University and initially established by the United States armed forces as part of a military training initiative through the efforts of educational technology experts in scrutinizing practices and activities in the teaching-learning process in education and training programs. Instructional designers generally use this model for teaching (Morrison, 2010).

The development of this self-learning packet is aligned with the Theory of Constructivism advocated by Jean Piaget. According to this theory, learners construct knowledge out of their experiences. It further established that the learners' advancement in learning concepts progresses through three levels of knowledge expertise: pictorial and abstract. Constructivism is an approach to teaching and learning based on the premise that the learners' cognition results from "mental construction." In other words, the learners tend to gain more knowledge by grasping and applying new information and methods to what they already know (Bada, 2015). It focuses on learners reflecting on their experience doing something to gain conceptual insight and practical expertise.

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Students would perform or do a hands-on, minds-on experience with little or no help from the instructor as they are engaged in making products or models, role-playing, giving a presentation, problem-solving, and playing a game.

The Experiential Learning Theory supports this research. Experiential Learning Theory (ELT) by David Kolb states that learning necessitates polar opposite abilities; thus, conflict arises and forces learners to choose which skills to employ to overcome the dispute in a given learning situation. Although the ELT acknowledges that learners may have learning preferences, it emphasizes the importance of a well-rounded learning experience (Asip, 2019).

This self-learning packet (SLP) focused on the topics in Mathematics 8 found in Most Essential Learning Competencies. The SLP was validated using the two criteria: Content and Design and Layout.

### 1.3 Statement of the Problem

This study determines the extent of development and validation of the Self-Learning Packets in Mathematics 8 in one of the schools in Payao, Zamboanga Sibugay this school year 2022-2023.

Specifically, it aims to answer the following questions:

1. To what extent is the validity of the Self-Learning Packet in terms of its Content based on the following compliance factors:
  - 1.1. Intellectual Property Rights;
  - 1.2. Learning Competencies;
  - 1.3. Instructional Design and Organization;
  - 1.4. Instructional Quality;
  - 1.5. Assessment; and
  - 1.6. Readability?
2. To what extent is the validity of the Self-Learning Packet in terms of its layout and design based on the following compliance factors:
  - 2.1. Physical Attributes;
  - 2.2. Design Layout;
  - 2.3. Typographical Organization; and
  - 2.4. Visuals?
3. What changes or improvements can be made to make the Self-Learning Packets more helpful to learners based on the following parts/phases:
  - 3.1. Cover Page;
  - 3.2. Pretest;
  - 3.3. Mini-Lesson;
  - 3.4. Exercise;
  - 3.5. Posttest;
  - 3.6. Add-on; and
  - 3.6. Answer key?
4. What are the general comments, suggestions, and recommendations made by the content experts on the developed Self-Learning Packets?
5. What is the level of students' achievement using the SLP as revealed in the pretest and posttest?
6. Do students' mathematics achievement improve from pretest to posttest?

### 1.4 Significance of the Study

This study is designed to develop and validate Self-Learning Packets in Mathematics, specifically linear equations, and inequalities. The result of this study will significantly contribute to the following:

**Learners.** The learners serve as the ultimate beneficiaries of the results and findings of this study, for the self-learning packets will serve as a supplementary intervention to them.

**Teachers.** This study shall provide the teachers teaching Mathematics subjects with the importance and status of the development and validation of learning packets in mathematics to address the learning and performance of students in mathematics subjects. Thus, teachers will be motivated and interested in developing and creating more contextualized Learning packets for their Learners.

**Parents.** Parents' involvement in learners' education plays a significant role. This Self-learning packets will help family bonding and boost the learners' interest.

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School Administrator. The results of this study shall provide information on the extent of the development of Self-Learning Packets in Mathematics. Having the data on this matter will guide the school administrator in determining the areas that need to be enhanced and maintained progressively in addressing students' learning status in mathematics.

Other Researchers. This study shall serve as a reference for future research relevant to the topic.

### 1.5 Operational Definition of Terms

The following terms are used extensively in this study and shall be taken according to the definition given hereunder:

Self-Learning Packets. It refers to the learning materials developed and constructed by teachers in mathematics to be utilized by students.

Development. In this study, this refers to the level of how teachers in Mathematics develop the Self-Learning Packets in Mathematics 8.

Validation. It refers to evaluating the created self-learning module within the specific criteria.

ADDIE Model. It is an instructional system design framework that many instructional designers and training developers use to develop courses. The name is an acronym for the five phases it defines for building training and performance support tools: Analysis, Design Development Implementation Evaluation Most current ISD models are variations of the ADDIE process.

Content Expert. A content expert is someone who is an expert in a particular topic. They are mathematics teachers and instructional design experts who also serve as validators of SLPs.

## 2. RESEARCH METHOD

This chapter presented the research methodology of the study. It includes a discussion on the research design, research methods, sampling techniques, instrumentation, data gathering techniques, and statistical treatment used to analyze the data of the study on the development and validation of Self-Learning Packets in mathematics.

### 2.1 Research Design

This study employed a quantitative research design to develop Self-Learning Packets in Math 8. It used the ADDIE (Analysis, Design, Development, Evaluation, and Implementation) model -a quantitative research design. It served as a solid basis for creating a practical course or program.

ADDIE model was designed for educational research. It is used in the development and validation of educational products. It is also concerned with advancing product-oriented research and enhancing academic quality, as it is linked to the education evaluation program. Furthermore, it is not simply to evaluate educational theories but to create effective products for special school programs, such as teaching and learning materials and media (Gustiani, 2019).

### 2.2 Research Environment

The study was carried out in one of the schools in Payao District, Zamboanga Sibugay. It currently employs twenty-seven (27) personnel with twenty-one (21) teachers, Three (3) para-teachers, and three (3) non-teaching personnel, including the school head. Now, the school accommodates 563 learners for 2022-2023.

Despite the different interventions provided, the school faces a significant challenge of learners' low academic performance, particularly in Mathematics. Some of the learners are cutting classes, increasing the number of absentees, and many factors affect the learners' performance, especially in mathematics. thus, developing Self-learning packets would be a great help for it will serve as a supplementary materials to the learner to help address the issue.

### 2.3 Research Participants

The participants of this study are the five (5) content experts who validated the Content and the Layout Design of the Self Learning packet. They are purposively selected and are composed of public and private teachers or instructors and ten (10) Grade 8 learners to evaluate the pretest and posttest.

### 2.4 Sampling Technique

The researcher used the purposive sampling technique to select the five (5) expert validators involved in the validation of the Content of the SLPs and the ten (10) learner enrolled in one of the schools of Payao District Division of Zamboanga Sibugay for School Year 2022-2023.

### 2.5 Research Instrument

The instruments used to validate the developed self-learning packets (SLPs) were evaluation tools developed by DepEd Developed Learning Resources (DDLRL) prescribed by the Bureau of Learning Resources (BLR). The SLPs were validated by five (5) expert validators using tools to measure the quality of the Content and the Design and Layout.

## Development and Validation of Self-Learning Packets in Linear Equation and Inequalities in Mathematics 8

The expert validators used the evaluation tool for Design and Layout. The tool checks the compliance factor of the following factors: (1) Physical Attributes, (2) Design and Layout, (3) Typographical Organization, and (4) Visuals. For the factor to be considered as being met, at least 75% of the criteria must be checked off, they will be the ones to validate the Content of the SLP using the evaluation tool for Content. The tool (Content) checks the compliance factor of the following factors: (1) Intellectual Property Rights Compliance, (2) Learning Competencies, (3) Instructional Design and Organization, (4) Instructional Quality, (5) Assessment, and (6) Readability. At least 75% of criterion items must be marked YES to indicate compliance with the factor.

To determine the level of students' mathematics achievement as revealed in the pretest and posttest results, the Mean Percentage Scores (MPS) and its descriptive equivalent was used. The scoring system was adapted from DepEd Memo No. 160, s. 2012.

### 2.6 Data Gathering Procedure

The data gathering procedures of the study involved the following activities, which were appropriately done to generate the necessary data; sending a letter to the Schools Division Superintendent to ask permission to conduct the study in its jurisdiction; securing approval from the school head of Balungisan National High School and asked for official permission to look for students purposively to validate the SLP.

The expert validators were informed on the concept of the SLP, as attached to the validation sheet. Aside from that, it is attached to the validation sheet for them to have a basis for rating and validating the Self Learning Packets (SLPs).

The study used the ADDIE (Analyze, Design, Develop, Implement, Evaluate) approach to develop the self-learning module. The ADDIE method applies a product development concept to the development of performance-based learning (Branch, 2009). The following discusses the details of each stage:

#### Self-Learning Packet Development Procedures

The development and validation of the Self-Learning Packets followed the Instructional paradigm known as ADDIE (which stands for Analysis, Design, Development, Implementation, and Evaluation). There are five phases to this model.

##### Phase 1. Analysis

This stage consists of analyzing, planning, and conceptualization of the Self Learning Packet (SLP) developed. Based on the ADDIE model development procedure, a needs analysis relative to the corresponding learners must be conducted. It also includes assessing the learners' knowledge, what they want to learn, and why they need to understand them. The researcher purposively chose Linear Equations and Linear Inequalities, for these are one of the least mastered skills topics in mathematics 8. Considering all the factors in developing the learning packet were established in this stage.

##### Phase 2. Design

The design and development of this learning packet are based on the Department of Education Alternative Delivery Mode (ADM), which refers to alternative modalities of education, including the formal educational system that allows schools to deliver quality education to varied learners and those at risk of dropping out to help them overcome personal, social, and economic constraints in their schooling (DEPED, Alternative Delivery Mode Learning Resource Standards, 2020). This also includes learners affected by class suspensions due to natural hazards that the Philippines are experiencing. In this phase, the researcher purposively conceptualized the design coming from the concept of Guided Integrated Yearning Activities (GIYA) of the Division of Zamboanga Sibugay. These involve different parts of the Learning packets: the Cover page, Pretest, Mini Lesson, Exercises, Posttest, Add-on, and answers key used in developing the SLP.

##### Phase 3. Development

The researcher started writing and crafting the self-learning packet. Based on ADM learning resources, the management and development process are (1) needs assessment; (2) design and development; (3) quality assurance; and (5) production and delivery. The steps are as follows:

(1) Needs assessment. A need to equip and enhance learners' skills in "illustrating and Graphing Equations" is the main reason these learning packets were developed. Purposively, the researcher sought to equip learners with the steps in illustrating and Graphing Linear equations and Inequalities in two variables since these two topics are one of the least mastered topics in mathematics 8.

Linear Equations and Linear Inequalities in two variables are one of the most essential competencies in mathematics 8. Studying this subject is important not only because it allows learners to be promoted to another higher grade level, but it also lets the students see the topic from a different perspective: as an essential part of society, or mainly to equip themselves with the proper knowledge to face real-life problems involving Linear Equation and Linear Inequalities in two variables. Engagement and interest in a shared learning aspect make a student's task less difficult (Al-Haddad, 2010). Thus, making the SLP exciting and engaging, and numerous activities are provided for learners learning development.

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(2) Design and development. The processes involved in the development are defining standards, guidelines, and conventions in creating learning resources. Objectives and competencies were based on Junior High School Most Essential Learning Competencies (MELCs). The design and the developmental process were based on the need to equip and enhance learners' skills in Linear Equations and Linear Inequalities in two variables.

The self-learning packet is designed to get the learner's interest and engage in the packet and provide them with the right learning outcome even when the teacher is not around to teach them physically.

The researcher purposively selected the Content of the learning packet (The backbone of the Self-Learning Packets (SLPs)

Quarter	Competencies	Code	SLP No.
1	Illustrates a system of linear equations in two variables	M8AL-IE-3	1
2	Illustrates and graph linear inequalities in two variables	No Code	2

One of the most important factors for students' learning is appropriately crafted objectives and learning outcomes. These objectives and learning outcomes are indicators of the success of an academic program. The objectives and learning outcomes should be identified and presented to the students so that they have a clear vision of what they will be able to learn (Singh, 2017).

Having these considerations on maintaining students' interest and engagement, the researcher kept printing colorful pictures, icons, and cover pages to catch learners' interest. For students to have a conducive learning experience, learning packets were divided into two (2): SLP No.1: Illustrates system of linear equation in two variables, and SLP No.2: Illustrates and graphs linear inequalities in two variables.

The learning packet has the following parts:

1. Cover page displays the title of the material, the grade level, learning competency, and cover art.
2. About the learning Packet contains a little explanation of what this self-learning packet is all about and defines the purpose of creating this packet.
3. Pretest is to determine the prior knowledge that the learners have before the lesson.
4. Mini Lesson walks learners through discussion and sample illustrations that they need to hit the objectives.
5. Exercises guide learners in practicing what they have learned and allow them to practice and apply what they learn.
6. Posttests evaluate the learner's level of mastery in achieving the goals.
7. Add-on engages learners in more activities for additional understanding.
8. Answer Key contains all the answers to the different activities of the self-learning packet.
9. The references list all sources used in developing this self-learning packet.

(3) Quality assurance. It is a sub-process where the learning packets are evaluated by selected content validators or student validators outside the development team to ensure compliance with the standards and requirements. For quality assurance, the researcher followed the guidelines in evaluating DepEd Learning Resources (DDLRL) as prescribed by the Bureau of Learning Resources (BLR). It focuses on the following criteria.

1. Content
  - a) Intellectual Property Rights Compliance
  - b) Learning Competencies
  - c) Instructional Design and Organization
  - d) Instructional Quality
  - e) Assessment
  - f) Readability
2. Design and Layout
  - a) Physical Attributes
  - b) Design and Layout
  - c) Typographical Organization
  - d) Visuals

Phase 4. Implementation

This phase emphasizes the implementation phase of the ADDIE model. However, in this study, the implementation phase focused on the presentation and consultation of the SLP with the thesis adviser, some colleagues, and SLP Validators. At first, the SLP

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underwent informal validation by colleagues to conduct pre-validation. Afterward, it was presented to the thesis adviser for some corrections. Then, it was subjected to the expert and student validators to determine the strengths and weaknesses of the developed SLP. Comments and suggestions were considered for improvements and the development of the final SLP.

Phase 5. Evaluation. This is the stage where the learning packet is validated. The developed self-learning packets were sent to the validators, accompanied by a letter of invitation for his time and expertise. The validation of the SLP is divided into two criteria, Content and design, and layout. Two (2) tools were used. Five (5) experts validated the study, and ten (10) students were randomly selected to be part of the evaluation process. The content was validated with the following factors (a) Intellectual Property Rights Compliance, (b) Learning Competencies, (c) Instructional Design and Organization, (d) Instructional Quality, (e) Assessment, and (f) Readability. For Design and Layout, the factors were (a) Physical Attributes; (b) Design and Layout; (c) Typographical Organization; and (d) Visuals. Students and expert validators' verbal suggestions and comments were taken into consideration for the revision of the learning packet. Then all of these suggestions will be incorporated into the newly developed SLP.

Part of the validation was the comments and suggestions as qualitative findings on the different parts of the SLP. With regard to the validation, participants were fully informed of the nature of this developmental research (Richey & Klein, 2005).

The researcher interpreted the expert's responses based on the mean percentage score of each present indicator on each factor and whether or not the developed learning materials complied with it. Individual tables were used to present the responses for each Self-Learning Packet.

### 2.7 Data Analysis

The data obtained from the validation and evaluation of the self-learning packet from the teacher experts and student-users were treated statistically using numerical and descriptive statistics like frequency count and weighted mean to measure central tendencies using MS Excel and SPSS (Creswell, 2012, p. 183). The Mean Percentage Score (MPS) and the percentage increase based on DepEd Memo No. 160, s. 2012 is used to determine the student's level of achievement. Textual interpretation was also used to report the supporting qualitative data.

### 2.8 Ethical Consideration

The researcher must ensure that the conduct of this study must not cause any mischief or disruption to the research participants upon participating. The researcher will observe the ethical management practices below and conduct research that attains the scientific standards in education to ensure that the study will be carried out as thoroughly and ethically as possible.

The following considerations are given importance before the conduct of the study:

**Consent/Permission.** The approval of the principal or teacher-in-charge and parent or guardian. The researchers will ask permission from the principal or TIC and PSDS to conduct the study.

**Informed consent.** It provides research participants with sufficient information about the study. The researchers handed personally to the research participants to read and sign informed consent.

**Voluntary participation.** The voluntary participation of the research participants is highly appreciated. Participants can continue or withdraw from the study, and those who choose to cancel will not be subjected to any pressure.

**Confidentiality.** It is keeping the information about the research participants for safety purposes. The researchers will assure the participants that their identity and personal data will be kept confidential outside the researcher.

**Do no harm.** It is an obligation not to inflict any damage on the research participants. The researchers will interact face-to-face with the research participant provided that COVID-19 safety protocols are followed.

## 3. RESULTS AND DISCUSSION

This chapter contains the findings and discussion, which include the presentation, analysis, and interpretation of the validation, evaluation ratings, and feedback of the developed learning packets.

### 3.1 Content Validation of the SLP by the Experts

The findings of the expert validators' assessment of the Self-Learning Packets' Content are shown in Table 1. As demonstrated in Table 1, it is evident that both SLPs received a very satisfactory factor compliance to all factors, Factors I: Intellectual property rights compliance, II: Learning Competencies, III: Instructional Design and Organization, IV: Instructional Quality, V: Assessment, and VI: Readability. Both SLPs are descriptively remarked compliant to all factors under Content as validated by the experts.

Table 1. Expert Validators' Evaluation of the SLPs in Terms of Content.

FACTORS	SLP No. 1		SLP No. 2	
	Factor Compliance %	RMK	Factor Compliance %	RMK
<b>Factor I: Intellectual property rights compliance</b>	95.00%	C	95.00%	C
<b>Factor II: Learning Competencies</b>	100.00%	C	100.00%	C
<b>Factor III: Instructional Design and Organization</b>	98.18.00%	C	100.00%	C
<b>Factor IV: Instructional Quality</b>	93.33%	C	98.18%	C
<b>Factor V: Assessment</b>	90.00%	C	93.33%	C
<b>Factor VI: Readability</b>	100.00%	C	100.00%	C
<b>Overall</b>	<b>96.09%</b>	<b>C</b>	<b>97.75%</b>	<b>C</b>

*Note: At least 75% of criterion items must be marked YES to indicate compliance with the factor.*

According to Roman (2016), some of the characteristics of the Content of instructional material are that it should be aligned with the curriculum, it should have an adequate discussion of the lesson, and the ideas and concepts must be thoroughly discussed and well-expressed.

The remarkable factor compliance performance of the SLPs of all factors means as follows: In Factor I: Intellectual Property Rights Compliance, the SLPs have no copyright violations, and references, materials, texts, and visuals are correctly and accurately cited. In Factor II: Learning Competencies, the Content of the SLPs is consistent with the targeted DepEd learning competencies intended for the learning area and grade level. In Factor III: Instructional Design and Organization, the Content of the SLPs contributes to achieving the learning objectives, is suitable to the targeted learners, is organized and motivational with the use of guided activities, and develops higher-order thinking skills. In Factor IV: Instructional Quality, the SLPs have no factual and computational errors or social content violations, and the Content and information are up-to-date and accurate. Moreover, in Factor V: Assessment, the SLPs' assessments are varied and aligned with the objectives, and using the SLPs, teachers can evaluate learners' progress in mastering the competencies. However, it was found that there were some typographical and grammatical errors found in the SLPs. Some of the pictures needed to be correctly cited at the bottom part of it; even though it is included in the reference part, there is still a need to put the source of the picture. In Factor VI: Readability, the SLPs' vocabulary, and sentences are based on the learners' experience and understanding and are clear to the targeted learners.

Table 2. Summary of Expert Validators Validation of SLPs in Terms of Content.

SLP No.	Competencies	Content Validators	Remarks
1	Illustrates Linear Equation in two variables	96.09%	Complied
2	Illustrates and Graphs Linear inequalities in two variables	97.75%	Complied
<b>Overall Compliance Performance</b>		<b>96.92%</b>	<b>Complied</b>

In addition, experts suggested checking some minor grammatical errors and reducing the sizes of the graphs in some parts of the SLP. They were also reported to revise some of the questions in the pretest and posttest that did not fall under higher order thinking skills (HOTS) and confusing questions. It was also said always to observe the margin and the proper way to encode equations. They also reported that the SLPs must include a table of contents so the learner can quickly locate the undone activities. Also, they emphasize that the graph should be presented clearly to identify if it is a broken or solid line quickly. All of these comments and suggestions were adequately noted and will be incorporated into the development of the final learning packet. SLPs performed a commendable 96.72% factor compliance, which means that the learning packet complies with the requirements of all six factors based on DepEd ADM standards.

*Table 3 presents the expert validators' evaluation of the layout and design of the Self-Learning Packets.*



Table 3. Expert Validators' Evaluation of the SLPs in terms of Layout and Design

FACTORS	SLP No. 1		SLP No. 2	
	Factor Compliance %	RMK	Factor Compliance %	RMK
<b>Factor I: Physical Attributes</b>	90.90%	C	90.90%	C
<b>Factor II: Design and Layout</b>	96.66%	C	96.66%	C
<b>Factor III: Typographical Organization</b>	100.00%	C	100.00%	C
<b>Factor IV: Visuals</b>	95.38%	C	96.92%	C
<b>Overall</b>	<b>95.76%</b>	<b>C</b>	<b>96.12.00%</b>	<b>C</b>

*Note: At least 75% of criterion items must be marked YES to indicate compliance with the factor.*

As presented in Table 3, Factor III: Typographical Organization was completely compliant, surpassing other factors. Factor II: Design and Layout, Factor I: Physical Attributes, and IV: Visuals. Both SLPs are descriptively remarked compliant to all factors under Layout and Design as validated by the experts. Overall factor compliance of the SLPs is commendable.

The expert validators were impressed by the research packet's presentation and arrangement and praised the researcher's initiative in developing the SLPs. The design and layout stimulate the reader's interest and engagement in SLP as supplemented learning.

According to Sauer (2012), students' interest has a positive effect when they do performance tasks. Not only are their scores high, but their behaviors reflect engagement. When they are interested, they comprehend more, write better, demonstrate, and show a more focused work ethic

Table 4. Summary of Expert Validators Validation of SLPs in Terms of Design and Layout.

SLP No.	Competencies	Layout and Design Validators	Remarks
1	Illustrates linear equation in two variables	95.76%	Complied
2	Illustrates and graphs linear inequalities in two variables	96.12%	Complied
<b>Overall Compliance Performance</b>		<b>95.93%</b>	<b>Complied</b>

The performance of the evaluated SLP's overall design and layout was commendable to the expert validators. According to the table, factor compliance for both SLP scores is almost the same. They also like the use of attractive colors and creativity in graphics. Overall, table 4 shows that SLPs performed a commendable 95.93% factor compliance, which means that the learning packet complies with all four factors based on DepEd ADM standards.

Moreover, experts considered the self-learning packet to meet the minimum requirements in all four design and layout criteria factors. The researcher must implement the experts' validators' revisions, suggestions, and recommendations to improve the developed SLPs.

For the revisions and enhancements that can be made to make the self-learning packets more helpful to learners based on the following parts/phases are represented in Table 5.

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**Table 5. Revisions and Enhancements to Make the Self-Learning Packets More Helpful to Learners Based on the Following Parts.**

	Comments/Suggestions/Recommendations	Action taken
Cover Page	1. Make a little revision of the cover page of SLP 1 or use an appealing image instead of a graph topic.	Edited the cover page and follow the suggestion of the evaluator.
	2. Indicate quarter no. and week	They were checked and edited.
	3. Check the typographical errors.	
Introduction	4. Check the minor grammatical errors.	Grammar and wording had been edited as per the evaluator's correction.
Pretest	5. Apply Bloom's Taxonomy in constructing test Questions.	It was checked and revised and edited the applicable item numbers.
	6. Consistency in the arrangement of options	Edited the applicable numbers
	7. Observe Margin	Adjusted the margin from .5 to 1 inch
Mini Lesson	8. Reduce the size of the graph and not proportionally drawn	Adjusted the size of the graphs
	9. Check the typographical errors.	They were checked and edited.
	10. Check for grammatical errors.	Checked the Content of the SLP.
Posttest	11. Apply Bloom's Taxonomy in constructing test Questions.	It was checked and revised and edited the applicable item numbers.
	12. Consistency in the arrangement of options	Edited the applicable numbers
	13. Check for grammatical errors.	Checked the Content of the SLP.
Answer Key	14. Put it on a separate page	Transferred to a separate page
	15. It should be in reverse order.	Edited and in reverse order
Add-on	16. Cite the source	Cited the source in the reference

In the general comments, suggestions, and recommendations on the developed self-learning packets, the content experts' validators recommend changing the cover page of SLP 1; They also suggest being mindful of grammatical and typographical errors. They also suggested that the learning packet must separate the development team and references on another page. There should be a table of contents so that the learners are aware of the Content. Rest assured that the researcher considered and implemented all these comments, suggestions, and recommendations in the SLPs. Overall, they appreciated the developed self-learning packet for the informative lesson presented and the lesson's chronological order.

The results of the students' SLP achievement, as shown by the pretest and posttest, were presented in Table 6.

**Table 6. Pretest and Posttest of the Students after the Validation of the Experts**

SLP No.	Competencies	Test Conducted	Mean Score	MPS	Descriptive Equivalent
1	Illustrates linear equation of two variables	Pretest	<b>5.10</b>	<b>51.00%</b>	<b>Average Moving Towards Mastery</b>
		Posttest	<b>7.30</b>	<b>73.00%</b>	
2	Illustrates and graphs linear inequalities in two variables	Pretest	<b>4.60</b>	<b>46.00%</b>	<b>Average Moving Towards Masters</b>
		Posttest	<b>7.20</b>	<b>72.00%</b>	

After the experts validated the developed self-learning packets, the student's achievement level moved toward Mastery in SLP 1 (Linear Equation) and SLP 2 (Linear Inequalities), as shown in Table 6. The mean percentage scores of the pretest in both SLPs fall

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under the Average on the Descriptive Equivalence. On the other hand, the Mean Percentage Scores of the Posttest in both SLPs fall on Moving towards mastery based on its descriptive equivalence. Table 6 shows that validated SLPs are acceptable to the students based on the DepEd Memo No.160, s.2012.

According to Dahar (2012), instructional material is a learning tool that allows students to learn faster and better. He described that using appropriate instructional materials significantly affects secondary students' academic performance. He also stressed the importance of quality textbooks and other educational resources in fostering academic success for learners.

**Table 7. Paired-Sample T-Test to test the significant differences in student's Mathematics achievement from pretest to posttest.**

SLP No.	Test Conducted	Mean	N	SD	t-value	df	P-value	Remarks
1	Pretest	5.10	10	1.370	-5.659	9	.000	<b>With significant Difference</b>
	Posttest	7.30	10	1.059				
2	Pretest	4.60	10	1.776	-4.088			
	Posttest	7.20	10	1.135				

Paired t-test was conducted to check if there were significant changes of the student's mathematics achievement from pretest to posttest. As shown in the table 7, there were a significant difference in the scores in pretest and posttest. The mean of pretest and posttest of SLP 1 were 5.10 and 7.30 with mean difference of 2.2 and the mean of pretest and posttest of SLP 2 were 4.60 and 7.20 with mean difference of 2.6, and p-value is lower than 0.05 for both SLPs. This means that there was statistically significant rise in students' scores for both SLPs from Pretest to Posttest This result implies that the developed SLPs helps improved students' performance in mathematics. These results warrant the claim that the developed Self-learning Packets could improve the students' mathematics achievements.

### 4. SUMMARY OF FINDING, CONCLUSION, AND RECOMMENDATION

This chapter presents the summary of findings on the development and validation of the Self Learning Packet in Linear Equation and Linear Inequalities in Mathematics 8. The researcher created a conclusion based on the result findings and a recommendation based on the outcome of the research study.

#### 4.1 Summary of Findings

The results of data analysis and interpretation are summarized in the following findings:

1. To what extent do experts validate the Self-Learning Packet in terms of its Content based on the following compliance factors: Intellectual Property Rights; Compliance; Learning Competencies; Instructional Design and Organization; Instructional Quality; Assessment; and Readability?

The experts validated the Self Learning Packet contents using the evaluation tool adopted in ADM Standards by the Department of Education. There are six factors under Content, and under these factors are standards or criterion items that validators need to verify if the SLPs are found compliant with them. SLP 1 (Linear Equation) garnered 96.09% factor compliance, and SLP No. 2 (Linear Inequalities) garnered 97.75% factor compliance. It was evident in the results that the SLPs were found compliant based on the set criteria at 75% by ADM Standards. The overall compliance performance of the SLPs in terms of Content is 96.92%. It means that the Content of the SLPs developed is generally acceptable as perceived by the validators.

2. To what extent do teachers validate the Self-Learning Packet in terms of its layout and design based on the following compliance factors: Physical Attributes; Design and Layout; Typographical Organization; and Visuals?

The experts validated the Self Learning Packet's Layout and Design using the tool adopted in ADM Standards by the Department of Education. There are four factors under layout and design. Under these factors are standards or criterion items that validators must verify if the SLPs comply with. SLP 1 (Linear Equation) garnered a 95.74% complaint factor, and SLP 2 (Linear Inequalities) garnered a 96.12% factor compliance. Both SLPs are descriptively remarked compliant to all factors under Layout and Design as validated by the experts. Overall factor compliance of the SLPs is 95.93%. The result implies that all aspects of the Layout and Design of SLPs are highly valid, suitable, and acceptable as rated by the expert validators.

3. What revisions and enhancements can make the Self-learning Packets more helpful to learners based on the following parts/phases: Cover Page; Pretest; Mini Lesson; Exercise; Posttest, and Answers key?

In evaluating the Self-Learning Packets (SLPs), the expert validators were encouraged to give their comments, suggestions, and recommendations to improve the learning materials. The cover page differed from other learning materials and used attractive colors to attract users' interest. The quarter number and week number were included in the said SLPs. The overview had minor grammatical errors and was reviewed and edited by the researcher. Some questions in the pretest need to be revised, and applied Bloom's taxonomy in constructing the questions. In the Mini-Lesson part, some changes were made, especially in the first one,

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and the typographical, grammatical, and margins were edited. He also made some minor revisions, such as consistency in font style and correct usage of formulas. The answer key has been edited with signs, operations, and spacing and made in an upside-down format.

Overall, the researcher applied the necessary revisions. Removed and edited typographical and grammatical errors in the Content of the body of the SLPs and made the graphs larger. All of these changes made the SLPs more helpful to learners.

4. What are the content experts' validators' overall comments/ suggestions/ recommendations on the developed self-learning packets?

Expert validators suggested checking, removing, and editing typographical and grammatical errors on some parts of the SLPs. They commended the researcher's eagerness to develop the learning packet, which is self-learning. It was also commended for its simplicity and attractiveness. They also recommended that it be administered to the students after the validation process. It was also mentioned that this learning material would help students stay interested and engaged throughout the journey in answering the material. Those suggestions and recommendations were considered and applied to the learning packet.

5. What is the level of students' achievement of the SLP, as revealed in the pretest and posttest?

Based on the DepEd Memo No. 160, s. 2012, the student's achievement level is moving toward mastery in SLP 1 (Linear Equation) and SLP 2 (Linear Inequalities). The mean percentage score of the pretest in SLP 1 garnered 50.23%, and the (MPS) mean percentage score of the posttest was 72.16%, with a percentage increase of 21.93%. For the SLP2, the pretest obtained 45.38%, while the posttest gained 70.12%, with an increase of 24.74%.

Overall, the MPS results of both SLPs showed that the developed self-learning packet is quite effective for the students.

### 4.2 Conclusion

Based on the study's findings, the developed Self-Learning Packets (SLPs) in Linear Equations and Linear Inequalities in Mathematics 8 complied with the validation criteria based on the expert validators' evaluation. The expert validators agreed to all the factors pertaining to the aspects for validation and evaluation. This implies that the self-learning packet satisfies the pertaining aspects, essential parts, and features of supplementary learning material. For them, the SLP was deemed content-wise. Its structure and design encourage independent learning, promote interest and engagement, and align with the Most Essential Learning Competency (MELC) required in the Grade 8 Curriculum.

### 4.3 Recommendations

The following suggestions are made in light of the results and findings of the study:

1. A pretest-posttest quasi-experimental research with a larger population should be evaluated to determine the efficacy of the self-learning packet (SLP) in improving student conceptual understanding in Linear Equation and Inequalities.
2. Mathematics teachers in the Grade 8 curriculum may consider validating and using the developed learning packets with their students to assess further its validity and effectiveness in the present learning modality.
3. Development and validation of self-learning packets should be shared in School Learning Action Cell sessions by the school leaders and encouraged teachers to develop a Self-Learning Packet in other areas of Mathematics.
4. The mathematics teachers shall be provided with more professional training and workshops on the principles of learning material development.
5. School administrators should take steps to construct and validate learning packets in the education system, particularly in the different areas of mathematics.
6. The developed Self-Learning Packets should undergo Educational Soundness General Evaluation for the appropriateness of content and the quality of learning resources produced.

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## Empowering the Rural Community as Turtle Breeder: Case Study of Dunu Village, Gorontalo Utara Regency



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**ABSTRACT:** Turtles are marine reptiles that have existed on Earth for millions of years and have managed to survive until today. Turtles play a crucial role in the marine ecosystem, maintaining the balance of nature and contributing to marine biodiversity. The method used in this research is a qualitative approach, which includes conducting in-depth interviews, participatory observations, and analyzing relevant documents. The data obtained will be analyzed using descriptive and interpretative approaches to illustrate the process of empowering the rural community in Dunu Village.

This research aims to understand how the empowerment of the Dunu village community as turtle breeders takes place. The study was conducted for a duration of two weeks, starting from June 27, 2023, to July 11, 2023.

The research findings indicate that in Dunu village, Gorontalo Utara Regency, three types of turtles are being conserved. The turtle species involved are the green turtle (*Chelonia mydas*), hawksbill turtle (*Eretmochelys imbricata*), and olive ridley turtle (*Lepidochelys olivacea*). There are two individuals from Dunu village who are recognized as professional turtle breeders and actively participate in the protection of turtle eggs, caring for hatchlings, and conducting patrols along the beach where the turtles nest. These two breeders received training from the Balai Konservasi Sumber Daya Alam (BKSDA) Sulawesi Utara through the Seksi Konservasi Wilayah II Gorontalo.

**KEYWORDS:** empowering the rural community, turtle, conservation, pertamina, dunu village,

### INTRODUCTION

Empowering rural communities is an important concept in both sustainable development and conservation. Empowering rural communities means providing opportunities for them to actively participate in decision-making, program implementation, and the management of resources within their villages. One intriguing form of empowering rural communities worth studying is turtle breeding, an initiative that can bring environmental benefits and contribute to sustainable habitat conservation.

The case study discussed in this journal focuses on Dunu Village, located in Gorontalo Utara Regency. Dunu Village possesses abundant natural resources, including coastal areas on neighboring islands that serve as natural habitats for turtles. In the past, turtle breeding in this village was not well organized and was not optimally utilized. However, in recent years, the village has experienced significant development in empowering the local community as turtle breeders.

Turtles are marine reptiles that have existed on Earth for millions of years and have managed to survive until today. Turtles play a crucial role in the marine ecosystem, maintaining the balance of nature and contributing to marine biodiversity. However, various factors have led to a drastic decline in turtle populations. This is why the presence of turtles is protected, particularly in Indonesia. All species of sea turtles in Indonesia are protected by various regulations, including Government Regulation (PP) No. 7 of 1999 concerning the Conservation of Plant and Animal Species, and Law No. 5 of 1990 concerning the Conservation of Biological Natural Resources and Ecosystems. Additionally, international conservation organizations like the International Union for Conservation of Nature (IUCN) Red List of Threatened Species classify several turtle species found in Indonesia as critically endangered. One such species is the hawksbill turtle, while the green turtle, olive ridley turtle, and loggerhead turtle are listed as endangered species.

One of the greatest threats to turtles is habitat destruction. Mangrove deforestation, coastal development, and coral reef destruction diminish safe nesting grounds for turtles. Additionally, turtles fall victim to human activities that are irresponsible. Practices such as turtle hunting and the illegal trade of turtle meat, eggs, and shells have led to the uncontrolled hunting of turtles. On the other hand, plastic pollution in the oceans also poses a threat to turtles, as they often mistake plastic debris for food, putting their lives at risk.

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Turtles can spend their entire lives in the ocean, but adult females will return to land to find suitable nesting sites when it's time to lay their eggs (Mansula and Romadhon, 2020).

To preserve turtle populations, many countries and environmental organizations have been working diligently to protect them. Turtle conservation programs have been launched in various locations that serve as turtle habitats, including marine parks, nature reserves, and important nesting beaches. Conservation efforts include habitat protection, patrol monitoring, safeguarding turtle eggs, and educating communities about the importance of maintaining the sustainability of marine ecosystems.

In some cases, turtle conservation efforts also involve the participation of local communities. Through their involvement, communities can become agents of change and actively contribute to turtle conservation. This approach includes training and enhancing understanding of the importance of marine conservation and turtle habitats. By empowering local communities, they can play a vital role in safeguarding the oceans and protecting turtle populations.

The objective of this journal is to explore and analyze the efforts to empower the village community in Dunu Village as turtle breeders. In this context, it is important to investigate how the local community is involved in turtle breeding activities, their participation in decision-making regarding turtle breeding, and the social and environmental impacts of this empowerment initiative

### **SUBJECTS AND METHODS**

The research methodology used in this study is a qualitative approach, employing in-depth interviews, participatory observations, and the analysis of relevant documents. The data obtained will be analyzed using descriptive and interpretative approaches to illustrate the process of empowering the village community in Dunu Village. The research participants include members of the village community involved in turtle breeding activities as well as relevant stakeholders such as the village government and the Seksi Konservasi Wilayah II Gorontalo, BKSDA Sulawesi Utara. The aim of this research is to understand how the community in Dunu Village is empowered as turtle breeders through training provided by the Seksi Konservasi Wilayah II Gorontalo.

This research is expected to contribute to the understanding of empowering rural communities as turtle breeders, with a specific focus on the case study of Dunu Village, particularly in Molosipat hamlet, Gorontalo Utara Regency. The study was conducted for a duration of two weeks, from June 27, 2023, to July 11, 2023.

### **DISCUSSION**

#### **The Types of Turtles Conserved in Dunu Village**

The research findings indicate that in Dunu Village, North Gorontalo Regency, there are three types of turtles that are being conserved. The mentioned turtle species include the green turtle (*Chelonia mydas*), the hawksbill turtle (*Eretmochelys imbricata*), and the olive ridley turtle (*Lepidochelys olivacea*). These turtles receive special attention in efforts to protect and conserve them.

Every year, during the nesting season, the neighboring islands of Popaya, Mas, and Raja become home to the nesting activities of the three turtle species. These islands are chosen by the turtles due to their favorable vegetation and lighting conditions. Vegetation provides protection for the turtle nests from predators, making it an important factor for the successful hatching of turtle eggs into hatchlings (Turkozan et al., 2011). The eggs from these three neighboring islands of Dunu Village are then collected and brought to a conservation center located in Dunu Village. This is done to increase the hatching success rate of turtle eggs and ensure the successful return of the hatchlings to the sea.

The relocation of turtle eggs from their original nests is an important protective measure in conservation efforts to ensure the survival of turtle species. Green turtles (*Chelonia mydas*), hawksbill turtles (*Eretmochelys imbricata*), and olive ridley turtles (*Lepidochelys olivacea*) have complex life cycles and face threats from various predators when their eggs are buried on the beach. Turtle eggs serve as a food source for many animals, including coastal mammals and other reptiles.

#### **Community Participation in Turtle Breeding Activities**

The research findings indicate that the Balai Konservasi Sumber Daya Alam (BKSDA) Sulawesi Utara through the Seksi Konservasi Wilayah II Gorontalo has successfully engaged in empowering the village community in Dunu Village in turtle breeding activities. The local community actively participates in the protection of turtle eggs, caring for hatchlings, and conducting patrols along the beach where the turtles nest. Additionally, specific members of the village community are assigned to manage turtle breeding activities, including scheduling patrols, documenting eggs, and overseeing the breeding process. These efforts are tangible actions to optimize the conservation of turtle populations. According to Dermawan (2009), providing protection status alone is not sufficient to restore or at least maintain turtle populations in Indonesia. It requires a genuine attitude and concrete actions to implement comprehensive, systematic, and organized turtle conservation management.



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**Picture 1. One of the breeders conducts routine checks**

Initially, the community of Dunu Village faced significant challenges, such as a lack of knowledge on how to care for turtles, manage breeding, and locate nesting sites. However, with the support of the Seksi Konservasi Wilayah II Gorontalo and the village government, the community has experienced an increase in knowledge about turtles and the environment. This aligns with the statement made by Prihanta (2006) that one of the efforts to save sea turtles in Indonesia, specifically, is to raise awareness among the community about turtle conservation. In this context, the community has successfully combined traditional knowledge with new knowledge acquired through socialization and training. Currently, there are two individuals from Dunu Village recognized as professional turtle breeders who are involved in the protection of turtle eggs, caring for hatchlings, and conducting patrols along the beach where the turtles nest. These two breeders received training from the Balai Konservasi Sumber Daya Alam (BKSDA) Sulawesi Utara through the Seksi Konservasi Wilayah II Gorontalo. Other members of the village community have also gained knowledge about turtle conservation and the environment through socialization efforts conducted by the Conservation Section of Region II Gorontalo to change their attitudes toward turtles and the surrounding environment. Attitude represents a belief that drives action, so forming a caring attitude toward the environment is necessary for participation (Sugandi, 2013). This has led to a decrease in the number of illegal turtle egg hunting activities believed to have been carried out by the local community.

In general, the community of Dunu Village has been living alongside the turtle population for a long time. They are aware of the threats faced by turtles, as they observe a decrease in the number of nesting turtles and nests each year. However, many of them did not pay much attention to this issue and considered it normal.

Knowledge and concern about turtles have increased with the approach and socialization efforts conducted by the Balai Konservasi Sumber Daya Alam (BKSDA) through the Conservation Seksi Konserwasi Wilayah II Gorontalo.

In recent years, the breeders from Dunu Village have successfully hatched and released thousands of hatchlings into the sea, providing hope for the sustainability of the turtle population. This achievement is also attributed to the community's awareness of the importance of preserving the entire marine ecosystem. The residents of Dunu Village, especially the trained breeders by the Seksi Konservasi Wilayah II Gorontalo, actively engage in patrols to protect turtle nests and address threats such as illegal hunting and habitat destruction.



**Picture 2. The turtle conserved by the Dunu community**

The research findings also indicate that there are other efforts to optimize turtle conservation besides involving the local community as breeders. One of these efforts is to engage in collaboration with external parties. The mentioned external party is PT Pertamina Patra Niaga Fuel Terminal Gorontalo, which is a state-owned enterprise (BUMN).

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PT Pertamina Patra Niaga Fuel Terminal Gorontalo, as an energy company responsible for environmental conservation, recognizes the importance of biodiversity preservation and is committed to contributing to environmental protection. In commemoration of World Environment Day in 2023, PT Pertamina Patra Niaga Fuel Terminal Gorontalo collaborated with the Seksi Konservasi Wilayah II Gorontalo and the Dunu Village community to conduct a turtle release and coastal cleanup event on the village's beach. This initiative was undertaken as part of environmental and turtle conservation campaigns. Data regarding the number of released turtles, turtle species, and release locations were recorded for research purposes. This information will provide valuable insights into understanding turtle population dynamics and the success of conservation efforts.



Picture 3. The activities of coastal cleanup and turtle release in 2023

This activity not only serves as a celebration to commemorate World Environment Day but also as a concrete step in preserving turtles and coastal ecosystems. Collaborations like this serve as an inspiring example of how the industrial sector can play an active role in environmental conservation efforts and contribute to achieving global sustainability goals.

### CONCLUSIONS

Through the community empowerment program as turtle breeders, two villagers have been involved in every stage of turtle breeding, from monitoring nests and protecting eggs to releasing hatchlings into the sea. This has increased the overall awareness of the community about the importance of preserving turtle habitats and providing protection for endangered species.

In addition, training and education on turtle conservation and good breeding practices have been provided during the empowerment process. This has significantly enhanced their understanding and skills for effectively and sustainably carrying out tasks related to turtle breeding.

Certainly, the journey of empowerment has not been easy and will continue to face various challenges in the future. However, the success of Dunu Village in preserving turtles and promoting community empowerment has become an inspiration for other villages and a tangible example that active and sustainable community involvement is key to achieving environmental conservation.

### RESEARCH ADVICE

Human resource development can be further enhanced through benchmarking visits to other turtle conservation sites in different areas. Sharing experiences with other breeders can optimize conservation activities.

In future research, it is expected that studies will be conducted to explore the tourism and economic potential of Dunu Village related to the presence of turtle conservation in the village.

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## The Effect of the Cooperative Learning Model of the Two Stay Two Stray Technique on the Communication Skills of Students



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**ABSTRACT:** This study aims to determine the effect of the cooperative learning model of the two stay two strays (TSTS) technique on the communication skills of students. This research is quantitative research with quasi-experimental methods. The design used in this study is Nonequivalent Control Group Design. The subjects of this study were students of grades XI IPA\_3 and XI IPA\_4 Public High School 6 South Tangerang. The results showed that the communication skills of students with the cooperative learning model of the TSTS technique obtained a pretest score of 55.7 and a posttest of 84.97. The communication skills of students in the experimental class increased with an N-Gain of 0.65 in the medium category and the control class obtained an average pretest score of 51.5 and an average posttest score of 71.7 while the N-Gain gain of 0.38 in the medium category. Based on the results of the analysis obtained t count 3.11. It was concluded that the cooperative learning model of the TSTS technique affects the communication skills of students. The implementation of the learning process using the cooperative model of the TSTS technique went very well with an average percentage of teacher activity implementation of 96.5% and students of 89.5% very good criteria. The response of students to the learning process using the cooperative learning model has an average of 80.15% with strong criteria. So the cooperative learning model of the TSTS technique affects the communication skills of students.

**KEYWORDS:** Communication Skills, Cooperative Learning, Two Stay Two Stray

### I. INTRODUCTION

Education is a conscious and planned effort that is sought so that students are active in developing self-abilities, namely, developing the ability to think, emotional, social, spiritual, and moral values, and life skills. Students are expected to be able to run life by the expectations of themselves, family, community, nation, and state. The paradigm in education and learning demands the activeness of learners, but the facts in schools are different.

Based on the results of direct interviews with several biology teachers of Public High School 6 South Tangerang, some information was obtained. The first information, namely in biology learning, is still dominant in the application of conventional teacher-centered teaching even though sometimes it applies to innovative learning such as inquiry learning or problem-based learning (Yew & Goh, 2016).

Learning with the lecture method, teachers do not provide opportunities for students to be more active in building their affective structures, as well as the lack of opportunities provided by teachers in growing students' interests and communication skills. The second information is about students' low communication skills. This is obtained from the results of the evaluation carried out by the teacher at the end of the learning material using essay questions. From the average results, each class has an average below KKM. This shows that students have not been able to answer the description form questions correctly. Furthermore, material that often gets a low KKM value is dominant in even semester material, namely material about organ systems and one of them is respiratory system material.

The results of interviews with several class XII students obtained information about biology lessons. Some students still think that biology lessons are boring lessons. This is because biology lessons themselves have many scientific names that are difficult to understand. In addition, material that explains organ systems in humans such as circulatory system material, five

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sensory systems, and respiratory system. Because the material has a lot of reading that requires students to understand every process that occurs in the organ system. This tends to make students easily bored (Wolff et al., 2015).

Good communication skills are needed by students to support problem-solving skills. The teaching and learning process that takes place should activate students to construct knowledge. Students teach each other with other fellow students so that students will have a confident attitude and easily exchange ideas with their friends, even many studies suggest that teaching with peers is more effective than teaching by teachers so an education is needed that is in line with the 2013 Curriculum where learner-oriented learning is included in communicating (Retnawati et al., 2016).

One way to communicate in learning is through group learning, discussions, and presentations. This activity has often been carried out in learning, especially learning biology, but it is still lacking in its management. In the discussion activity, a group of students were asked to present certain material in front of the class, while the other students sat in their respective chairs. Some students are just spectators or do other activities. This is what makes some students passive in classroom learning activities.

When the question and answer session in the discussion opened, a small number of students asked or responded. This is because the usual discussion methods in learning are less interesting for students, so biology is considered a difficult, scary, and boring lesson. This can result in students becoming less interested in learning. This situation has implications for the low communication skills of students (Kyaw et al., 2019): Communication skills are very necessary, especially in classroom learning activities (Khan et al., 2017). With good communication skills, learning activities will be more fun. To improve the communication skills of students, active learning is needed (Quail et al., 2016). Active learning can be done with group discussions so that students will be trained in good communication.

The respiratory system is one of the concepts in Biology lessons in high school and is listed in class XI. The respiratory system is a very important material because it is related to the process of body activities at all times, namely, humans need healthy air that is useful for the respiratory system in the body. In addition, the respiratory system material has a wide and many material coverage to be understood by students such as the name of the organ, the respiratory process that takes place, to diseases that attack the respiratory organs. Therefore it requires an appropriate learning model. So that in the selection of the appropriate learning model, it is expected that the delivery session can provide various learning experiences, understand the concept of the material and have good communication skills (Siddiq et al., 2016).

In the process of teaching and learning activities in schools, some teachers use the lecture method in the respiratory system material. Some teachers assign by reading textbooks only, without any interaction between teachers and students and students with students. Students cannot communicate and are only quiet or passive learners. Paying attention to these problems, teachers as teachers, but do not pay attention to the learning process that strives for active learning, so that there is interaction between teachers and students and students with students, so that the learning model that can bridge these needs is cooperative (Gillies, 2016).

The application of a cooperative learning model is very appropriate to use because the cooperative learning model contains a shared attitude or behavior in working among others in an orderly structure of cooperation in a group, consisting of two or more people, and work success is strongly influenced by the involvement of each group member. This cooperative learning model is based on constructivist learning that prioritizes the active role of learners in their learning. This cooperative learning model has various techniques, one of which is the two stay two stray technique (Aswar, 2020). From the use of the two stay two stray technique, students are required to be able to explain and write down the material learned and obtained during this technique (Mantasiah, 2018). Therefore, students are expected to be able to communicate in writing about the material of the respiratory system, especially in the respiratory mechanism and disorders that occur in the respiratory system.

The cooperative learning model of the two stay two stray technique provides opportunities for students to improve communication skills in expressing ideas or ideas by sharing the results of information accompanied by argumentation in group discussions or between groups. This is to the demands of Basic Competence (KD) in respiratory system material, namely, students can analyze the relationship between the structure of the tissues that make up organs and explain functional disorders that can occur in the respiratory system. Therefore, the use of a learning model with the two stay two stray technique in Biology subjects on respiratory system material is expected to have a good influence on the communication skills of students. Based on the problems that have been developed previously, the purpose of this study is to determine the Effect of the Cooperative Learning Model of the Two Stay Two Stray Technique on Student Communication Skills.

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## II. MATERIAL AND METHODS

This research is quantitative research with quasi-experimental methods. The design used in this study is Nonequivalent Control Group Design. This study involved two classes, namely the experimental class and the control class, where these two classes were given different treatments. The experimental group was given treatment using cooperative learning of the two stay two stray technique, and the control group was given treatment using conventional learning. The population of this study was students of Public High School 6 South Tangerang. The sample in this study amounted to 72 people taken using random sampling techniques. The subjects were divided into 2 groups, namely an experimental group of 37 students and a control group of 35 students. This research has received approval from all samples who have filled out a statement of ability to become a research sample and have met the requirements of the research code of ethics. Data collection techniques in this study are tests and measurements. The instrument used in research is in the form of an essay test and uses a rubric as a measure in providing an assessment of written communication skills. The assessment criteria for students' written communication skills are given a maximum score according to the indicators of communication skills and indicators on the respiratory system material. The study also used observation sheets to determine learning activities using the two stay two stray technique. As well as questionnaires to find out the response of students to the learning model used. After being given treatment, it ends with taking post-test scores to determine the effect of the cooperative learning model of the two stay two strays (TSTS) technique on the communication skills of students. Data analysis techniques in this study use descriptive analysis tests, followed by pre-analysis tests, namely with Normality Test and Homogeneity Test, and continued with T-Test (Independent) and N-Gain test with Microsoft Excel.

## III. RESULTS AND DISCUSSION

### Results

After conducting research located at Public High School 6 South Tangerang, researchers obtained data that had been collected from the results of tests on students' communication skills, observation sheets, and questionnaires. The number of questions used in this study was 12 questions with essay forms given in two classes, namely classes namely in class XI Science 3 and XI Science 4. The data obtained are as follows:

#### a. Descriptive Analysis

##### Pretest average score

Pretest which is carried out as a benchmark in research to determine the extent of students' communication skills. The average score of the pretest provides an overview of the initial ability of students before learning, especially in the respiratory system material. The results of obtaining student pretest scores in experimental and control classes can be seen in Table 1 as follows.

Table 1. Pretest Results of Student Communication Skills

Class	Top marks	Lowest score	Sum	N	Average pretest
Experimental Class	75,00	35,42	2062,5	37	55,7
Control class	70,83	33,33	1829,8	35	52,2

The pretest results in Table 1 show that the average of the control class and the experiment obtained a low average. This gives the idea that the written communication skills of the two classes are still low. After obtaining the average pretest results, normality and homogeneity tests are carried out as follows.

#### b. Analysis Prerequisite Test

##### 1. Normality Test

The Normality Test used in this study is the Chi-Squared Test. The Normality Test is used to determine whether the data comes from a normally distributed population or not, provided that the data comes from a normally distributed population if it meets the criteria of  $X^2 \text{ count} < X^2 \text{ table}$  is measured at a certain level of significance and confidence level. The calculation results of the Normality Test between the experimental class and the control class can be seen in Table 2 as follows:

Table 2. Normality Test Calculation Results

Class	N	$X^2 \text{ count}$	$X^2 \text{ table}$ ( $\alpha = 5\%$ )	Conclusion
Experiment	37	6,7125	11,07	Data comes from normally distributed Population
Control	35	6,145	11,07	

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Table 2. Shows that the results of the Normality Test at a significant level of 5% obtained results with a normal distribution. These results suggest that both classes belong to normally distributed populations.

### 2. Homogeneity Test

The homogeneity test or similarity test of two variances is used to find out whether both sample groups come from the same population (homogeneous) or not. The test criteria used are that both groups are said to be homogeneous if  $F_{\text{calculate}} \leq F_{\text{table}}$  are measured at a certain significance and level of confidence. The results of the calculation of the Homogeneity Test in the sample group can be seen in Table 3. as follows.

**Table 3. Homogeneity Test Calculation Results**

Group	N	F count	F table	Conclusion
Experiment	37	1,07	2,30	The sample comes from the same or homogeneous population
Control	35			

The calculation results of the Homogeneity Test are obtained by calculating the results with  $F_{\text{calculate}} \leq F_{\text{table}}$ . These results indicate that the sample came from the same or homogeneous population.

### c. Test the Hypothesis

After testing the analysis requirements, then hypothesis testing is carried out. Testing was conducted to determine whether there was an influence of the cooperative learning model of the two stay two stray technique on the communication skills of students.

Hypothesis testing is tested using the t-test, with the test criterion that is, if count < t table then  $H_0$  is accepted and  $H_1$  is rejected. Meanwhile, if the t count  $\geq$  t table,  $H_1$  is accepted  $H_0$  is rejected, at a confidence level of 99% or a signification level of 1%. Based on the calculation results, a t count of 3.11 and a t table of 2.66 were obtained. The results of these calculations show that t calculate  $\geq$  t table so that  $H_0$  is rejected and  $H_1$  is accepted, or in other words, there is an influence of the cooperative learning model of the two stay two stray technique on the communication skills of students.

### d. N-Gain Test

#### 1. Analysis of Student Communication Skills Using the Cooperative Learning Model of the Two Stay Two Stray Technique on Respiratory System Material.

The results of the analysis of pretest, posttest, and N-Gain data obtained from the class using the cooperative model of the two stay two stray technique on respiratory system material can be seen in Table 4 as follows.

**Table 4. Average value per indicator of students' communication skills using the cooperative learning model technique. Two Stay Two Stray**

Communication Proficiency Indicator	Pretest	Posts	N-Gain	Information
Create a blurb	19,5	27,5	0,6	Keep
Reading Charts	3,8	6,5	0,65	Keep
Reading Images	1,5	3,24	0,70	Keep
Change the shape of the presentation	2	3,46	0,73	Tall
Average			0,68	Keep

The data in Table 4 shows that the results of obtaining Posttest scores in experimental classes have increased from pretest scores with an average calculation result of N-Gain of 0.68 with a medium category, this shows that students have improved written communication.

#### 2. Analysis of Student Communication Skills Using Conventional Learning Models on Respiratory System Material

Data from the pretest, posttest, and N-Gain analysis results obtained from the control class with conventional learning on respiratory system material can be seen in Table 5 as follows.

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**Table 5. Average Value Per Indicator of Student Communication Ability with Conventional Learning**

Capability Indicators Communication	Pretest	Posts	N-Gain	Information
Create a blurb	19,6	1 8,6	0,08	Low
Reading Charts	1,7	2,1	0,06	Low
Reading Images	1,1	2,9	0,62	Keep
Change the shape of the presentation	1,9	3	0,52	Keep
Average			0,38	Keep

The data in Table 5 show that in the control class, the calculation of N-gain is obtained on average with medium criteria. But it is lower when compared to the experimental class. In addition, in the indicators-making descriptions, there is a decrease in post-test results. This is because students are less focused on doing problems. The response of students in the respiratory system material using the cooperative learning model of the two stay two stray technique was obtained based on taking from the results of student questionnaires. Data samples were taken from as many as 37 students in an experimental class using the cooperative model of the TSTS technique and 35 students using the lecture model as a control class. At the end of the learning process, students are instructed to fill out the response questionnaire, the response questionnaire includes all indicators that have been determined by the learning model that has been used in the respiratory system material, the response questionnaire is used as a benchmark for student response after learning using the cooperative model of TSTS techniques and learning using the lecture method.

Learner response data has been analyzed using Likert scale calculations. The response of students using the cooperative learning model of the TSTS technique was obtained on average by 80.15% with the strong category and in the control class using the lecture method obtained an average of 54.5% with the medium category. The results of the comparison of student responses in experimental and control classes can be seen in Table 6 as follows.

**Table 6. Recapitulation of Student Response Results**

No	Indicators	Experimental Class	Category	Control Class	Category
1	Learners' Response to biology lessons	80,2%	Strong	59,9%	Keep
2	Student response to learning with lecture method (conventional)	-	-	48,34%	Keep
	Student response to learning with the cooperative learning model of the two stay two stray technique	84,7%	ery powerful	-	-
3	Demonstrate students communication skills	75,55%	Strong	55,3	Keep
Average		80,15%	Strong	54,5%	Keep

### DISCUSSION

The results of the research will be described into three sub-chapters consisting of:

#### 1. Learning in the Experimental Class with the Cooperative Model of the Two Stay Two Stray Technique and Control Class with Conventional Learning

The implementation of learning using the cooperative model of the TSTS technique is observed directly by observers, the cooperative model has stages carried out by students and teachers during learning. The learning stages will be observed using teacher and student observation sheets. According to (Putri et al., 2020) Observation sheets are used to determine the increase in teacher and student activities in learning activities.

The implementation of the learning process using the cooperative learning model was carried out in three meetings in class XI Science 3. The results of the teacher's implementation observation at the first meeting of learning were not carried out optimally, the stage that was not carried out was that the teacher did not provide perception to students. Giving apperception is an important thing to be conveyed by teachers, namely in the form of questions related to the material to be presented,



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teachers need various efforts to foster readiness in students to receive lessons. In addition, the provision of apperception is also used to carry out the next learning steps, namely motivating students to be ready to learn. This is in line with research conducted by (Carless & Boud, 2018) that the provision of apperception is very important to build the enthusiasm of students in learning so that they can focus their attention on learning.

The implementation of learning at the second meeting was achieved to the maximum, meaning that all stages or learning steps were passed and the criteria were very good. This happens because teachers and students follow every step and learning process conductively. This is in line with research conducted by (Nidzam & Ahmad, 2017) that a conducive classroom environment is an important dimension that must be considered. The learning environment that is created plays the role of students as learning subjects, and a sense of comfort, security, and enjoyment can be felt by students (Tisza & Markopoulos, 2021).

In the implementation of learning in the third meeting there are learning steps passed, after being analyzed on the teacher's observation sheet there are stages that are missed in providing motivation. This motivation is something that must be conveyed by teachers to provide enthusiasm and encouragement so that students are more active in learning. According to (Lin & Chen, 2017) Motivation can also function as a driver of student effort in achievement and students can select actions to determine what they must do so that it is beneficial for the goals they want to achieve.

In the implementation of the cooperative learning model with the two stay two stray technique several stages are not carried out by students, after being analyzed on the observation sheet, namely, students do not grow motivation in students because students in passive classes mean that students just stay silent and observe without answering questions from teachers related to the topic to be discussed. Learners must have good motivation when starting to learn. In addition, students do not listen to perceptions, some students do not listen to learning objectives and students do not make conclusions at the end of learning.

In the second meeting, there was a learning stage that was not carried out, namely, students did not give conclusions at the end of learning and did not answer greetings from the teacher, this was not carried out because class hours were not conducive so that the learning that took place was not carried out optimally. The percentage of meetings of the three student implementation activities reached 100% with very good criteria, meaning that all stages or steps in the learning process using the two stay two stray technique went well.

The implementation of learning in the control class has good criteria. At the first meeting, some stages or steps were not carried out by the teacher, meaning that the learning stages were not achieved optimally, after analysis some stages were passed including the teacher did not convey learning objectives and evaluate learning. According to (Al-fraihat et al., 2019) Giving evaluations is very important for teachers to do because by providing evaluations, students can find out the extent of success that has been achieved during learning. At the second meeting on the implementation of activities, teacher and student activities had good criteria.

The second meeting in its implementation had several stages passed by teachers and students, namely the teacher had not provided opportunities for students to ask questions and give awards to students. While students are less active in giving opinions or questions and do not answer questions from the teacher. According to research conducted by (Alawamleh & Al-twait, 2020) That giving questions to students is important to improve students' communication skills, besides that teachers need to improve their knowledge of questioning skills.

The third meeting resulted in the implementation of teacher and student learning and saw an improvement from the first and second meetings, but there were some missed learning steps, namely giving awards and evaluations after completing learning, this was due to insufficient time so that learning did not run optimally. Evaluation is an important factor in lesson planning (Xian et al., 2018). The evaluation aims to assess whether a program is implemented according to plan and achieves the expected results or not

### **2. Communication Skills of Students in Experimental and Control Classes**

Communication skills are very necessary, especially during learning activities. The communication skills of students are analyzed based on the pretest and posttest scores carried out at the beginning and end of learning activities, from the N-Gain results obtained after conducting the pretest and posttest to see the comparison of students' cognitive learning outcomes. The value is calculated using the N-Gain formula to find out how much the increase or success of students during the learning process in answering questions (Antika, 2019). The achievements obtained by students are detailed based on the Competency Achievement Indicators (GPA) of respiratory system material.

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Data from the analysis of students' communication skills using the cooperative learning model of the two stay two stray technique showed that the increase with an average pretest of 55.7 and an average posttest of 84.97 and N-Gain produced of 0.68 in the medium category. According to (Foronda et al., 2016) The communication skills of students can provide an atmosphere of active learning, where students have confidence in expressing their aggression and become a means of developing empathy in respecting differences of opinion.

The results of the per-indicator question analysis on the communication skills of students have a medium category, except for the indicator of changing the form of presentation, which has a high category. That is, in this written communication ability students tend to be able to change the form of presentation to change into the form of pictures. Based on the results of N-Gain shows success in the process of achieving student learning outcomes. The causative factor of the results of student learning achievement is the selection of appropriate learning models. The teacher plays a major role in the learning process. A teacher's intelligence in determining the learning model will be apparent if the learning model used is by the learning material discussed.

The learning model must be by the characteristics of the learners involved in the learning process. As much as possible the learning model used can provide direct experience to students. This is in line with the opinion (Lai, 2015) that the use of effective learning models will facilitate teachers teaching. Learning activities will also be fun for teachers and students.

The communication ability of students without using the cooperative learning model of the two stay two stray technique in the control class has improved. The increase was obtained based on learning outcomes using the lecture method, and posttest results of 71.7 with good categories. The increase in posttest results obtained by the control class was lower than that of the class using the cooperative model of the TSTS technique.

According to (Singh et al., 2020) The use of less varied learning models can lead to lower learning outcomes because learners are less active during the learning process. The data from the calculation of N-Gain showed that in the control class, the average obtained by 0.38 had medium criteria, but lower than the average obtained in the experimental class. The score per indicator of students' communication skills in making descriptions and reading graphs shows low criteria while in reading pictures and changing the form of presentation the resulting criteria are medium.

The low learning outcomes of students due to a lack of understanding of the material obtained make it difficult to express ideas and ideas in the form of written tests in the form of questions that include indicators of communication skills. Using a more teacher-centered lecture method, so that learners feel bored and cannot understand widely about the respiratory system material.

Learning conditions that tend to be passive cause students to be unable to explore creative ideas in solving the problems presented (Tseng et al., 2016). The lecture method and less involving students in the control class make students more passive and difficult to understand the material presented. The learning process carried out by a teacher must pay attention to the components of learning. The learning component consists of learning objectives, teachers, learners, methods, media, learning resources, and evaluation, from these components each other support each other in achieving learning success.

### **3. Student Response to the Learning Model**

The results of research data processing in experimental classes using cooperative learning models, two stay two stray techniques, and control classes using lecture methods on respiratory system material showed significantly different results. The results showed that in the control class or without using the cooperative learning model of the two stay two stray technique, the response of students to the implementation of learning with an average value of 54.5% with a moderate category.

Different results were seen in the experimental class where the overall response of students to learning with the cooperative learning model of the two stay two stray technique had an average of 80.15% or could be categorized as strong. This average indicates that students respond well and like the cooperative learning model of the two stay two stray technique when the learning implementation process takes place. This is in line with the opinion (Fauzan & Fikri, 2022) which states that the selection of the right learning method by the teacher will provide a good response and increase student learning activity. Not only the selection of learning methods and models by teachers, but positive responses also affect the mastery of good learning and processing methods or models by teachers.

The response of students to cooperative learning of the two stay two stray technique can be caused by the active role of students during learning, students feel involved in the learning process, and this is inversely proportional to the implementation of learning in the control class. Learning with the cooperative model of the two stay two stray technique students are more motivated and enthusiastic in learning activities. Because students feel the need and are well motivated, students will be able to understand well the material learned and of course, will easily apply it in the form of oral and written

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communication. This is my opinion (Harandi, 2015) That if motivation grows in students, then students will be happy in carrying out the learning process, optimal and satisfying results, and achieving learning goals optimally according to what is contained in the curriculum.

### IV. CONCLUSION

Based on the results of the study, conclusions can be drawn in this study: Learning using the cooperative model of the two stay two stray technique is better than learning using the lecture method. This is evidenced by the acquisition of the t-test with t count results greater than the t table, namely t count 3.11 and t table 2.66. Then there is a significant difference. The implementation of learning using the cooperative learning model of the two stay two stray technique on respiratory system material in teacher and student activities has a very good category. While the implementation of learning using the lecture method in teacher and student activities has a good category. The response of students in the experimental class has a strong category. While the average acquisition of student responses in the experimental class was better than the responses of students in the control class.

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## Analysis of Basketball Coach Competency: A Case Study of Student Level Basketball Coaches in Yogyakarta



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**ABSTRACT:** The purpose of this study was to analyze and measure the competence of student-level basketball coaches. The sample in this study were 70 student level basketball athletes. There are four indicators of coach competence, namely Motivation Competency, Game-strategy competency, Character-building competency, Technique competency. Data collection was carried out in 5 Yogyakarta schools simultaneously for one day. This research instrument uses a questionnaire and is distributed via the Google form. This questionnaire uses a Likert scale of 1 – 4. Before the questionnaire is distributed to athletes to answer, the Aiken's validity test is first carried out with a value of 0.898 and the Cronbach Alpha reliability test is 0.791. Based on the competency results of Yogyakarta student basketball coaches "very poor" 6 answers (8.57%), "less" 17 answers (24.29%), "enough" 21 answers (30%), "Good" 23 answers (32.86%), "very good" 3 answers (4.28%). However, the weakness of Yogyakarta student basketball coaches is the Character-building competency and Technique competency indicators. This is evidenced by the total answers are very less and less, more than the total answers are very good and good. So that there is a need for special training support, coach training, or basketball coach education through sports colleges, the competency test stages are carried out gradually and periodically so that the competence of student basketball coaches can continue to increase and develop.

**KEYWORDS:** Basketball, Coach Competency, Coach Basketball

### I. INTRODUCTION

The success of the athlete's achievements, certainly cannot be separated from the role of the coach. For athletes, coaches can see all the abilities of each athlete from talent, ability, physical and psychological (Williams et al., 2021). The coach also has a role like a parent on the field during training or during a match. Coaches are also expected to have adequate competence or ability to coach and train their athletes (Missura et al., 2022). Without adequate competence, all will be in vain. Achievement which is the main goal will not be achieved optimally. The training carried out must adjust and pay attention to the levels of athletes (Koh et al., 2017). In addition, the coach is expected to be able to create a fun and not boring training atmosphere for the athletes. The training materials provided must also be systematic, measurable, purposeful but varied in order to create a comfortable and enjoyable training atmosphere (Lam et al., 2021). The purpose of the training remains to provide a good foundation of motion, basic techniques or tactics, improve physical conditions to achieve achievements. However, in reality, many coaches do not understand the competency criteria that must be possessed by a coach, especially in basketball.

Basketball is one of the most popular sports in the world and most in demand by everyone. Many athletes have started their career as basketball players since they were children or at school. Therefore, to become a successful basketball player, the role of a coach in the field of basketball competence is needed. Ideally a basketball coach must master basic techniques and tactics, physical condition training, training programs in teams or individual players (Hidayatullah, 2019). But to reach the ideal factor as a basketball coach, special training or basketball education is needed through a sports university (Missura et al., 2022), (Komotska & Sushko, 2022). However, special training for basketball coaches or sports universities that have basketball coaching programs is still very rare. So the coach does not know the ideal as a basketball coach. In addition to the physical training program, the coach must also understand the condition of a team. A coach must be able to motivate his team during training or matches (Darisman & Suharti, 2019). Motivation will be very useful to improve teamwork (Šimková & Válková, 2020), (Atta et al., 2021).

From these problems, it is necessary to have ideal coach competency criteria for basketball athletes, especially from the student level. So the purpose of this study was to analyze and measure the competencies possessed by student basketball coaches.

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So that the ideal as a basketball coach can be known, the first step is to use a survey. The importance of this research is to examine what are the indicators of ideal coach competence based on the answers of basketball athletes at the student level.

### II. METHOD

The method used in this study uses a survey, and the analysis uses a descriptive percentage (Prabowo et al., 2023). The sample in this study were 70 student level basketball athletes. Data collection was carried out in 5 Yogyakarta schools simultaneously for one day. This research instrument uses a questionnaire and is distributed via the Google form. This research questionnaire was prepared based on a review of literature and academics specifically for basketball through discussion. So that found 4 indicators of competence of basketball coaches. This questionnaire uses a Likert scale 1 – 4. The following is a questionnaire grid:

**Table 1. Kisi-Kisi Instrument**

Indicators	Statement	Item
Motivation competency	Help athletes maintain confidence in themselves	1
	Mentally prepare his/her athletes for game strategies	2
	Build the self-esteem of his/her athletes	3
	Motivate his/her athletes	4
	Build team cohesion	5
	Build the self-confidence of his/her athletes	6
	Build team confidence	7
Game-strategy competency	Recognize opposing team's strengths during competition	8
	Understand competitive strategies	9
	Adapt to different game situations	10
	Recognize opposing team's weakness during competition	11
	Make critical decisions during competition	12
	Maximize his/her team's strengths during competition	13
	Adjust his/her game strategy to fit his/her team's talent	14
Characterbuilding competency	instill an attitude of good moral character	15
	Instill an attitude of fair play among his/her athletes	16
	Promote good sportsmanship	17
	Instill an attitude of respect for others	18
Technique competency	Demonstrate the skills of his/her sport	19
	Coach individual athletes on technique	20
	Develop athletes' abilities	21
	Recognize talent in athletes	22
	Detect skill errors	23
	Teach the skills of his/her sport	24

Before this questionnaire was distributed by athletes, especially through validity and reliability tests. The results of the validity test using Aiken's V obtained a value of 0.898 and the Cronbach Alpha reliability test obtained a value of 0.791. Based on the results of the validity and reliability tests, the questionnaire is feasible for research use.

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### III. RESULTS

After the data is collected, it is necessary to test for normality using the Kolmogorov-Smirnov. to determine whether the data is normally distributed or not. If the data is normal, then it is feasible to continue the next analysis. Based on the Kolmogorov-Smirnov test, it is known that the value of Sig. 0.200 which means the data is normally distributed, then the results of the normality test are shown in the figure below.

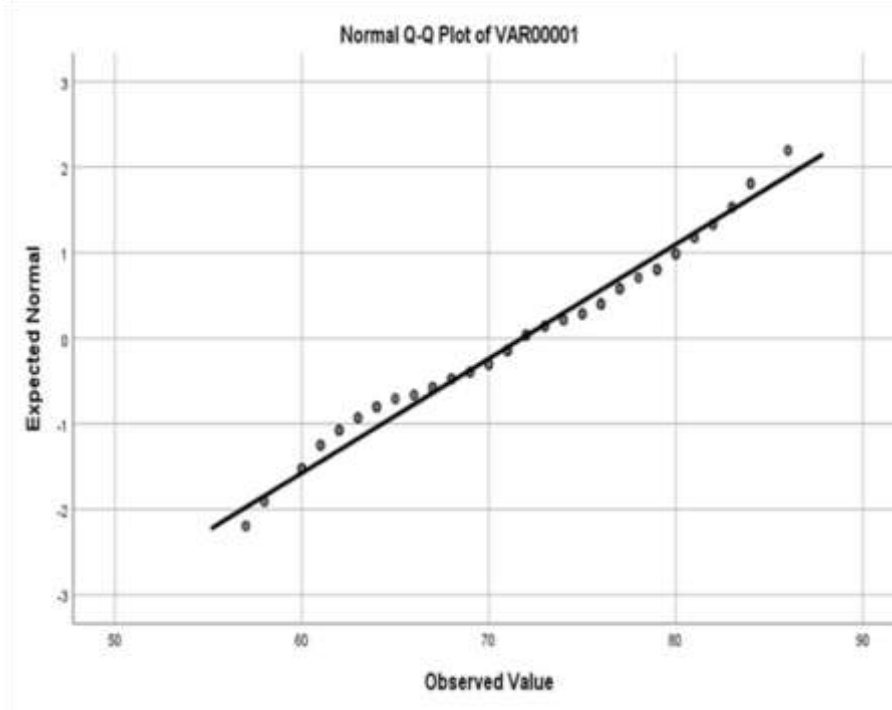


Figure 1. Normality Test Results

Based on the figure, the distribution of the dots is close to a straight line, meaning that the research data is normal. So it is feasible to use for subsequent analysis using descriptive percentages.

Table 2 is an analysis of all basketball coach competency indicators, the following are the results

Table 2. Basketball Coach Competency Results in Yogyakarta

No	Interval	Category	Frequency	%
1	83,01 < 86	Very Good	3	4.28%
2	75,33 < 83,01	Good	23	32.86%
3	68,05 < 75,53	Enough	21	30%
4	60,57 < 68,05	Less	17	24.29%
5	57 < 60,57	Very Poor	6	8.57%
Amount			70	100%

Based on the overall results, it can be seen that the content of the Yogyakarta city basketball coach was "very poor" 6 Answers (8.57%), "less" 17 answers (24.29%), "enough" 21 answers (30%), "Good" 23 answers (32.86 %), "very good" 3 answers (4.28%).

Then in table 3 are the results of the motivation competency indicators which are part of the basketball coach competency. Following are the results:

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**Table 3. Result of Indicator Coach Motivation Competency for basketball coaches in Yogyakarta**

No	Interval	Category	Frequency	%
1	27,29 < 28	Very Good	4	5.71%
2	23,05 < 27,29	Good	20	28.58%
3	18,81 < 23,05	Enough	24	34.28%
4	14,57 < 18,81	Less	18	25.72%
5	14 < 14,57	Very Poor	4	5.71%
Amount			70	100%

Based on the overall results, it can be seen that the motivation competency of Yogyakarta city basketball coaches is "very poor" 4 answers (5.71%), "less" 18 answers (25.72%), "enough" 24 answers (34.28%), "Good" 20 answers (28.58%), "very good" 4 answers (5.71%).

Table 4 shows the results of the Game-strategy competency indicator which is part of the basketball coach's competency. Following are the results:

**Table 4. Results of Indicator Game-strategy competency for basketball coaches in Yogyakarta**

No	Interval	Category	Frequency	%
1	27,57 < 28	Very Good	5	7.14%
2	23,21 < 27,57	Good	18	25.72%
3	18,85 < 23,21	Enough	24	34.28%
4	14,49 < 18,85	Less	19	27.13%
5	14 < 14,49	Very Poor	4	5.71%
Amount			70	100%

Based on the overall results, it can be seen that Game-strategy competency of Yogyakarta city basketball coaches is "very poor" 4 answers (5.71%), "poor" 19 answers (24.29%), "enough" 24 answers (34.28%), "good" 18 answer (25.72%), "very good" 5 answers (7.14%).

Table 5 shows the results of the Character-building competency indicators, which are part of the basketball coach's Competency. Following are the results:

**Table 5. Results of Indicator Character-building competency for basketball coaches in Yogyakarta**

No	Interval	Category	Frequency	%
1	15,75 < 16	Very Good	7	10%
2	13,20 < 15,75	Good	15	21.44%
3	10,66 < 13,20	Enough	24	34.28%
4	8,11 < 10,66	Less	16	22.87%
5	8 < 8,11	Very Poor	8	11.41%
Amount			70	100%



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Based on the overall results, it can be seen that the Character-building competency of Yogyakarta city basketball coaches is "very poor" 8 answers (11.41%), "less" 16 answers (22.86%), "enough" 24 answers (34.28%), "Good" 15 answers (21.44%), "very good" 7 answers (10%).

Table 6 shows the results of the Technique competency indicator, which is part of the basketball coach's competency. Following are the results:

**Table 6. Results of the Indicator Technique Competence for Basketball Coaches in Yogyakarta**

No	Interval	Category	Frequency	%
1	23,19 < 24	Very Good	5	7.14%
2	19,51 < 23,19	Good	20	28.57%
3	16,29 < 19,51	Enough	18	25.72%
4	12,61 < 16,29	Less	23	32.86%
5	12 < 12,61	Very Poor	4	5.71%
Amount			70	100%

Based on the overall results, it can be seen that the Yogyakarta city basketball coaches technique competency is "very Poor" 4 answers (5.71%), "less" 23 answers (32.86%), "enough" 18 answers (25.72%), "good" 20 answers (28.57%), "very good" 5 answers (7.14%).

## IV. DISCUSSION

Qualified coaches must have good competence and excel in their fields. With adequate competence, the coach can be said to be able to provide training to athletes (Williams et al., 2021). However, good competence is not necessarily acceptable to athletes because the abilities of athletes or teams are definitely different (Phillips & Jubenville, 2023). Based on the overall data in table 2, the coach who was said to be very good and good by athletes namely 26 answers and the coach who was said to be very poor and less namely 23 answers. Meanwhile, the remaining 21 answers were said to be enough, meaning that the competence quality of Yogyakarta city student basketball coaches can be said to be sufficiently dominant. Apart from that the numbers are very good and good with very less and less, actually the difference is not much different. From these results the quality of trainer competence must continue to be improved. The way to improve the competence of the coach is by serving as a long-term special coach or by attending basketball coaching education at a sports university (Collet et al., 2019). Then, before you really want to become a basketball coach, you have to be tested gradually and periodically every year.

After carrying out an overall competency analysis, then the analysis is based on the competence indicators of Yogyakarta student basketball coaches. Based on the results for each indicator which consists of table 3 namely Motivation Competency, table 4 namely Game-strategy competency, table 5 Indicator Character-building competency, table 6 Indicator Technique competency, it can be seen that the difference in the results is not much different between very good, good and very poor, less. In the results of the athlete's answers, namely Motivation Competency (table 3), the coach was able to provide motivation, but in providing motivation, many answers from student basketball athletes thought that the motivation conveyed had not been able to increase mentality. The total answers of athletes are very good and good are 24 answers, while the total answers of athletes are very less and less are 22 answers, the remaining 24 answers are enough. From these results there are still many Yogyakarta student athletes who consider that the competence of the coaches to provide motivation is lacking. Motivation is the main force in team sports, with high motivation in each athlete, the cooperation between individuals will be better (Mu'ammal et al., 2022). Besides that, high motivation will affect the level of confidence, concentration, reduce anxiety and mental toughness in the team (Atta et al., 2021), (Prabowo et al., 2023).

The results of the athlete's answers on the Game-strategy competency (table 4), namely the total of very good and good namely 23 answers, while the total is very poor and less namely 23 answers, the remaining 24 answers are enough. The total results are not much different, these results also indicate that the competence of trainers in strategy games is still sufficient. The coach is still not careful in observing the team's abilities such as strengths and weaknesses, the condition of the team or each individual, even the conditions in the match. Game-strategy competency is a mandatory indicator that every coach must have, even in all types of sports (Rangel et al., 2023). Strategy games include tactics in every basketball game. So with a good strategy, there will also be

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many game patterns such as attack and defense. In addition, a coach who has a good strategy is able to see weaknesses in opponents (Tian et al., 2020), (Sarlis & Tjortjis, 2020).

The results of the athletes' answers on Character-building competency (table 5) total very good and good answers namely 22 answers, the total answers are very poor and less answers namely 24 answers, while the remaining 24 answers are enough. From these results, Yogyakarta student basketball character-building competency coaches can be said to be lacking. Through the character taught by coaches to athletes, a good personality will be formed (Kilic & Ince, 2021). Team sports have a big risk of stimulation by the opponent or the team itself. Without a strong character, athletes run the risk of becoming emotional, refusing to accept defeat or boasting about their wins (Józefowicz, 2020). Then the Technique Competency indicator (Table 6) the total answers of the athletes were very good and good, namely 25 answers, very poor and less namely 27 answers, while the remaining 18 answers were enough. These results are clear, that the technical competency of the basketball coach based on the answers of Yogyakarta student athletes is still lacking. Technique is the most basic main material of every sport (de Andrade Rodrigues et al., 2020), (Sofyan & Budiman, 2022). Coaches without good technical skills will make athletes not develop (Junior et al., 2021). It can even cause athletes prone to injury. Because of the need for education and training of trainers, so that the competence of trainers can be formed and continue to develop.

## V. CONCLUSION

The competence of Yogyakarta student basketball coaches is quite enough. Based on the results of this study, coaches who were said to be very good and good by athletes namely 26 answers and coaches who were said to be very poor and less totaled 23 answers. While the rest which is said to be enough amounted to 21 answers. The coaches competency indicators, namely Motivation Competency and Game-strategy competency, received a total of very good and good answers more than the total very poor and less answers. However, the total amount is not significant. Then the Character-building competency and Technique competency indicators got a total of very good answers, both less than the total answers were very poor and less. So that the Characterbuilding competency and Technique competency indicators of Yogyakarta student basketball coaches are bad. So that the need for special training support, coach training, or basketball coach education is then carried out in a phased and periodic competency test stage so that the competency of student basketball coaches can continue to increase and develop

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## Accounting Information System at Vietnam Life Insurance Businesses



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**ABSTRACT:** Life insurance is increasingly close to the Vietnamese people and is likened to a provision financial solution against unexpected risks in life. The life insurance market in Vietnam continues to grow due to the recovery of the global economy and increased consumer demand for an asset and health protection. However, the insurance business is one of the most sensitive business areas. Therefore, information on a financial situation in general and business results provided by the accounting department has a great impact on customers and determines the existence and development of life insurance businesses. A rational accounting information system will make an important contribution to providing reliable accounting information, thereby improving the reputation of life insurance businesses in the market. In this article, the authors clarify the theoretical basis and situation of the accounting information system of Vietnamese life insurance businesses. From there, the authors propose solutions to improve the accounting information system to help improve the competitiveness of life insurance businesses.

**KEYWORDS:** Accounting information system, Life insurance businesses, accounting information, Life insurance market

### 1. INTRODUCTION

In Vietnam, the life insurance business plays a great role in the development of the economy. Currently, life insurance businesses are providing more than 500 insurance products in the life insurance and health insurance business. Life insurance products were born to meet the diverse needs of policyholders, including products that only provide pure protection benefits (such as term insurance, health insurance, etc.) and products that combine both protection and investment (such as universal life insurance products, unit-linked insurance products, pensions, etc.) (Insurance Supervisory Authority under the Ministry of Finance). According to the Insurance Association, in 2022, Vietnam continued to be a key life insurance market in Asia with remarkable results such as total payouts reached VND 44.186 billion, an increase of 34% compared to the previous year same period last year; investment back into the economy of life insurance business reached VND 592.811 billion, up 13,9%; a total number of contracts reached 13.921.675 contracts, up 5%; total revenue for the whole year reached VND 178.327 billion, up 12%. To maintain growth and improve competitiveness in the insurance business market, it requires administrators, as well as other decision-makers (investors, customers, suppliers, banks, etc.), must be provided with reliable information for decision-making. The accounting information system (AIS) is an important part of the information system of a life insurance business, and AIS is always interesting and improved. Therefore, it is necessary to assess the current situation and improve the accounting information system in Vietnamese life insurance businesses.

### 2. THEORETICAL BASIS

#### 2.1. Accounting information system

An information system is a formal process for collecting data, processing the data into information, and distributing that information to users. An accounting information system (AIS) is a system that a business uses to collect, store, manage, process, retrieve, and report its financial data. This data can then be used by accountants, consultants, business analysts, managers, chief financial officers (CFOs), auditors, regulators, and tax agencies. Although an AIS can be a manual system, today most accounting information systems are computer-based. Romney and Steinbat (2012) argue that the accounting information system performs important functions such as collecting and storing data arising during operations and transactions to help the business review the events that occur, process data into useful information for decision-making, at the same time provide and control enough information to protect the assets of the entity, including system data. accounting information.

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### 2.2. Components of accounting information systems

An accounting information system tracks all accounting and business activities for a company. It generally consists of six primary components: people, procedures and instructions, data, software, information technology infrastructure, and internal controls. People who use the system, include accountants, consultants, managers, business analysts, CFOs and auditors. AIS helps departments in the company coordinate and work more efficiently. Example: Management sets sales targets, then employees order goods with the appropriate amount of inventory. The goods receipt order notifies the accounting department that a new payable has arisen. When the sale is done, the sales enter the customer's order. From there, the accountant issues an invoice to the customer, the warehouse can collect the orders, the shipping department can send the order, and the accounting department will be notified of a new receivable. Customer service is responsible for tracking customer shipments, and management can generate sales reports and perform performance cost analysis, costs of inventory, and shipping to manage. With a well-designed AIS, everyone within an organization can access the same system and retrieve the same information. An AIS also simplifies the process of reporting information to people outside of the organization, when necessary. For example, a consultant can use AIS to analyze the performance of a company's pricing structure based on retrieving and reviewing cost, sales, and revenue data. In addition, auditors can use AIS to assess a company's internal control, financial position, and regulatory compliance.

Procedure and instructions are the ways that data are collected, stored, retrieved, and processed. These methods are both manual and automated and the data can come from internal sources (e.g., employees) and external sources (e.g., customers' online orders). Procedures and instructions will be coded into AIS software; they should also be "coded" into employees through documentation and training. The procedures and instructions must be followed consistently for the AIS to be effective.

Data includes all the information that goes into an AIS. To store information, an AIS must have a database structure to store information. Structured query language (SQL) is a computer language commonly used for databases. SQL allows the data that's in the AIS to be manipulated and retrieved for reporting purposes. The AIS will also need various input screens for the different types of system users and different types of system users and data entry, as well as different output formats to meet the needs of different users and different types of information. The data in the AIS is all financial information relevant to the business. Any business data that affects the company's finances must be transferred into the AIS. The type of data included in an AIS depends on the nature of the business, but it may consist of the following: Sales orders, customer billing statements, sales analysis reports, purchase requisitions, vendor invoices, check registers, general ledger, inventory data, payroll information, timekeeping, tax information. This data can be used to prepare accounting reports such as accounts receivable aging, depreciation/amortization schedules, trial balance, profit and loss, and so on. The data would not go into an AIS including memos, correspondence, presentations, and manuals. These documents might have a tangential relationship to the company's finances, but excluding the standard footnotes, they are not part of the company's financial recordkeeping.

The software consists of computer programs used for storing, retrieving, processing and analyzing the company's financial data. Today, most companies use computer software as their AIS platform. Quality, reliability, and security are key elements of effective AIS software. Managers rely on the information it outputs to be of high quality to make sound decisions. AIS software programs can be customized to meet the unique needs of different types of businesses. If an existing program doesn't meet a company's needs, the software can be developed in-house with substantial input from end-users or can be outsourced to a company that specializes in developing accounting information systems.

Information technology infrastructure includes all the hardware used to operate the AIS. It can include the following: computers, servers, printers, surge protectors, routers, storage media, and possibly a backup power supply. In addition to cost, factors to consider in selecting hardware include speed, storage capability, and whether a device can be expanded and upgraded. Perhaps most importantly, the hardware selected for an AIS must be compatible with the intended software. One-way businesses can easily meet hardware and software compatibility requirements is by purchasing a turnkey system that includes both the hardware and the software that the business needs. Purchasing a turnkey system means, theoretically, that the business will get an optimal combination of hardware and software for its AIS. A good AIS should also include a plan for maintaining, servicing, replacing, and upgrading components of the hardware system, as well as a plan for the disposal of broken and outdated hardware so that sensitive data is destroyed.

Internal controls are the security measures used to protect data. These can be passwords or biometric identification. Biometric security protocols might include storing human characteristics that don't change over time, such as fingerprints, voice, and facial characteristics.

An AIS must have internal controls to protect against unauthorized computer access and to limit access to authorized users which includes some users inside the company. Internal controls must also prevent unauthorized file access by individuals who are allowed to access only select parts of the system. An AIS contains confidential information belonging not just to the company but

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also to its employees and customers. This data may include Social Security numbers, salary and personnel information, credit card numbers, customer information, company financial data, and financial information of suppliers and vendors. AIS needs internal controls to protect against computer viruses, hackers, and other internal and external threats to cybersecurity. It needs to be protected against natural disasters like fires, floods, earthquakes, and power failures that can cause data loss.

### 3. SITUATION OF ACCOUNTING INFORMATION SYSTEM AT VIETNAM LIFE INSURANCE BUSINESS

The business organization of a life insurance business is usually carried out in a large area. Corporations have many member companies, companies have many branches and representative offices across the country. There are currently 18 life insurance companies in Vietnam (Ministry of Finance Official Portal, 2023).

**Table 1. The life insurance companies in Viet Nam 2023**

	The life insurance companies in Viet Nam 2023
1	Bao Viet Life Corporation (Bao Viet Life)
2	Prudential Viet Nam Assurance Private Limited (Prudential)
3	Manulife (Viet Nam) Limited (Manulife)
4	AIA (Vietnam) Life Insurance Company Limited (AIA)
5	Chubb Life Insurance Vietnam Company Limited (Chubb Life)
6	Mirae Asset Prévoir life insurance Co., Ltd (MAP life)
7	Dai-ichi Life Insurance Company of Viet Nam, Ltd. (Dai-ichi Life Viet Nam)
8	Cathay Life Insurance Vietnam Co., Ltd. (Cathay Life)
9	FWD Vietnam Life Insurance Company Limited (FWD)
10	Hanwha Life Insurance Company Limited (Viet Nam) (Hanwha Life)
11	FWD Assurance Vietnam Company Limited (FWDA)
12	Fubon Life Insurance (Viet Nam) Co., Ltd. (Fubon Life)
13	Generali Vietnam Life Insurance Limited Liability Company (Generali Viet Nam Life)
14	Sun Life Vietnam Insurance Company Limited (Sun Life Viet Nam)
15	Phu Hung Life Insurance Joint Stock Company (PHL)
16	BIDV Metlife Life Insurance Limited Liability Company (BIDV Metlife)
17	MB Ageas Life Insurance Company Limited (MB Ageas Life)
18	Shinhan Life Insurance Vietnam Limited Liability Company (Shinhan Life Viet Nam)

**Source:** Website of the Ministry of Finance

In general, the survey results on the accounting information system in Vietnamese life insurance businesses show that the majority of businesses have applied the accounting information system for management, although at different levels it has partially met the information needs for internal management of the company. The business process of the company is supported by a computer system that installs all kinds of computer software connected to the intranet connection and the internet.

The accounting book system applied to Vietnamese life insurance businesses is quite suitable, meeting the needs of management or accounting control, simple in design and easy to use. All life insurance businesses use accounting software to support accounting work. Some accounting software is used in businesses such as FTS software, PIAS software, and Sun Account software. The application of accounting software has saved time, reduced the workload of accountants, and made bookkeeping and accounting reports quick. The software has security settings and user permissions to prevent unauthorized people and tasks from entering. The survey results show that the data is entered into the software by each module, between the modules there is a link to each other through the transmission and reception of information.

According to the survey results on the situation of inspection of accounting work at insurance business, 100% of businesses have conducted accounting inspection. Self-inspection is mainly done at the end of the quarter, at the end of the year when closing the accounting books, then the accountants of the new sections will print the books and compare them with each other, so the errors are often not handled in timely leading to the need to adjust in the next quarter. In addition, every year, all Vietnamese life insurance businesses hire independent audit services to check and review the financial statements of the entire system to ensure objectivity when reporting publicly external finance.

However, the accounting information system at Vietnamese life insurance businesses also has limitations:

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In the accounting system of most Vietnamese life insurance businesses, there is no management accounting department, so other accounting departments must concurrently, making the quality of the accounting reports not provided sufficient information for managers, who have not performed their advisory role. In addition, Vietnamese businesses in general and life insurance businesses, in particular, are facing a shortage of highly qualified human resources in the field of information technology, especially software experts, information systems, network security, etc.

Vietnamese life insurance businesses do not have common software for information systems, functional departments use different software. This software are developed by different vendors. Therefore, the integration of this information system in the life insurance business becomes complicated and time-consuming.

The collected information is mainly historical information made from financial accounting, not focusing on future information for making estimates. Therefore, the accounting information provided by the Vietnamese life insurance business is mainly from the financial statement system. The management reporting system has not been specifically designed, just reports made from several indicators on the financial statements such as revenue, expenses, and liabilities. This affects the decision-making of business managers, investors, etc.

The operation of the internal control system in the insurance business still has some incomplete problems, not able to control the maximum possible risks in the accounting work, but focus on economic-financial indicators. At a few life insurance companies such as Bao Viet Life Corporation, there is an internal inspection board responsible for inspecting the activities of member units, including accounting work. However, due to the small number of personnel, the inspection is usually carried out only for units with signs of violations.

Most Vietnamese life insurance businesses have not fully invested in information security systems.

## 4. SOLUTION

Vietnam is towards a digital economy. The development of information technology combined with good accounting information systems will help businesses create innovation and support decision-making. This is especially important for the life insurance business in the context that Vietnam's life insurance market is growing well. To design an effective accounting information system in a life insurance business, businesses need to:

Firstly, to develop management accounting based on an accounting organization model that combines financial accounting and management accounting. According to this model, management accounting does not use a separate accounting system, separate from financial accounting, but uses detailed accounting accounts, a system of accounting books and general management accounting reports in a unified accounting system with financial accounting. Financial accounting uses general accounting accounts while management accounting uses detailed accounts, appropriate detailed accounting books, internal accounting reports and additional statistical methods, analytical methods... to systematize and process information. In addition, insurance businesses need to invest in training activities, improve professional qualifications as well as the level of information technology application, and update information about the accounting field for accountants, in the form of opening training courses, fostering, and sending for training.

Secondly, apply an ERP model based on cloud computing technology (Cloud ERP). Using Cloud ERP software solutions will help businesses save maximum management costs, and security, and be extremely flexible in operating and storing core data. In particular, Cloud ERP with artificial intelligence (AI) integration is becoming an increasingly popular trend. It can process large amounts of data from disparate sources and generate important information to support business decisions. With advanced data analytics of Cloud ERP, businesses can recognize trends, predict market needs, and devise strategies to optimize performance.

Thirdly, improve the content of the information collected and the process of providing accounting information. Based on the purpose of using the information to collect past information or future information, respectively, to create accounting reports suitable to information users. Input information is future information that can be used for planning purposes (estimates of insurance products, commission costs, surveys to survey market demand for insurance products), performance information (revenue – expense report, receivable report, payable report), information for control and decision making (revenue – expense report) according to business activities, reports of divisions, reports on assessment of market demand of products). Classification of input information including past information and future information helps AIS provide information at life insurers more effectively. From there, businesses can build a management accounting reporting system, including: A reporting system that provides information for planning, a reporting system for performance information, a reporting system that provides providing information for control, and the reporting system that provides information for decision-making.

Fourthly, build and maintain a scientific, appropriate and effective internal control system. Internal control aims at managing risks to ensure effective operations in the business. The process of controlling accounting information at insurance

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enterprises aims to assess the quality of accounting information to ensure that the information provided in AIS is useful to information users.

Fifthly, build an information security system. In the technology revolution 4.0, the risk of information theft is always present and information security is extremely important to businesses. Businesses need to set up a department dedicated to managing information systems. This department is responsible for planning and monitoring the functionality of the information system and establishing the information system policies to build the data security system.

### 5. CONCLUSION

Accounting plays an important role in the management tool system of enterprises. The important role of accounting is only promoted when enterprises have a scientific and effective accounting information system. Recommendations to improve the accounting information system are studied based on the research results on the current status of the accounting information system in Vietnamese life insurance businesses. Thereby contributing to improving the quality of accounting information and enhancing the reputation of life insurance businesses in the market.

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## Research on Vietnamese Attention in Aviation Insurance



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**ABSTRACT:** The article has clarified the theoretical basis of interest and aviation insurance products. The aviation insurance business is still underdeveloped while the aviation industry is an important factor in Vietnam's economic development, which makes aviation development unsustainable. To solve the research purpose set out, the research team conducted a survey on the understanding and perception of the benefits of aviation insurance products with 196 Vietnamese customers traveling by plane. The results of the data analysis show that the majority of people traveling by plane do not know about aviation insurance products. Many interviewees indicated that they knew that the cost of purchasing aviation insurance products was very high and that they knew through an aviation insurance product consultant. Respondents also said that aviation accidents rarely happen, so they see the benefits of this product are not high. In addition, based on descriptive statistical data of the survey results, the gender factor did not affect the understanding and perception of the benefits of aviation insurance products.

**KEYWORDS:** Attention, Aviation insurance, Benefits, Vietnam

### 1. INTRODUCTION

Aviation insurance is a type of property and casualty insurance specifically designed for airline operations. This insurance product helps customers eliminate potential risks associated with the aviation industry. Aviation insurance is for businesses involved in air transportation, it helps them manage risks and unexpected losses during air transportation. Aviation insurance for passengers and cargo is a type of insurance provided by non-life insurance companies in Vietnam. The form and benefits of insurance are regulated by each company differently, it is not widely available and is usually provided by international and domestic ticketing services. After many years of implementation, the revenue of the aviation insurance business is still very low, about 4%. There are many reasons why this business segment has not developed such as people have not much access to transportation by plane. The cost of using an airplane is still too high compared to the income of Vietnamese people, so they do not choose this form and of course, do not need to buy aviation insurance. The cost of buying aviation insurance is too high and the aviation industry is less prone to risks, which are also the reasons why customers are not interested in this product. The objective of this study is to examine Vietnamese people's interest in aviation insurance products. To accomplish this goal, we will conduct an understanding and assessment of the benefits of this product from the perspective of aviation service users. The results of the evaluation will clarify the issues of the research objectives and are presented in the content of this article.

### 2. THEORETICAL BASIS

#### 2.1. Attention

According to Britannica, interest is a process of focusing one's awareness on some issue and excluding the influence of other stimulating factors under subjective or objective projection [1]. In William James's Principles of Psychology document (1890), Interest represents the possession of the mind, which clearly and vividly expresses one of the objects in the stream of thought and it looks like it can happen at the same time. He also suggested that concentration of consciousness is the essence of interest [2]. Research by Anderson (2004) suggests that interest is described as the allocation of cognitive processing resources because it is very limited [3]. In this study, we explore and evaluate the interest in terms of understanding and identifying the benefits of Vietnamese people using air travel for aviation insurance products. Accordingly, knowledge is a form of perception or familiarity. This usually implies Vietnamese awareness of actual facts or skills, but it can also imply familiarity with an object or situation. Other commonly discussed sources of information include memory, rational intuition, reasoning, and testimony. When people gain product awareness, they will realize the importance of aviation insurance products and their impact on their lives.

## Research on Vietnamese Attention in Aviation Insurance

### 2.2. Aviation Insurance

Aviation insurance appeared in the early years of the 20th century. Aviation insurance policies were first written by Lloyd's of London in 1911. The company then stopped writing aviation policies in 1912 after a number of air accidents caused by bad weather made the policies written almost no longer relevant [4]. Aviation insurance is an insurance product specifically for the operation of aircraft and risks related to aviation. Airline product policies are distinct from those for other modes of transport and tend to incorporate the term aviation, as well as terms, limitations, and terms specific to cargo insurance [5]. According to the report of aviation insurance market indexes 2010/11 of Aon Risk Solutions (2010), there are many types of aviation insurance such as public liability insurance, Passenger liability insurance, Combined Single Limit, Ground risk hull insurance not in motion, Ground risk hull insurance in motion and In-flight insurance [6]. In the scope of this article, we focus our attention on aviation insurance products aimed at customers or in other words, products for vehicle users. Passenger liability insurance or In-flight insurance are the contents we use as the basis when developing survey questions.

### 2.3 Research Overview

Research by Maniraj (2020) on the influence of perceived service quality on customer satisfaction for airline policyholders in Malaysia. The author's article has identified service quality as an important factor that determines the competitiveness of enterprises when trading in aviation insurance products. With the objective of examining the impact of service quality on customer satisfaction using aviation insurance products in Malaysia. The author uses Parasuraman's SERVQUAL model to study 120 samples selected from scheduled, non-scheduled airlines. The author analyzed the data using Structural Equation Modeling (SEM). The results of data analysis show that five service quality variables including tangibles, responsiveness, reliability, empathy and assurance, significantly affect customer satisfaction. Aviation insurance in Malaysia. The author believes that the intermediary factors that form the claims do not affect customer satisfaction. The author's research has important implications for aviation insurance service providers, including brokers, aviation insurance and reinsurance companies in improving their quality. 7).

Research by Hicks (2016) to understand claims and controversies in airline insurance. The author recognizes that there are many controversies when dealing with aviation insurance benefits between suppliers and customers. The author believes that the insurance contract is a type of contract that requires thoroughness and clarity, so the overarching purpose and proposed changes in this insurance policy and the changes currently used are binding. The insured must carefully consider what his insurance needs. Insurance companies always ask customers to confirm these things with the insurance company to avoid future disputes. Dispute when an insurance event occurs to a customer purchasing an aviation insurance product when the insurance company believes that the buyer misunderstood the coverage. The author believes that insurance policies are written by insurance companies and not for policyholders, so when filing a lawsuit, the argument is always bad for insurance companies. The insurer must prove that the insured has not misunderstood or that the insurance company has not misrepresented the coverage. Therefore, the obligation of customers to sign and confirm that they understand the terms of aviation insurance is included in all insurance declaration documents.

Research by Flouris et al, (2009) determines the relationship between risk assessment and insurance with the development of the aviation industry in recent years. According to the author, the aviation industry has been continuously hit hard in recent years. Many factors contribute to the industry's predicament. The 2001 US plane terrorist event caused insurance premiums to increase with many fluctuations. Advances in aviation technology and improving aircraft safety have been emphasized by airlines over the years. These changes have improved aircraft safety which has reduced accident rates for commercial aircraft, but the aviation insurance market remains volatile. The author provides an overview of how the aviation insurance industry works and how it has changed in recent years. The author's article explored how risk is shared among insurance companies, how insurers treat acts of intentional violence, and finally, how insurers evaluate risk [9].

Ochwada's study compares airline insurance with the rest of the Kenyan non-life insurance sector (2018) to see if airline insurance has a perceived risk and compares it with other forms of non-life insurance. The author said that the insurance industry is booming in Kenya, and people are scrambling to buy insurance policies to protect their property, health and loved ones in the event of their death. The amount of premium charged for a certain type of insurance differs from one type of coverage to another due to the difference in risk factors. For the airline industry, aircraft type, pilot experience as well as related business (passenger/cargo). The author has completed the goal set out in the article, the results show that the risk of aviation insurance is different from the perception. Other types of life insurance carry a higher risk [10].

The business of aviation insurance products at Vietnamese life insurance enterprises has not yet developed like other types of insurance products. Transferring most of the aviation insurance revenue to foreign companies is the way Vietnamese insurers are applying. In a number of studies on aviation insurance related to the research content presented above, we find that there is little mention of this issue in Vietnam. When the author's team searched for documents on aviation insurance and customers using

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aviation insurance products, there were no matching results. The reason may also be that the market is not developed, so it has received little attention from researchers. Therefore, the authors carried out a practical study to determine the knowledge of Vietnamese people traveling by plane and their interest in aviation insurance products.

### 3. METHODS

Methods of document research. The research team used this method to review previous studies to draw and develop a theoretical basis for interest and aviation insurance. The practical research methods used are the sociological investigation method and the meta-analytical method. With the sociological survey method, the research team used questionnaires and questionnaires to collect, synthesize and analyze the Vietnamese people's understanding and interest in aviation insurance products. Using a convenience sampling method, survey participants were selected at the airport lounge and area. The results collected 196 questionnaires for this analysis. The content of the survey is related to assessing the understanding of the participants, the duration and benefits of insurance and the costs to be spent when using aviation insurance products. After evaluating the product knowledge, the research team explores the perceived benefits of air travel users with aviation insurance products. Finally, the research team uses the method of analysis and synthesis: analyzing and synthesizing data collected from primary and secondary data sources. Use software to analyze data. This method helps us to assess the level of understanding Vietnamese people have about aviation insurance products and whether they want to use the product for its benefits.

### 4. RESULTS

#### 4.1. Business results of aviation insurance products in Vietnam

The aviation industry is a low-risk passenger transport industry, but when a risk occurs, it will lead to a series of serious damage to people and property. As we have noted, aviation insurance is developing slowly and has not received the attention of the Vietnamese people. The revenue growth rate of aviation insurance in 2020 was negative due to the strong outbreak of the Covid-19 epidemic in many parts of the world. A series of flight routes were closed and compensation for flight costs made compensation costs 30% higher than revenue. However, after the economy recovered, sales of this product did not have a breakthrough. In 2022, the revenue growth rate will only increase by 5% compared to 2021 and account for only 1.5% of the total revenue of the entire non-life insurance market in Vietnam.

**Table 1. Overview of the aviation insurance market in Vietnam**

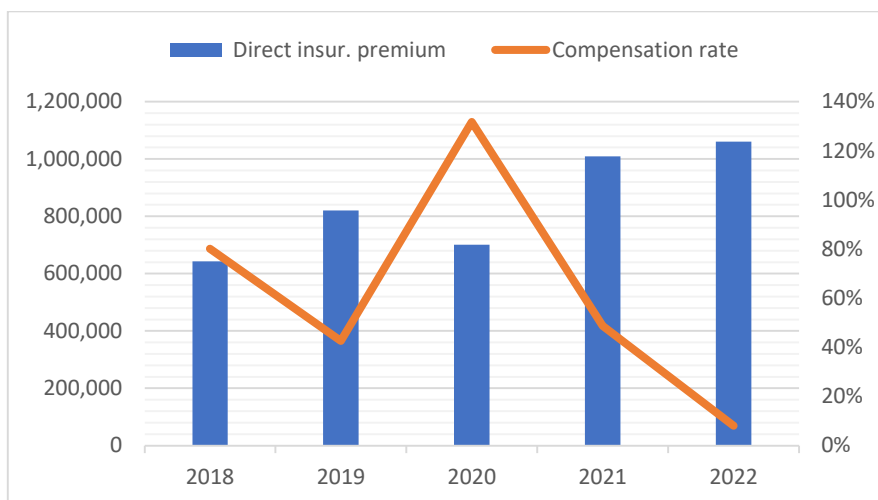
Unit: million VND

Targets	2018	2019	2020	2021	2022
Revenue	642,798	820,361	700,796	1,009,458	1,060,377
Proportion	1.38%	1.55%	4.01%	1.74%	1.5%
Revenue growth rate	3.13%	27.62%	-14.57%	44%	5.0%
Indemnify	515,485	349,546	923,131	492,410	85,672

Source: Insurance Association of Vietnam

Most of the mining fees in the total mining revenue are ceded to foreign enterprises because domestic enterprises are not financially able to guarantee. Looking at Figure 1, the fee revenue and the insurance rate of insurance claims, we can see that this insurance rate is not stable. In 2018, the claim rate is as high as the premium revenue and in 2020, the claim rate is 30% higher than the premium revenue. If it is said that 2020 is affected by the Covid-19 epidemic, 2018 is a year of stable economic development. And another example of the instability in the compensation costs of this industry is that in 2022, the compensation rate is less than 10% compared to fee revenue, or 2019 is also the year affected by the epidemic, but the rate of compensation is less than 10% compensation is less than 40%. It is this instability that makes insurance businesses do not focus on developing and investing in aviation insurance product business.

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**Figure 1. Fee revenue and indemnity ratio of the aviation insurance industry**

**Unit: million VND**

**Source:** Insurance Association of Vietnam

### 4.2. Analysis of sample characteristics

We chose to explore some characteristics of survey participants that we believe influence the understanding and perception of benefits brought by aviation insurance products. Those characteristics are Gender, Age, Education level and Income. The basis for determining the answers to our questions is the results of the survey on the living standards of the Vietnamese people conducted by the General Statistics Office and the age group is determined based on the ability to generate income. Similarly, we have collected results on the characteristics of the study sample. Accordingly, there are 101 men participating in the survey, accounting for 51.5% and women accounting for 48.5%. The age of Vietnamese airliners participating in the survey was mainly in the group over 22 years old and the most concentrated in the group From 30 to 60 with 45.9%. We believe that the surveyed age of using aviation services is completely consistent with the reality in Vietnam. Subjects who have participated in the labor market for a long time have a greater likelihood of exposure to this medium. In terms of educational attainment, the majority belongs to the University group with 77 survey participants, accounting for 39.3%. The high school group is the group with the lowest number of survey participants with 15 people, accounting for 7.7%. Finally, the survey participants' income information. Our aggregate results show that the group of people with income from 5.96 to 10.23 million VND/month accounted for the highest proportion with 71 survey participants and 36.2%. In general, the survey results on the characteristics of customers using aircraft services are appropriate and close to the actual situation.

**Table 2. Statistics of the number of agents by characteristics**

Criteria		Quantity	Percent
Gender	Male	101	51,5
	Female	95	48,5
Age	Under 22	26	13,3
	From 22 to 30	34	17,3
	From 30 to 60	90	45,9
	60 or more	46	23,5
Education level (Edu)	High school	15	7,7
	College	54	27,6
	University	77	39,3
	Graduate	31	15,8
	Other	19	9,7
Income	Under 3.86 million VND/month	8	4,1
	From 3.86 to 4.67 million VND/month	22	11,2
	From 4.68 to 5.95 million VND/month	55	28,1
	From 5.96 to 10.23 million VND/month	71	36,2
	Over 10.23 million VND/month	40	20,4

**Source:** Analysis of survey data

## Research on Vietnamese Attention in Aviation Insurance

### 4.3. Knowledge of aviation insurance

To assess the content of knowledge of customers participating in air travel, we assessed through two questions "Do you understand the subject, insurance period and benefits when participating in aviation insurance?" and the question "Do you understand that the cost of buying airline insurance can be equal to the price of an airline ticket?". The results of the investigation and analysis of these two questions are presented in turn below.

Firstly, with the survey question "Do you clearly understand the subject, insurance period and benefits when participating in aviation insurance?". The results showed that 7 survey participants chose the Very unintelligible option, accounting for 3.6%. The number of respondents who chose this option the most with 109 options was Not understand, accounting for 55.6%. The answer option is well-read with 43 people, accounting for 21.9%. Finally, with 37 choices, accounting for 18.9% belongs to the Intellectual option. Looking at this result, we see that the majority of people traveling by plane do not know about aviation insurance products. Many people over 60 years old and some people in other age groups even answered that they were completely unaware of this product.

**Table 3: Results of the product knowledge survey**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unintelligible	7	3.6	3.6	3.6
	Not understand	109	55.6	55.6	59.2
	well-read	43	21.9	21.9	81.1
	Intellectual	37	18.9	18.9	100.0
	Total	196	100.0	100.0	

Source: Analysis of survey data

Secondly, with the survey question "Do you understand that the cost of buying airline insurance can be equal to the price of an air ticket?". The results showed that 21 people chose the Very unintelligible option, accounting for 10.7%. In second place is the option of Not understand with 51 people with a rate of 26%. Selecting the well-read option has 34 people, accounting for 17.3%. The last option is that Intellectual has the most choice of 90 people with a rate of 45.9%. As can be seen, many people traveling by plane know that the cost of aviation insurance products is quite high and can be as high as or higher than the airfare they use. Although they know about the cost of insurance products, they do not know about the product, is it because the price of insurance products is too high, so they have absolutely no intention of buying, so they are not interested in information about aviation insurance? In addition, when we exchange information with respondents, we know that "airline insurance product cost information" is known mainly when they buy tickets and receive advice on aviation insurance products.

**Table 4: Understanding the Cost of aviation insurance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unintelligible	21	10.7	10.7	10.7
	Not understand	51	26.0	26.0	36.7
	well-read	34	17.3	17.3	54.1
	Intellectual	90	45.9	45.9	100.0
	Total	196	100.0	100.0	

Source: Analysis of survey data

### 4.3. Assessing the benefits of survey participants on aviation insurance

To evaluate the perception of benefits of survey participants about aviation insurance, we use the survey question "Do you think that aviation insurance brings peace of mind and benefits when using aviation insurance?". The survey results showed that 21 respondents chose to disagree, accounting for 10.7%. 48 opinions chose the Disagree option, accounting for 24.5%. Normal opinion selection has 54 turns, accounting for 27.6%. With 61 votes and a 31.1% rate of Agree. Finally, choose Very agree with 12 comments, accounting for 6.1%. Looking at this result, we see that 37.2% of the two options agree that aviation insurance brings peace of mind and benefits when used, but more than 60% disagree or be normal with this. The cause can also be as we have

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stated, aviation accidents rarely happen, so users consider the possibility of having a very small risk. Therefore, when considering the possibility of risks and costs being too great, they chose not to use aviation insurance.

**Table 5: Assessment of benefits of aviation insurance**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	21	10.7	10.7	10.7
	Disagree	48	24.5	24.5	35.2
	Normal	54	27.6	27.6	62.8
	Agree	61	31.1	31.1	93.9
	Very agree	12	6.1	6.1	100.0
	Total	196	100.0	100.0	

Source: Analysis of survey data

## 5. DISCUSSION

Through the above data analysis, we can see that the understanding of aviation insurance products in Vietnam is still low. The majority of people surveyed do not appreciate the peace of mind and benefits brought by airline insurance. From the analysis of this survey data, we can see some points as follows:

Low- and middle-income people in Vietnam have not used air travel much because the airfare is too high compared to their income. At the same time, this target group is not interested in aviation insurance.

The group of people with above-average incomes and those with economic conditions often have a higher understanding of aviation insurance products, but the number of people using this type of insurance is still quite low because they assess the possibility of risks. The risk is very small, so they think that buying airline insurance is a big waste.

The elderly group also rarely buys this product even though many have economic conditions. The reason is said to be that the saving culture of Vietnamese people and the elderly are still greatly affected by difficult times, so they spend very carefully and thriftily.

The gender factor did not affect the understanding, interest, and benefit perception of aviation insurance products. In contrast, the educational level factor has a large influence on this. Survey results have shown that most people with a high level of education often understand and perceive aviation insurance products as bringing many benefits.

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## Tomato Fruiting Quality Prediction Using Hydroponics and Machine Learning



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**ABSTRACT:** The tomato fruiting quality prediction using hydroponics and Machine Learning (ML) focuses on improving tomato quality under a micro-climate setting with the use of various sensors to monitor and analyze the parameters that affect the growth of tomato. This study employed various algorithms such as k-nearest neighbor (KNN), support vector machine (SVM), decision tree, linear regression, and random forest (RF) to find the most appropriate supervised ML algorithm in predicting the tomato fruiting quality. The Random Forest algorithm performs better than the other four ML algorithms at predicting the quality of tomato fruit in the microclimate setup. The RMSE of the Decision Tree is 0.089, the absolute error is 0.040, and the squared correlation is 0.675.

**KEYWORDS:** Cherry Tomato; Fruiting Quality Prediction; Hydroponics; Machine Learning; Photoperiod

### I. INTRODUCTION

Tomatoes are one of the most profitable crops in the Philippines and are widely grown around the world [1]. However, tomato production is characterized by extreme seasonality. In the dry season, there is abundant supply for tomatoes but in the wet season, yield is low, hence, there is limited supply in the market with poor quality of produce that contributes to severe price fluctuations [2]. Cherry tomatoes are packed with vitamins and offers numerous health benefits such as prevention of stroke and prostate cancer [3]. Despite of that, cherry tomato production faces different pest and disease problems, particularly bacterial wilt which reduces yield [4].

Hydroponics is a soil-less way of cultivating crops in water, as one of the potential agricultural approaches. It provides various opportunities in agriculture, particularly in locations coping with issues such as uncontrollable soil deterioration and limited water supplies. Furthermore, this agricultural practice demonstrates excellent results towards an environment-friendly and user-friendly farming and a reliable tool to address food security [5].

Temperature, humidity, water levels, NPK (nitrogen, phosphorus, and potassium) sensors and automatic irrigation are the most important factors in agricultural productivity, growth, and quality [6]. In connection with the advent of big data technologies and high-performance computing, ML has emerged to create new possibilities for data-intensive science in the multidisciplinary Agri-technologies domain [7]. Farm management systems are turning into real-time artificial intelligence enabled programs that provide comprehensive recommendations and insights for farmer decision support and action by using ML to sensor data [7] [8].

Nowadays, plant growth is a complex and dynamic environmentally linked system. Therefore, growth and yield modeling are significant scientific challenge to develop systems that analyze a vast and complex data to make better decisions [9].

ML is the foundation when it comes to artificial intelligence and big data analysis. It provides powerful algorithms that are capable of analyzing, generating patterns, classifying data, and make prediction by itself to perform a specific task like better crop growth [10]. In recent years different ML techniques have been implemented to achieve accurate plant growth, yield, and production prediction for different crops. The most successful techniques are Artificial Neural Networks (ANN), Support Vector Regression (SVR), M5-prime Regression Trees, RF, and KNN [11] [12] [13]. Data intensive approaches allow better decision-making, greater efficiency, and reduced waste while minimizing negative effects for the environment [14].

Compared to laboratory settings, greenhouses can be challenging environments for image analysis, as they are often optimized to maximize crop production thereby imposing restrictions on the possible placement of a camera and thereby its field of view. Further, variation in the colors or brightness of the fruits can be encountered over different plants of the same

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crop, over time for the same plant, over images of the same plant from different camera positions, etc. [14]. Repeated measurements are difficult because of ongoing work, changing circumstances such as lighting conditions, and an unfriendly atmosphere for electronic equipment.

Most methods for detecting and counting fruits, including tomatoes, have used color space transformations in which the objects of interest stand out, and extraction of features such as shape and texture [14]. In most of these works, the discriminative features were defined by the developers, rather than learnt by algorithms. Computer vision solutions based on hand crafted features may not be able to cope with the level of variability commonly present in greenhouses [15].

Motivated by the above difficulty, the purpose of this study is to predict the tomato fruiting quality with the use of various sensors like pH sensor, humidity sensor, temperature sensor, conductivity sensor, and photosynthetic light sensor. Furthermore, various ML algorithms will be used to determine the cultivation and fruiting quality of tomatoes in a controlled environment setup. It includes growing light to substitute the natural sunlight, peristaltic pump will automatically correct the pH and nutrient content of water solution, ultrasonic mister to increase the humidity, and Peltier cooler to automatically adjust the temperature of nutrient solution. Lastly, determining the significant difference between the prediction and actual yield is vital in this research process to develop a best system that will enhance the current tomato production.

## II. METHODOLOGY

### A. Research Design

This study used experimental research design which include the definition of objectives and the included variables, planning, designing the process, experimentation procedure, modelling, interpretation of results, and conclusions.

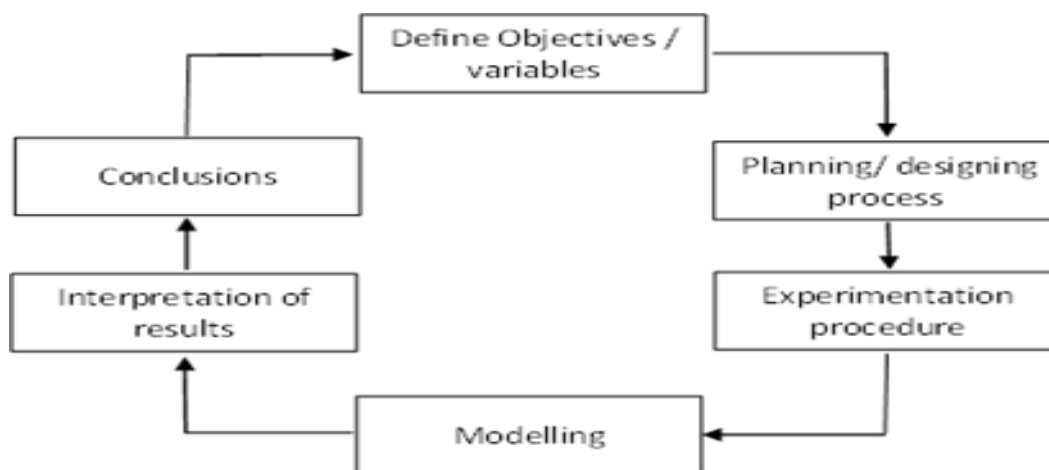


Fig. 1. Experimental Research Model

### B. Prototyping Model and System Design

The hardware components of the study are mainly composed of devices and sensors that are used for tomato micro-climate hydroponics system, and an end device that will display the status and quantitative predictions of the ML algorithms. The detailed architecture of automated micro-climate hydroponics system is shown in Figure 2. The system will employ pH, temperature, humidity, salinity, and photosynthetic light level. It is used to gather the parameters measured by the sensors and automate the system using the peristaltic pump for nutrients, an ultrasonic mister for humidity, and artificial light using growing lights.

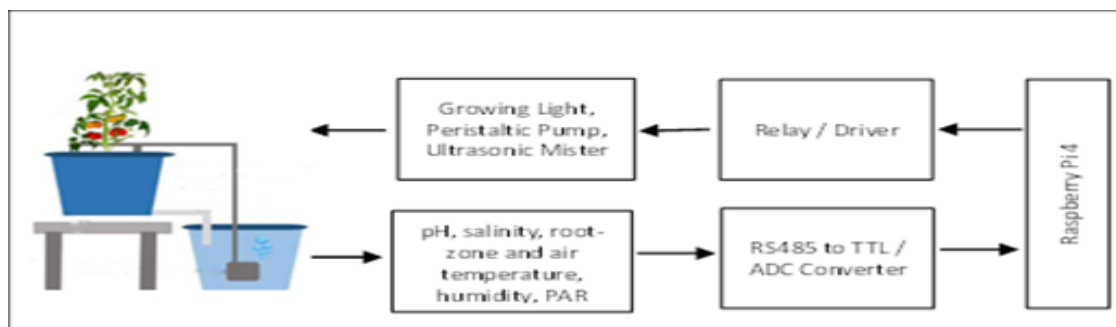
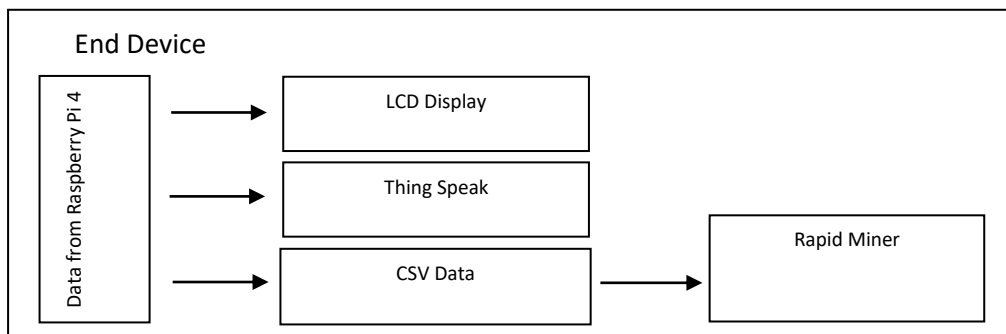


Fig. 2. Architecture of Automatic Micro-climate Hydroponics System



### Tomato Fruiting Quality Prediction Using Hydroponics and Machine Learning

In this study, the use of purified water samples for analysis is used, moreover, the use of rainwater or distilled water will be considered for DWC. The value of air temperature will be maintained at 18.3 °C to 32.2 °C and root zone temperature of 23°C to 27°C with a relative humidity that is always higher than 60% [16]. The Nutrient Solution (NS) can be bought premixed based on quantity requirements [17]. The formulation for the NS should be crop targeted and optimal. NS was added for hydroponic tomato crops and the volume of the NS was measured with the help of a peristaltic pump. The amount of nutrients, salts, or impurities, in the water, is referred to the Electric conductivity (EC) limit. For maintaining optimum levels of EC, the researcher set up the EC to levels (1400 ppm to 3500 ppm, note that these values can vary for different crops).



**Fig. 3. End device that will display the status and quantitative predictions of the machine learning algorithms**

The end-device that will display the status and quantitative predictions of the ML algorithms is shown on Figure 3. This end device is connected to a server that process and store the data from the sensors hydroponic system. Since supervised ML algorithms are used for this study, human intervention will be used to place the quality parameters of the tomato that corresponds to the sensed data.

The evaluation criteria for the quality of tomato fruits are presented in Table I. Meanwhile, the total quantity of the tomato fruits accumulated in the prototype is measured in mm. The total number of harvests and quantity of the harvested tomato fruits will be iterated based on the previous scenario of harvests. Both daily harvest and total harvest are measured in mm.

**TABLE I. Tomato Quality Parameters**

Parameter	Average size in mm	Color	Disease
Quality			
Grade 2	25 mm to 35 mm	Red (Ripe), Light Red, Green	0
Grade 1	<25 mm	Red (Ripe), Light Red, Green	0
Grade 0	Any size	Red (Ripe), Light Red, Green	1

\*red - more than 90% of the tomato surface is red in color

\*light red - 60% of the tomato surface show pinkish-red or red, provided that not more than 90% of the surface is red

\*green - surface of tomato is completely green in color

### C. Establishment of a Predictive Model for Tomato Fruiting Quality Prediction

## Tomato Fruiting Quality Prediction Using Hydroponics and Machine Learning

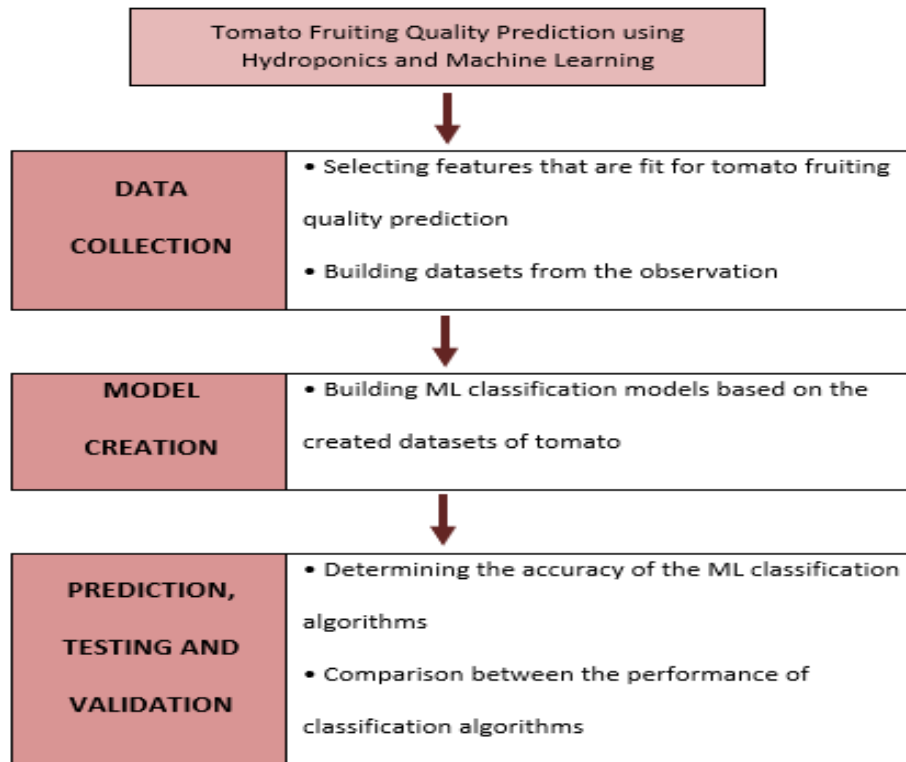


Fig. 4. Predictive Model for Tomato Fruiting Process Flow

- **Data Collection.**

The process of creating a predictive model for tomato fruiting quality prediction begins with data collection. The requirement analysis for the sensor will be refined in detail. These established guidelines will be used in the design of the system. Through the experiments, the researcher aims to adjust the parameter based on the production of tomato in normal settings to determine the best variables, labels and method needed in establish data sets for the ML

- **Model Creation**

Observations will be conducted to carry out the creation of datasets. As the values of the selected parameters are obtained using the sensors, human intervention will be utilized to input corresponding labels for the model. The labels will be marked based on the direct observation of the researcher. After collecting enough number of datasets, ML classification models will be created.

- **Prediction, Testing, and Validation**

The performance of the tested ML algorithms in this study and the comparison of the quantitative prediction is observed using the descriptive research methodology.

### III. RESULTS AND DISCUSSION

The overall status of the design project was evaluated based on its functionality in accordance with the set evaluation process. The presented data below discusses the summary of the microclimate environment, and quality performance of the GUI and ThingSpeak to print the values. The measures used to evaluate the performance of five regression Machine Learning algorithms and comparisons are also shown.



**Fig. 5. Prototype of the Microclimate Setup**

### A. Performance of the ML Models for Tomato Fruiting Quality Prediction

Table II shows the performance of the five regression ML on training and validation datasets based on Root Mean Square Error (RMSE), absolute error and squared correlation. Both Random Forest model and Decision Tree algorithm reveals lower RMSE and absolute error, and higher squared correlation in predicting the features used in describing the quality of Tomatoes in 10-fold cross-validation. Among all the quality parameters, the performance of the DT in predicting the quality of the Tomato in the micro-climate setup in terms of the three given metrics is better. However, the performance of SVR model in predicting the quality exhibits larger values on error metrics and smaller value on squared correlation.

All regression machine learning algorithms reveal that DT algorithm provides the smallest values of RMSE and absolute error, as well as the highest squared correlation compared to the other models.

**TABLE II. Comparison of the Performance of Five Regression Machine Learning Algorithms in Fruiting Quality of Tomato**

Machine Learning Algorithm	RMSE	Absolute Error	Squared Correlation
Linear Regression	0.415	0.267	0.548
Support Vector Machine	1.019	0.881	0.198
k-Nearest Neighbor	0.278	0.154	0.618
Random Forest	0.192	0.118	0.696
Decision Tree	0.089	0.040	0.675

Figure 6 shows the performance of the five regression ML on 10-fold cross-validation datasets based on Root Mean Square Error (RMSE), absolute error, and squared correlation. It is clear from Figure VI that the Decision Tree Model algorithm performs better than the other four ML algorithms at predicting the quality of tomato fruit in a particular microclimate setup. The RMSE of the Decision Tree Model technique is 0.089 the absolute error is 0.04, and the squared correlation is 0.675. The SVM method has the lowest squared correlations among the five models. The squared correlations of the four machine learning, on the other hand, are very high. However, with 0.675 squared correlation, Decision Tree performs well followed by Random Forest in forecasting quality.

## Tomato Fruiting Quality Prediction Using Hydroponics and Machine Learning

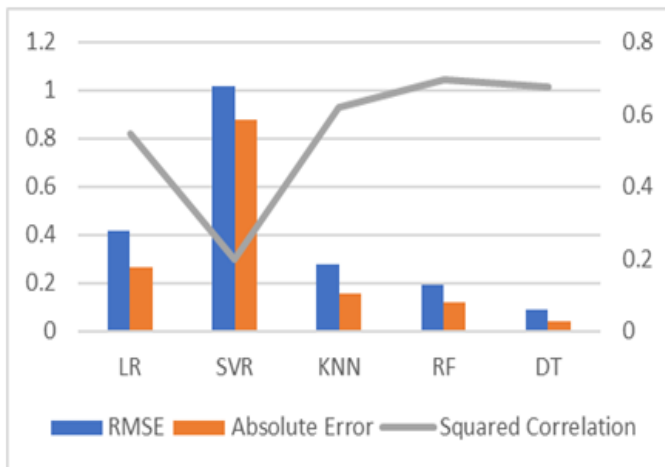


Fig. 6. Comparison of ML Algorithms in Fruiting Quality of Tomato



Fig 7. Actual and Predicted Values for Quality Parameters

Meanwhile, in terms of actual prediction, among all parameters, the average of the predicted values obtained using RF and DT algorithms is closest to the average of the actual values quality parameters see Figure 7.

## IV. CONCLUSION AND RECOMMENDATIONS

### A. Conclusion

1. From the dataset collected, average humidity measures 63.76 %, the average water temperature is 25.0°C, pH value of 5.5, average PAR value is 402 micromole/m<sup>2</sup>s, average air temperature is 25.0°C, and average TDS value of 2086.12 ppm. The mentioned combination of controlled environment parameters yields continuous growth in the tomato and first harvest happens in Day 59. The total harvest obtained in 8 hours photoperiod is 283.4g, in 12 hours photoperiod is 1087.7g, and in 16 hours photoperiod is 1994.1g.
2. The squared correlation of the quality indicators 0.675 implying that the Decision Tree model used in predicting tomato fruiting quality indicators fits the data well.
3. Linear regression and k-NN gives fair performance on all parameters while SVM performs poorly in predicting quality of tomato, RF performs fairly in predicting all of the parameters.

### B. Recommendations

Generally, the study showed the success of tomato fruiting quality prediction using hydroponics and machine learning. The problems and concerns discussed in this research were solved with accuracy and reliability. The following are the recommendations based on the result of findings and conclusions.

1. More datasets must be created to get more precise results in quality prediction.
2. Based on the collected review of related studies, the micro-control environment's temperature, humidity, PH, and TDS were declared constants, while the photoperiod was treated as a variable. Data cleaning, also known as feature selection, was used to eliminate unnecessary data from the data sets. It is advised to have more than three cycles in the future research as these factors are important in the investigation process of its significant relation to predict the tomato fruiting quality.

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## Facial Recognition Technology and Racial Discrimination a Study on the Design of On-Demand-Asynchronous Video Interview Solutions Used in Recruitment



Evans Uhunoma

**ABSTRACT:** 7% of people of colour in the UK are unemployed as compared to 4% for whites (UK Gov, 2021). While recent breakthroughs in face recognition technology (FRT) have enhanced the process of recruitment through the use of on-demand-asynchronous video interview solutions (Tambe, et al., 2019; Harwell, 2019; Nawaz, 2020), several other studies have however confirmed that FRT and its application in recruitment activities are biased towards people of colour (Izario et al., 2017; Buolamwini, 2019; Simonite, 2019). Consequently, this is predicted to lead to an increased diversity crisis within the workplace as the employment of people of colour may even lessen further (West et al., 2019). The aim of this dissertation was therefore to understand how on-demand-asynchronous video interview solutions (ODAVIS) capture peculiarities in faces. Specifically, how creators of FRT determine candidates' suitability for jobs using FRT's facial analysis, if the data used to train their model is representative of the faces in the world and what reasonable adjustments (if any) are made for people of colour. The major findings include the use of facial landmarks and gaze estimators to analyse candidates' facial expressions and emotions during interviews, the use of non-representative training data that leads to inconsistency in performance, and the inclusion of certain adjustments (like automatic flashlights, data augmentation or bias audit) during the designs of the solutions and implementation, to close the gaps of inconsistent performance observed for different races.

**KEYWORDS:** Facial Recognition Technology (FRT), On-Demand-Asynchronous Video Interview Solutions (ODAVIS), People of Colour (POC).

### INTRODUCTION

#### 1.1 Background of Research

In recent years, there have been significant breakthroughs in the application of technology and artificial intelligence (AI) in the field of human resources (HR). These breakthroughs are transforming the HR field altogether and creating numerous opportunities for businesses to rethink their human resource procedures (Ahmed, 2018). Accordingly, one of the major applications of AI in HR practice today is the use of automated tools to determine a candidate's employability based on face recognition technology (Tambe, et al., 2019; Nawaz, 2020). Through candidates' cameras, facial movements and expressions can be analyzed during an interview, after which a behavioural profile (strengths and weaknesses of the candidate) is generated, 'before ranking them against other applicants based on an automatically generated employability score' (Harwell, 2019, p.2). The facial recognition technology (FRT) tools adopted by companies to do this, is called on-demand-asynchronous video interview solutions, referred to as ODAVIS throughout this dissertation.

The major challenge however is that it is unsure how FRT examines differences in faces, specifically for different races (Merler et al., 2019). This is particularly problematic because the report generated from the solution becomes a basis through which the suitability of candidates for jobs is decided (Izario et al., 2017). And as many other authors believe, FRT and its application in the workplace may consequently worsen diversity-related issues, such as discrimination against certain races, women and neurodivergent people (Tambe et al., 2019; Buolamwini, 2019; West et al., 2019; BBC, 2022). This dissertation however focused on racial discrimination.

#### 1.2 Problem Statement

Several studies have confirmed that AI and FRT are biased towards people of colour (Tambe et al., 2019; Buolamwini, 2019; West et al., 2019). Simonite (2019) opined that even the best algorithms have trouble recognising black faces. However, not much study has been done to understand how creators of FRT, program ODAVIS to generate candidates' behavioural profiles just by analysing their faces and if certain considerations or reasonable adjustments are made for people of colour where inconsistency in the

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performance of the solution are observed. In addition, not so much has also been done to find out if FRT developers train their models with data that are representative of all races. Consequently, this study's focus is not to confirm or negate if FRT is discriminatory to certain races but to understand how creators of FRT determine candidates' suitability for jobs just by analysing their facial movements, if the data used to train their model is representative of the faces in the world and what reasonable adjustments (if any) are made for people of colour where inconsistencies are observed.

### 1.3 Research Aim, Objectives, and Questions

**Aim:** To understand how face recognition technology captures peculiarities in faces when using ODAVIS for hiring.

**Objectives:**

- a) To understand how creators of FRT determine candidates' suitability for jobs just by analysing their facial movements and expressions.
- b) To find out if the training data used for FRT models are representative of the face distribution found in the real world.
- c) To identify considerations/reasonable adjustments (if any) FRT creators put in place to mitigate bias towards people of colour.

**Questions:**

- a) How do creators of FRT determine candidates' suitability for jobs just by analysing their facial movements and expressions?
- b) Do FRT developers use training data for FRT models that are representative of the face distribution found in the real world?
- c) What considerations/reasonable adjustments (if any) do FRT creators put in place to mitigate bias towards people of colour?

### 1.4 Dissertation Structure

The structure of this dissertation was divided into five chapters. **Chapter one** introduced the research and defined the objectives. **Chapter two** reviewed the relevant literature cutting across theories and previous studies on the subject. **Chapter three** discussed the methodology employed and issues around the ethical considerations made. **Chapter four** presented and discussed the key findings with a focus on answering the research questions. **Chapter five** summarised the dissertation, reflected on the limitations and presented some practical recommendations to companies.

## LITERATURE REVIEW

### 2.1 Introduction

This chapter discussed the major theories and previous studies relevant to this dissertation. It started with a brief description of the facial recognition technology and its application in the field of HR, after which the subject of racial discrimination was briefly discussed. Other discussions and analyses in this chapter were on the relevant theories, previous research and identified research gaps.

### 2.2 Facial Recognition Technology: Applications in HR and Challenges

Artificial Intelligence, otherwise called AI, coined by John McCarthy in 1955 (Doug, 2018) refers to a set of technologies, through which a computer system can execute instructions that would have typically required human intelligence (Tambe et al, 2019). It cuts across several automated activities and applications such as image processing, natural language processing (NLP), robotics, facial recognition technology (FRT) and machine learning (Lee et al, 2018). This suggests that FRT, the focus of this dissertation, is one of the major application areas of AI. According to RecFaces (2021), FRT simply means a collection of algorithms (a set of instructions), used to recognise people in photos or videos. That is, through an FRT tool, an individual can be recognised from a multitude of other people. This has become an opportunity for many businesses to carry out some of their video/imagery-inclined activities that typically would have involved human labour today (Nawaz, 2020). Consequently, FRT is now being applied in many industries today, like health, security, and schools and also in business and HR-related activities such as teleconferencing, ID checks, attendance marking, building access and smarter advertising (Faux and Luthon, 2012; Forbes, 2022).

#### FRT Application in Human Resources

Facial recognition technology is also applied in human resources management today. Tambe, et al. (2019) noted that one of the major applications of AI and facial recognition technology in HR practice today is using it as a recruitment tool. For example, one of the breakthroughs of a top car manufacturer was the use of FRT to evaluate candidates, through their appearances and facial expressions. Candidates are questioned about their expertise and experiences through the central touchscreen of the car. After the interview, the AI evaluates the candidate's credentials, drive, and social skills using the data acquired. Based on that, it produces an evaluation report that is automatically sent to the human resources division (Jo, 2018). Masud et al. (2020) also opined that through FRT, human and computer collaboration has been enhanced to make selection more seamless for recruiters. HireVue for example is one of the leading facial recognition technology development companies, whose ODAVIS, various companies use to carry out their interview activities (Izario et al., 2017). Through candidates' cameras, facial movements can be

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analyzed during an interview which forms part of the input for hiring decisions (Harwell, 2019). There are several other similar products used to automatically select candidates through the application of FRT and other AI. They include but are not limited to VidCruiter, Spark Hire, Arctic Shores, Easy Hire and many more (Capterra, 2022). An ODAVIS simply put, is when technology, rather than a traditional interviewer, facilitates pre-determined questions (Sabel, 2018). The technology simply asks the candidate questions, which they are to give responses, while the technology monitors their facial expressions, eye contact and manner of speaking. The rationale of the solution is that it helps decide the best candidate by analysing the applicant's looks and languages, identifying their speaking style, as well as how they respond to each inquiry (Izario et al., 2017; Black and Esch, 2020). This suggests that the use of the FRT tool has made recruitment more seamless for many organisations, as it saves them time, energy, money, and supposedly even helps them select the best candidates.

### **Challenges of Applying FRT in HR**

Although the application of FRT in video interviews has gained so much acceptance over the years, especially with the high adoption from several large companies such as Shell, Unilever, and NHS (Recruiter, 2019; H2B, 2019; Shell, 2022), there have also been several challenges. The primary reason for this is that FRT aims at detecting and understanding human facial features, which comes with various difficulties (Merler et al., 2019). This is because every face has distinct features that make it different from others. And while “computers may be good at following rules, they are bad at pattern recognition” and distinguishing such features (Brynjolfsson and McAfee, 2014, p.4). The features are difficult to distinguish due to the individual morphological differences in the face such as the colour of the eyes, the shape of the nose, and most importantly the skin colour and tone (Faux and Luthon, 2012). This essentially is where the issue of discrimination and unfairness creeps in. One of the leading development companies of ODAVIS for example has been the target of major criticism as many believe it is highly discriminatory towards certain people (Kahn, 2021). Merler et al. (2019) nevertheless argued that recent breakthroughs in neural networking and data-driven deep learning have improved the accuracy of FRT to efficiently identify those morphological distinctions.

### **2.3 Racial Discrimination**

Discrimination in the workplace is the practice of making unwarranted disparities or biased judgements about people, that cannot be substantiated by facts but are made due to the social group they belong to (Kumra and Manfredi, 2012). There are various types of discrimination. In the UK, the Equality Act (2010) covers 9 protected characteristics which when unwarranted disparities are made based on can be seen as discriminatory. They are age, disability, sex, gender reassignment, sexual orientation, race, religion & belief, pregnancy & maternity, and marriage and civil partnership. The focus of this dissertation is on racial discrimination.

### **Racial Discriminations in Interviews**

Issues of discrimination in the application of FRT in the selection of candidates have gotten so much attention lately (Zhao et al, 2017; Lohia et al, 2018; West et al, 2019). It is particularly problematic because the outcomes of the decisions made by the FRT, as in the case of video interviews, can determine who gets hired (Tambe et al, 2019). This, therefore, signals a potential diversity crisis in the workplace, because if some groups can't even be hired by the selection tool, then how would the workplace be diverse? This partly also explains why the unemployment rate for people of colour (POC) is 7% as compared to 4% for white (UK Gov, 2021). Still, while these discriminatory issues encountered by FRT in video interviews and other AI applications in HR generally affect different groups, unfortunately, the discriminatory repercussion is not evenly distributed across all races (West et al, 2019). An intersectional study by Buolamwini and Gebre (2018) shows that Blacks have the highest error rate of FRT applications (See Fig.1 below).



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Figure 1 - Error Rate of FRT for Different Races (New York Times, 2018, p.3; Adapted from Buolamwini and Gebru, 2018)

Simonite (2019) also opined that even the best algorithms have trouble recognising black faces. In addition, at the beginning of 2020 in the US, Detroit police detained a black man in front of his family with belief that he was involved in a shoplifting incident nearby which was later found out to be an error made by the FRT app as it could not distinguish Black and White faces (ACLU, 2020; United Nations, 2020). Consequently, these may suggest that the Black race is more significantly affected by the FRT solutions. In addition, one may also conclude that if these issues of discrimination persist in the application of FRT in any given area, it is also suggestive that there is no difference when used as means of selecting candidates through video interviews. Buolamwini states this better.

*The main message is to check all systems that analyse human faces for any kind of bias. If you sell one system that has been shown to have bias on human faces, it is doubtful your other face-based products are also completely bias-free*

(Buolamwini, 2019, p.15)

### Arguments against Racial Diversity

While many may believe that it is a crucial time to be addressing the issues of diversity and systemic discrimination in the application of AI and FRT in various fields including HR (West et al, 2019), some are sceptical of, if not an outright dismissal of the idea that racism exists in the application of AI in any field. For example, several researchers opposed an event idea titled “Black in AI workshop”, a renowned machine learning conference with the argument that the event was irrelevant as perceived discrimination against Blacks does not exist (Khan and Bass, 2017). In addition, a more recent argument that seems to be used against racial discrimination in the application of AI and FRT is called cognitive diversity (discussed next). Essentially, this theory has over time been appropriated by opposers of the idea that AI discriminates. They believe that individual peculiarities cutting across perspectives, behaviours and thought processes should be the focal point of diversity issues and not race or gender (West et al, 2019). Williams (2017) went further to propose that even 12 white men from the same background can still be considered a diverse group as long as they think differently. This idea is particularly problematic for authors like Tambe et al. (2019), West et al. (2019) and Buolamwini (2019) who are major believers that AI and FRT are discriminatory towards certain races, especially given that the idea (cognitive diversity) is beginning to circulate among major influencers in the AI industry (Shead, 2019). Having discussed the concepts of FRT and racial discrimination and how both relate, the next section discusses the major theories adopted in this dissertation.

### 2.4 Relevant Theories

#### Cognitive Diversity

Cognitive diversity describes the extent to which a group differs in terms of their thought processes, perspectives, and behaviours (Miller et al., 1998). The assumption is that distinctions among group members may result from characteristics like thinking-pattern, behaviour-manner, skill level, or experiences, as opposed to traditional demographics like race or gender (Miller et al., 1998; West et al, 2019). While several researchers have confirmed that cognitive diversity has a positive relationship with creativity, problem-solving and improved decision-making (Parayitam and Papenhausen, 2016; Meissner and Wulf, 2017; Younis, R., 2019), some other studies believe that it has negative results in respect to teamwork and communication (Miller, 1990; Ness, 2021). As it relates to this dissertation, given the belief that cognitive diversity is beginning to circulate among major influencers

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in the AI industry (Shead, 2019), it is suggestive that this may influence how FRT creators perceive diversity issues, and consequently have major impacts on the current bias experienced by certain races. This is because race or gender may not (or no longer) be an important consideration for them if they believe cognitive diversity is superior to demographic diversity. Nonetheless, a few authors have recommended an amalgamation of cognitive and demographic diversity categories going forward as it seems a focus on cognitive diversity only may be a double-edged sword (Kang et al. 2006; Tatli and Özbilgin, 2012; Younis, 2019).

### Similarity-Attraction Paradigm

Similarity-attraction paradigm has to do with people's preferences for engaging with those who are like them (Byrne, 1971). This essentially implies that people tend to favour others who possess' similar traits or features to them. In the context of this dissertation, the study of Crawford (2016) confirmed this paradigm when he found that one of the reasons why AI may be biased toward people of colour is because most AI and FRT developers are concentrated in the hands of only a few companies, that went to similar elite universities and are usually male and white. That is, most FRT tools are created by white-male people and following the similarity-attraction paradigm, there is, therefore, a tendency for them to create systems that work best for people like them subconsciously. This may also be a possible explanation for why the error rate of FRT is significantly lower for White Males (Buolamwini, 2019).

### The Shackled-Runner Analogy

In, the shackled runner analogy, Noon (2010) highlights the challenges in closing the racial discrimination gaps using the story of two runners. In the context of this dissertation, this analogy suggests that, while FRT may be inherently biased as confirmed by various studies discussed so far, it may also be possible to close this gap going forward, if FRT developers give *special considerations/adjustments* to how FRT functions for people of colour by looking at the training data used and how ODAVIS is implemented.

### Face Dataset

In FRT, the eyes in addition to other facial features help map facial traits from an image or video and then compare the information to a database of known faces (Galterio et al., 2018). This database of known faces is called a face dataset. There are several face datasets available today and some of the popular ones used by most FRT companies are as follows: Facebook dataset, Labelled faces in the wild home (LFW), YouTube faces dataset with facial keypoints, Google facial expression comparison dataset, and Large-scale celebfaces attributes (CelebA) (Ortiz and Becker, 2014; Choudhury, 2020). While humans may be able to identify and remember up to 5000 faces (The Guardian, 2018), these databases can remember hundreds of thousands of faces and cumulatively into millions, as fast as within 0.2 seconds (Barragan-Jason et al, 2015). These images here are often used as training data (data used to train machine learning models) by several FRT systems (Parkhi et al, 2015; Guo et al, 2016; Zhang et al, 2016). In the context of this dissertation, given that most FRT systems use these platforms for their training data, the question is, are the faces in these datasets representative of all faces in the world?

### 2.5 Previous Research

This section discusses some of the previous research in FRT and racial discrimination subject areas.

One of the earliest research projects in FRT was an Oxford seminar thesis by Kanade (1973). He was interested in understanding how FRT identifies peoples' faces through their morphological traits like the distance between eyes, shape of nose and mouths. Essentially, he focused on understanding the intrinsic variations that may pose problems for FRT in the future.

In the last decade, however, more studies in this area have been on addressing different themes. One of the major themes has been focused on who creates FRT. The focus of this theme has been to understand the source of discrimination in the AI field. West et al (2019) found out that black race representation in most tech companies is around 5% or less. Crawford's (2016) study showed that most developers in tech companies that create AI and FRT are predominantly white males. However, other studies such as Williams (2017) have argued that there is still diversity among AI creators, just not racial or gender inclined but with a focus on cognitive diversity.

Another major theme that previous research has been carried out on is the inherency of AI and FRT to be biased toward certain people. Tambe et al (2019) study showed that AI is inherently biased toward women and people of colour. Buolamwini and Gebru (2018) found that the error rate of FRT is predominantly higher for people of colour than for others. Merler et al (2019) opined that the training data used in FRT are not representative of all races. However, one of the major FRT company's AI head recently claimed that their FRT app (*Amazon Rekognition*) is not discriminatory towards certain races as claimed by other investigators and that their training data cuts across all race and ethnicities (Kleinman, 2019).

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Lastly, another major theme previous researchers have focused on has been the application of FRT to specific HR activities in the workplace. Weichselbaumer's (2016) study focused on the application of FRT on job applications, where he found out that application profiles of white people had higher call-back rates than profiles of people of colour. Other studies have focused on the application of FRT for psychometric assessment and IQ testing. Duchaine and Nakayama (2006) found out that the Cambridge Face Memory Test (CFMT), a variation of FRT have no association with standardized IQ tests. Wilmer et al (2010) found out that CFMT has no association with general abilities. Other studies focusing on the application of FRT on one-demand-asynchronous video interviews found that the application of FRT in selecting candidates leads to discrimination (Zhao et al, 2017; Lohia et al, 2018). However, Masud et al (2020) studied opined that irrespective of FRT shortcomings, it nonetheless enhances collaboration between humans and computers to make the recruitment process more seamless. Izario et al (2017) and Black and Esch (2020) also believe that the application of FRT in video interviews helps determine the character and trustworthiness of the best candidates based on their outward appearance, response to answers, and eye contact.

### 2.6 Research Gaps

As discussed in the previous section, several studies have been done around the themes of who create FRT (Crawford, 2016; West et al, 2019), and why FRT is an inherent bias against certain race (Buolamwini and Gebru, 2018; Tambe et al, 2019), and problems of applying FRT to HR activities (Duchaine and Nakayama, 2006; Weichselbaumer, 2016; Zhao et al, 2017). There have also been studies around the distinctions of eye shapes, noses, and mounts in the application of FRT (Merler et al, 2019). However, much research has not been done to see if developers consider facial characteristics such as skin colour and why it impacts the reported varied performance of FRT systems when applied to ODAVIS. In addition, there hasn't also been so much research into whether FRT developers employ training data that is representative of all races during the development. As a result, the goal of this dissertation is not to prove or disprove whether FRT is discriminatory towards specific races or which race is responsible for it, but to understand how creators of FRT capture peculiarities when using FRT in recruitment.

## METHODOLOGY

### 3.1 Research Philosophy

In this dissertation, the research philosophy adopted is **interpretivism**. Interpretivism is based on "perceiving or comprehending the meanings that people attach to their actions through social constructions such as language, shared meanings, and instruments" (Myers, 2019, p.45). The reasons for adopting this philosophy are, first, it allows researchers to have multiple interpretations, secondly, it helps get responses that are close to the truth through qualitative and primary data, and lastly, it offers a great level of depth on social issues like the subject of this dissertation (Klein and Myers, 1999; Saunders et al, 2012). However, this philosophy has some shortcomings. First, Chowdhury (2014) argued that objective data are difficult to collect using this philosophy as the researcher does not focus on universal truths, hence, it is perceived by many as subjective. In addition, Gill and Johnson (2010) argued this approach may be unreliable as the interpretation and truth differ among researchers. These shortcomings are in contrast with the positivism philosophy which some contend comes with clear evidence and higher reliability given that its approach tends to be more scientific (Cohen et al., 2007; Hammersley, 2013). It is also in contrast with pragmatism philosophy which typically focuses on concrete and practical issues and results (Iyadjiev, 2013). Irrespective of the shortcomings highlighted, the interpretivism approach was still chosen because it enables analysis of stories, narrative or textual-inclined data collected, and most importantly allows multiple interpretation and conclusions, which are all important to answer the research questions of this dissertation.

### 3.2 Research Approach

The reasoning approach adopted in this dissertation is **induction**. Bryman and Bell (2015, p.27) explained that the induction research approach draws its inferences "by using known premises to generate untested conclusions, which then involves a generalization from specific to general". Some of the criticism against this approach include the tendency to get wrong inferences and its scope limitations (Eisenhardt et al., 2016; Saunders et al., 2019). The opposite of this is the deductive approach, which in contrast focuses on patterns, trends, and causal relationships between variables (Robson, 2002) and unlike the induction approach, deduction inference is usually from general to specific (Bryman and Bell, 2015). Nevertheless, the induction approach was favoured for this study because, first it is more consistent with the interpretivism philosophy (Saunders et al., 2019) and secondly, it is the most appropriate approach for socially inclined subjects like that of this dissertation, which aims to understand the context in which the development of ODAVIS takes place (Easterby-Smith et al., 2021; Thomas et al., 2022). Other advantages of this approach include, opportunity to generate new theories, and ability to offer alternative explanations (Eisenhardt et al., 2016; Saunders et al., 2019).

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## 3.3 Methodological Choice

The methodological choice adopted in this dissertation is **qualitative**. This choice uses qualitative data collection methods (Saunders et al., 2019) which helps collect qualitative data in textual form. This is as opposed to the quantitative method where the focus is on collecting numerical data with single or multiple data collection methods or mixed methods that try to employ both methods (Saunders et al., 2019). Some of the criticism of using the qualitative method include difficulty in measuring causality and insufficient sample size (Taylor, et al., 2015). Nevertheless, a qualitative approach is adopted for this study because it gives the opportunity to generate valuable conversations in textual form, from the target audience of this research that numbers may not be able to. Some of its other benefits include flexibility and the use of small sample size (Choy, 2014).

## 3.4 Data Collection and Analysis

The choice of data collection method adopted in this dissertation is primary data through **one-on-one interviews**. Interview is one of the most used data collection methods in qualitative research as it allows researchers to gather data through in-depth conversations, stories, and narratives (Saunders et al., 2019). Specifically, semi-structured interview questions (see appendix 2) were developed using an appreciative inquiry guide (Michael, 2008) to collect data from the target audience (FRT creators). A semi-structured interview was adopted because it allows the capturing of emotions and non-verbal cues of the interviewees, gives great deal of flexibility, is open-ended and follows a natural conversational flow (Patton, 2014).

The target audience that the data were collected from were creators of FRT and ODAVIS. Hence, I interviewed FRT developers and other relevant stakeholders who have worked in FRT and have been part of the development of ODAVI solutions. A non-probability sampling technique, specifically **convenience sampling**, was adopted for this dissertation. Although this technique has been thought to be prone to bias (Etikan and Bala, 2017), it was however still chosen because it saves time and cost (Acharya, et al., 2013). In terms of the sample size sufficient for this study, Saunders et al. (2007) argued that qualitative research should typically require a small sample size following the principle of saturation. They, therefore, recommended sample size of 10-20 interviewees. Francis et al. (2010) corroborated this in their study where saturation was achieved after 17 interviews. Consequently, **twelve (12) interviewees** were selected for this study.

**Thematic analysis** was used in analyzing the data collected. This involved categorizing the textual data collected into themes and then presenting it to answer the research questions (Saunders et al., 2007). This data analysis type was chosen because it helps apply inductive reasoning logic and enables all research questions to be answered (Braun and Clarke, 2012).

## 3.5 Ethical Considerations

In ensuring that this dissertation is carried out following academic ethical principles, the recommended guidelines of Macfarlane (2010) were adopted. This cut across getting verbal and documented consent as well as informing the interviewees of their rights to anonymity, and withdrawal at any point in time. Saunders et al (2019) also recommend that interviewees' responses should be treated with confidentiality and privacy. Consequently, a consent form and participant information sheet were developed (see appendix 1) and used to inform the interviewees of these rights and the ethical considerations employed in carrying out this research before the interviews.

## FINDINGS AND DISCUSSIONS

### 4.1 Introduction

The objectives of this dissertation were to understand how creators of FRT determine candidates' suitability for jobs using ODAVIS facial analysis, if the data used to train their model is representative of the faces in the world and what reasonable adjustments and considerations (if any) are made for people of colour. After interviewing the twelve (12) creators of FRT, the results were analysed and are presented in this chapter.

The structure of this chapter is divided into five sections. The first section reiterates the research questions and outlines the structure of this chapter. The second section outlines the interviewee's profiles. The last three sections present and discuss the key findings of each of the three research questions.

### 4.2 Profiles of Interviewees

Following the ethical considerations adopted in this dissertation, all names used in this chapter were pseudonymized. The profiles of the FRT creators interviewed can be seen in Table 1 below.

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Table 1 - Interviewees' Profiles

Participants	Pseudonyms	Gender	Region	Role
Participant 1	Aiden Lakshanya	Female	India	Business Psychologist
Participant 2	Beton Kailing	Male	Ireland	Mid-Level Developer
Participant 3	Charles Fabrizo	Male	South Africa	Senior Developer
Participant 4	Daniel Hendriks	Male	UK	Product Manager
Participant 5	Eirene Erik	Male	Nigeria	Junior Developer
Participant 6	Fabio Cyril	Male	US	Junior Developer
Participant 7	Gabriel Gallagher	Male	Nigeria	Junior Developer
Participant 8	Helyette Deekshita	Male	UK	ODAVIS Recruiter
Participant 9	Ibrahim Ishtar	Male	Nigeria	Mid-Level Developer
Participant 10	Jacint Jabir	Male	Canada	Mid-Level Developer
Participant 11	Kalap Baldwin	Male	Nigeria	Junior Developer
Participant 12	Liam Alexander	Male	UK	Researcher

### 4.3 How FRT Determines Candidate's Traits through Facial Analysis

The first research question of this dissertation was to understand how creators of FRT determine candidates' suitability for jobs using facial analysis. Overall, two major themes were identified as methods utilized by ODAVIS to analyse people's facial expressions and assign an emotion/behaviour to such expressions during interviews. The first theme centred around statistical analysis and the second theme centred on deep learning, specifically, convolutional neural networks (CNN).

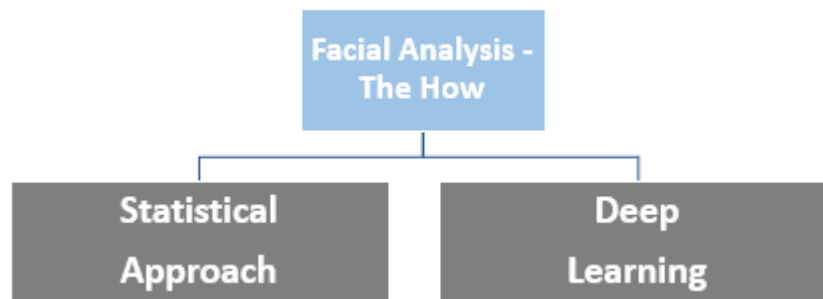


Figure 2 - How FRT Classify Behaviours through Facial Analysis

The statistical approach has to do with resizing and dividing images/videos read into a standard pixel size, before computing certain statistical tests, and then classifying the faces using any of the popular statistical classifiers (Jia, 2017), whereas deep learning uses various sub techniques such as CNN which "captures an input and assigns importance as weights and biases to various aspects and characteristics of an image, such as features of a face as gestures, or age..." (Brito et al., 2021, p.115851). Consequently, in CNN, by learning and identifying these traits as belonging to a specific person, the algorithm can distinguish one feature from another, and classify emotions or behaviour to certain facial features and expressions.

A recurrent response among the interviewees was the reiteration that through CNN, the ODAVIS can identify emotions such as smiling, happiness, sleepiness, tiredness, and even some behaviour such as the focus level of a candidate, or whether a candidate is stressed, distracted, or even cheating. Seven out of twelve of the interviewees focused on this and some examples of their responses can be seen below.

*...we can identify these behaviours by classifying certain landmarks on people's faces to different emotions. A hybrid of neural networks measures and classifies the activities over a period. Logic can (then) be created to define activities based on the classifications made. For example, we can measure candidates' focus or distraction level, by using a gaze estimator, that specifies the direction that the candidate is expected to be looking at. This can be used in addition to NLP (Natural Processing Language) to detect distracted audio feedback - like if the candidate is talking to some other person (Cheating).*

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...Fabio Cyril, Male, US, Junior Developer

Another interviewee though agreed on how ODAVIS can do this through deep learning, however, said it is dependent on how the machine has been trained and the availability of sufficient data to understand different reactions.

*...depends on how you train and adjust your machine (model). The application can look through your face and detect certain features like stress level, smiling (enthusiasm), sadness, and various other emotions. The truth is humans tend to react the same way, and hence the system is trained to see that. The algorithms can (even) be trained to predict or compare candidates to high performers within the organisations using features like haircut, dressing and general presentation. However, we need more data on peoples' sitting positions, gestures, and reactions.*

...Beton Kailing, Male, Ireland, Mid-Level Developer

Concerning whether FRT captures inherent face distinctions among different races when determining these traits, how accurate it is and whether the performance of the system is consistent across all races, the responses from interviewees indicated that performance is not the same across races, as certain conditions like skin colour make it difficult to capture the inherent facial distinctions among different races. *Eirene Erik* for example talked about how an ODAVIS like-tool failed to grant a black person access to take their assessment (as the face could not be read properly). *Beton Kailing* also mentioned how the tool was tested with nose masks on, for different races, but didn't work for blacks. *Jacint Jabir* however said it is very accurate and that the performance is consistent across races as different skin and eye colours are used to train the model. Unlike the three other responses above, the response below gave a new light.

*Sometimes it's not a racial or diversity-related issue but just physics. Black people have darker skins and (also) in dark rooms, less light is reflected to the camera. In a dimly light environment, it is naturally easier to see a white person than a black person... (hence the differences in performance).*

...Daniel Hendriks, Male, UK, Product Manager

### Use of Facial Landmarks to Classify Candidates' Emotions: A Breakthrough or Recipe for Discrimination?

Facial landmarks are keypoints in people's faces and one of their functions is to detect emotions (Nguyen et al., 2017). One of the major findings presented above is the use of certain facial landmarks to classify certain emotions and traits of candidates during video interviews. On the one hand, this finding is consistent with that of several other authors and seem like a breakthrough. First, Loconsole et al. (2014) discovered that there are 19 major keypoints in human faces and can be used to compute 26 geometrical features for emotion prediction. Secondly, Black and Esch (2020) corroborate this finding when they found that ODAVIS aids in selecting the best candidate by evaluating the applicant's appearances, facial expressions and speaking manner. Also, a top car manufacturer uses FRT to evaluate driving candidates' appearances and facial expressions, based on which an evaluation report is generated and sent to the hiring managers (Jo, 2018).

On the other hand, this does not appear to be the opinions of other researchers and may therefore need to be approached with caution. Faux and Luthon (2012) argued that skin tone and colour are the most difficult morphological difference for FRT to understand. As a result, first, it is unsure if the result of the face analysis will be consistent for different people due to variations in skin colour and shapes of their eyes and noses. This was confirmed by Kahn (2021) who found ODAVIS to have inconsistent performance across races. Secondly, the use of this solution can increase profiling cases when candidate's haircut, dress sense or mood, are used to judge their overall level of competency. Lastly, as pointed out by Buolamwini (2019), given that other FRT application has been seen as discriminatory towards POC in other fields, there is no guarantee that it is any different now. Consequently, companies need to evaluate the risks and rewards of these solutions before adopting them in their recruitment process, as it is illogical to adopt a tool which though brings a benefit, come with 2 problems.

### Inconsistency in Performance: A Physics Issue or Just an Excuse?

Another finding of this dissertation is that although humans' facial features are different, humans tend to react the same way (irrespective of skin colour), and hence the system is trained to see that. This suggests that even if the data used to train the ODAVIS model is from one race, it is expected to work the same way for other races because humans react the same way.

While Merler et al. (2019) argued in favour of this by stating that this is one of the major advantages of CNN (efficiency in identifying morphological distinctions across races with little or no bias), however, Brynjolfsson and McAfee (2014) argued that computers are bad at such pattern recognition. Nevertheless, certain facial expressions have been said to be consistent in all parts of the world (Zadeh, 2018). That is, there is a universal expression for certain emotions, and this may imply that even if facial samples of only one race is used to build such model, performance may still be expected to be the same for every other race. Contrary to the above however, this is still not the case in reality, as there is still a high level of the inconsistency of ODAVIS performance across different races. For example, a leading creator of ODAVIS has been heavily criticised as it is believed that the

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solution is still highly discriminatory towards POC (Kahn, 2021). Simonite (2019) also argued that even the best algorithms have trouble recognising black faces.

Lastly, in a scenario where this is conclusively more of a physics problem, and the perceived discrimination towards POC is unintended, should this then be left unattended? Should the minority groups affected be ignored even though the system analyses them differently because of their skin colour, lighting condition or camera quality? To answer these questions, the story of the shackled runner can be a guide. For the application of this technology to be fair, special considerations may have to be given to the affected race (mostly POC), as a form of justice. This could include, going the extra mile to get more black faces as training data, ensuring that ODAVIS comes with an automatic lighting/ brightening effect or even using more black faces to train some versions of the model to close the inconsistency gaps. However, the attitude of FRT creators in this regard may be problematic. For example, 5 out of the 12 interviewees recommended that NO special consideration whatsoever should be given to any race when building or implementing ODAVIS. This is because, the system is meant to be scientific, and its operations must be standardized across all users.

### 4.4 Training Data Sources and Representation

The second research question focused on finding out if the data used to train FRT models is representative of the faces in the world. The key findings here are divided into two categories. First, the source of the training data and secondly, the perception of the developers concerning the representativeness of the data. In the first category, three major themes were identified as sources of training data. Fig.4 below shows a summary of these sources.



Figure 3 - Sources of Training Data

Here are some of the responses of interviewees:

*...supplied ones (pre-trained dataset) are not of great use, as the cameras (data size and quality) are not the same, same with the lighting, the training subjects (race, gender) and so on.*

... Charles Fabrizo, Male, South Africa, Senior Developer

*Data from previous candidates in the system databases of CVs are used as training data. Previous candidates' ODAVIS videos are also used to train the machine (model).*

... Helyette Deekshita, Male, UK, ODAVIS Recruiter

For *Beton Kailing*, they said the reason their organisation uses pre-trained datasets only is that *"training your own algorithm is a very lengthy process"*. *Gabriel Gallagher's* reason was that a *"combination of dataset sources helps to get better representation"*. The second category of findings is concerning FRT creators' perception of the training data representation of faces all over the world. 5 out of the 12 interviewees stated that the training used is not representative (specifically as it relates to race and ethnicities). Another 5 of the 12 interviewees however stated that the training data used are usually represented. Here are some of the main responses from those who believe the training data are not representative.

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*...Not equal samples (of training data), but a proportion of the population is designated for each ethnicity and stated.*

... Eirene Erik, Male, Nigeria, Junior Developer

*The training data are not representative enough...more publicly accessible data available, are for whites.*

... Fabio Cyril, Male, US, Junior Developer

*The dataset is mostly white faces, with little or no representation of the black race. We use customised dataset to fill these gaps.*

... Ibrahim Ishtar, Male, Nigeria, Mid-Level Developer

Some other interviewees however thought the data are representative enough. For example.

*Black race (people) within the US, UK and Europe are used as part of the training data and hence, function the same way and accurately as black people from Africa.*

... Jacint Jabir, Male, Canada, Mid-Level Developer

Having presented the main findings about the second research question, the next sub-sections discuss these findings with relevant literature.

### Are the Training Data Used Representative?

In terms of the sources of the data, first, the use of a pre-trained database seems to be a very good use of resources for FRT companies, as these platforms already have thousands of pre-trained data, instead of training their own data which takes time. However, irrespective of the quantity of data available, if it is not representative of all races, it is still not good enough. For example, using the LFW pre-trained database as a case study, even though it has thousands of data sets and is one of the most popular databases used in building FRT-inclined solutions, its data only has a 7% black faces representation (Han and Jain, 2014). Secondly, the use of customized data only, though allows for building the quality of training data needed (including adding specific representations of different races and ethnicities), is however too lengthy a process, and at best will have good but insufficient data samples. This is because training one's own data could take time, hours, days or even years (AI Stack Exchanges, 2019). Nevertheless, datasets from the candidates' profiles or videos of previous candidates who have completed an interview on any of the ODAVIS could be a major form of training data as they made involve the exact samples of what the training model is intended to build. Consequently, the most ideal and recommended training data source is the use of a combination of a pre-trained dataset (large samples) and a customized dataset (used to complement the larger samples and fill the racial inequality gaps). This way, the training data may then be "large enough while also being diverse enough to learn the many ways in which faces inherently differ" to have consistent performance for all faces we see in the world (Merler et al., 2019, p.2)

The second discussion here is centred around the attitude of FRT creators on the representative training model. This is because, understanding whether creators perceive the need to consider having representative training data, may indicate what issues to tackle, whether the gaps in how the machines function only or the creators themselves too. The similarity-hypothesis theory (Byrne, 1971) suggests that people tend to favour others who possess' similar traits or features to them. Crawford (2016) also pointed out that the creation of AI is concentrated in the hands of white males. Consequently, for creators of AI where this theory is true, this may imply that they would rather favour using other "white males" individuals as their training data, as these "types of people" are similar to them. Surprisingly too, only 2 out of the 12 interviewees stated that they won't find it challenging building an FRT solution for a race different from theirs. This suggests most developers may prefer building models for the same or similar race as theirs, hence a possible explanation for using more white males as training data.

To conclude, one of the interviewees said it best:

*Your solution is only as good as your data. No matter how strong the model is, the solution cannot function beyond the accuracy of the training data. To build a solution that will be globally acceptable means that the data ought also to be globally inclusive. It must be representative of the entire population.*

... Fabio Cyril, Male, US, Junior Developer

### 4.5 Considerations Made by FRT Creators

The third research objective seeks to understand considerations and reasonable adjustments FRT creators make during the design and implementation of ODAVI solutions. Overall, over 20 different considerations were listed by all 12 interviewees as major considerations made. One of the interviewees stated why these considerations are needed.

*...there is a standard we work with. However, reasonable adjustments are made afterwards where gaps are perceived.*

... Aiden Lakshanya, Female, India, Business Psychologist

6 major themes were identified cutting across all the highlighted considerations. Figs.6 below presents a summary of the themes.



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Figure 4 - Thematic Presentations of Considerations Listed

The first two major themes identified were considerations around social implications of ODAVIS and environmental factors that may impact how ODAVIS functions. Considerations under these themes appeared the most, with FRT creators stating the need for them to make considerations around issues like bias in the system (against race or gender), issues around profiling, lighting, camera quality, and device type. For example, two of the interviewees said:

*...in a dimly light environment, it is naturally easier to see a white person than a black person. Reasonable adjustments can be made to correct this... the algorithm can be tweaked to work better than it does, for people with darker skins.*

... Daniel Hendriks, Male, UK, Product Manager

*Some of the problems we have with the FRT solution is that they come with heavy device requirements that people from developing nations or humble backgrounds may not be able to afford.*

... Jacint Jabir, Male, Canada, Mid-Level Developer

Commenting on how some of the strategies they use to correct these issues of bias, camera, lighting and profiling, these interviewees said:

*Some data augmentation techniques can be used to adjust the model to increase the contrast and brightness of the skin colour before detection and analysis. We can define a metric for specific skin tone and then apply the augmentation. However, this leads to more processing time.*

... Ibrahim Ishtar, Male, Nigeria, Mid-Level Developer

*Models should be trained with low resolution that would allow people with low-level devices to get the same performance. However, most of the solutions in the market are trained with 4k images, hence a potential issue in having standardized performance.*

... Jacint Jabir, Male, Canada, Mid-Level Developer

*...most clients are moving away from this (facial analysis) as most of the data they need to determine a candidate's capability can be gotten from NLP – unless the client specifically requests (facial analysis report). So, we isolate the facial analysis and determine how valid the result is. And if it gives a validity score within the required threshold, then face analysis is no longer necessary for such candidates.*

... Helyette Deekshita, Male, UK, ODAVIS Recruiter

The four other themes were centred around considerations made concerning the quality or quantity of training data, privacy issues, laws of the country of use and others (candidates' experiences, recruiters' experience, system audits). Fig.6 below shows a word cloud of considerations listed by the interviewees in order of appearance.

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Figure 5 - Word Cloud of Considerations Listed by Interviewees

Having presented the findings about the third research question, the next sub-section discusses these findings.

### Considerations that May Close the Gaps for People of Colour

Among all the considerations listed by the interviewees, 4 of them could help improve the performance of ODAVIS for people of colour. They are lighting, device requirements, ODAVIS bias testing/audit and isolation of facial analysis report.

First, lighting was the most highlighted consideration developers make/believe should be made as it appeared in the lists of 6 of the 12 interviewees. It also came up as part of the major considerations to close the performance gaps of ODAVIS between light and dark skin people. This finding is corroborated Sarda et al.'s (2011) findings that lighting is a major challenge of FRT, and its variation could change how solutions developed from FRT functions. Consequently, to get some similarity in performance of ODAVIS for white and people of colour, it is recommended that all ODAVIS creators set algorithms that can adjust the contrast, and brightness of the skin colour of candidates using the tool, before detection and analysis are made. This could involve ensuring the tools have in-built flashlights and encouraging candidates to be in a well-lighted environment before starting the assessment. This may however still be problematic for candidates living in underdeveloped countries with power and lighting issues and perhaps even for black people having hyper-pigmented skins.

Secondly, the issue of device requirement seems to be a very important consideration all ODAVIS companies should make. If organisations are to achieve a truly diversified workforce, this may mean that they must be able to build their recruitment process around everyone, irrespective of income level or economic background. For example, information from a top ODAVIS creator website shows a high device requirement to take their video interviews, requesting for laptops with a processor speed of 2.0 GHz, Adobe flash player 11.6 version minimum, newer versions of operating systems, large RAM size and more. This may be difficult for individuals with poor income or low-level devices. In terms of income level, Blacks and Hispanics are at the bottom of the list (Statista, 2022). This may suggest that they may be affected the most. Consequently, it is recommended that ODAVIS creators make the solutions to function for low-level devices, so as not to ostracise certain individuals, who may most likely be POC.

Another very important consideration is testing the ODAVIS tool for bias before deployment to the market. This is a very good practice and Deloitte (2021) recommended a periodic subsection of companies hiring tools to an independent audit. This helps spot biases and put some elements of controls to mitigate them.

In addition, isolation of facial analysis from the assessment report can be good practice for all ODAVIS creators to adopt. That is, the video is put off, and the candidate is assessed with the audio only through NLP. And if the validity of the result falls within the required threshold, then face analysis is no longer necessary for such candidates. This approach seems quite logical also, as an individual's skill level can be assessed via their responses to questions only as confirmed by Wilkinson (2021). Nguyen et al. (2014)

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however argued that non-verbal cues are a very great way to determine a candidate's *hirability*, hence the justification for the need to observe the candidate's face as they talk. Nevertheless, a co-founder of the AI Now Institute, a research centre in New York still argued otherwise saying:

*It's a profoundly disturbing development that we have proprietary technology that claims to differentiate between a productive worker and a worker who isn't fit, based on their facial movements, their tone of voice, and their mannerisms.*

...Meredith Whittaker (Harwell, 2019)

Lastly, it is also important to state that some interviewees still believed that the solutions' operation should be standardized completely, and no consideration or reasonable adjustments should be made. In addition, even some who stated some considerations or adjustments should be made believed none should be made regarding POC. A possible explanation for this is the role of cognitive diversity theory in the AI industry. In enquiring where these FRT creators stand in the cognitive diversity school of thought, 4 out of the 12 interviewees believed cognitive diversity is superior to demographic diversity. This may mean that such creators see little or need to include racial, gender or other demographic-related indicators in their decision-making process. This confirms the findings of Shead (2019) who believed that cognitive diversity may be getting adopted by some major influencers in the AI industry. This is particularly problematic because, if AI creators do not see the need for demographic diversity considerations when creating solutions, there is only so much external stakeholders can do.

## CONCLUSION

### 5.1 Summary

This dissertation aimed to understand how FRT determines candidates' suitability for jobs through ODAVIS' facial analysis. A one-on-one interview was conducted with 12 creators of FRT including software developers, business psychologists and other stakeholders to understand this process and the considerations they make in the development and implementation phases of such solutions. One of the major findings is the use of facial landmarks and gaze estimators to recognize and analyze candidates' emotions during the interview. This is used in addition to NLP, after which a report assessment is then generated recommending to the recruiter if such candidates are suitable for the jobs. Inconsistency in the performance of the solution for different races was however found, confirming the findings of previous researchers. Another major finding is that the data used to train the ODAVIS model was not representative. While some interviewees opined that the data needed not to be representative for the solution to be effective, some interviewees observed inconsistencies in performance and put measures and considerations in place to mitigate such gaps. Some of these considerations included augmentation of the training data, optimizing the lighting effect, reducing the device requirement, isolating facial analysis for some clients, and carrying out a periodic audit of the solution.

### 5.2 Practical Recommendations

Following the findings and discussions from the last chapter, here are some practical recommendations for companies.

1. Companies that create ODVI solutions:
  - a. Ensure the data used in training their model has a representation of all faces found in the real world (Han and Jain, 2014; Merler et al., 2019). This cuts across taking time to train the model before selling the solutions to clients, using a combination of a pre-trained database and customized sources (CVs and videos of existing candidates)
  - b. Augmenting the data where there is a need. This sometimes may involve increasing the data of people of colour and reducing that of the main population for some versions.
  - c. Reduce the requirements of the devices.
  - d. Carry out numerous tests of the solution before deployment to clients (test the solution for different ethnicities, observe the performance before launch).
  - e. Take a second look at the diversity composition of the solution design team. This may involve intentionally hiring people of colour or people from other minority groups to get domain knowledge to help in mitigating bias.
2. Companies that use ODVI solutions for recruitment:
  - a. Exercise caution when deciding which ODAVIS tool to use for their recruitment activities or whether to even use one at all. This may involve requesting a demo, and bias reports from multiple ODAVIS vendors before deciding. It may also involve confirming if the vendors' system can isolate facial analysis and use NLP only to determine the suitability of the candidates. It may also involve evaluating the cost and benefit of the system for their recruitment activities, and where the costs outweigh the benefits, they may decide not (Buolamwini, 2019; Simonite, 2019).
  - b. Carry out periodic independent bias audits on the solution if adopted.

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## 5.3 Limitations, Way Forward and Future Research Directions

This dissertation is subject to certain limitations. First, the data used was gathered through interviews, which was insufficient to gather all the facts. Researchers carrying out similar future studies, may in addition to interviews, consider experimenting with the ODAVI solution itself and subjecting it to an independent audit. This may provide more insights. A second limitation is the interview subject. While the subjects gave as much information as they could, there were still gaps in certain areas. For subsequent studies, it is recommended that interviews be conducted on other subjects like the recruiters, candidates and even the decision makers of the ODAVIS companies like the CEOs. This should give more robust insights into missing pieces. A third limitation is the sampling technique used (convenience sampling). Future research may need to consider stratified sampling techniques that could allow the researcher to get proportionate opinions from the different stakeholders (like software developers, business psychologists, market researchers, and others) or country of application (which can help compare the result of one country to another and see if the laws of the different countries impact the way ODAVIS work for them). Lastly, while reflecting, another possible bias in this dissertation may be the researcher's philosophy and race. This may have affected how the research was approached. Consequently, researchers with different philosophies (pragmatic or post-modernists) and those from neutral races are encouraged to carry out similar research and compare the results.

## 5.4 Personal Reflection

*As a black immigrant in the UK, I recognise that living here comes with its challenges. Challenges that sometimes make me ponder on giving it all up and returning to my home country, Nigeria. If wishes were horses though.*

*Still, Nigeria is a beautiful place. A place where I didn't have to walk for a few minutes before seeing a familiar face. A place where I can talk to someone and anyone without holding back from fear of being judged as a caveman. And most importantly, a place where no one ever has to think of the implications of their skin colour while trying to get a job.*

*The UK is a beautiful country too. But dunno if I can say the same thing. Here, I probably would have to 'whiten' my CV before even being shortlisted for an interview. When I get the interview, the least expectation is to be assessed just like everyone else. However, I fear that the expression of eagerness shown on my face may be interpreted as intense anger by recruitment robots?*

*No one enjoys being treated differently from their counterparts, not even the goose and the gander. Equal opportunity requires consistency in decisions for both whites and blacks. Until then, the diversity mantra by UK companies unfortunately will remain only a sham.*

...Evans Uhunoma

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## Examining the Influence of Group Interests on the Effectiveness of Internal Audit in Enterprises in Vietnam, a Theoretical Study



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**ABSTRACT:** The article is a theoretical study. The research team has systematized the theoretical basis of group interests, internal audits, and internal audit effectiveness. The factors affecting the effectiveness of internal audit mentioned by other authors are (1) Capacity and number of employees in the internal audit department, (2) The relationship between external audit and internal audit department, (3) Management support to the internal audit department, (4) Internal audit independence. However, in order to make internal control more and more effective, we have found new factors that we believe affect internal control. Our hypothesis in this study is that the group interest factor has a negative impact on the effectiveness of internal audits. In other words, we seek to show that group interests reduce the effectiveness of internal control in Vietnamese firms. The results of empirical research through interviews with 92 accountants and internal audit staff show that group interests have a negative impact on the effectiveness of internal control. Group interests make the internal audit system not as effective as it should be. Fraud in financial statements at businesses is continuously increasing. Group interests cause some internal auditors to overlook the risk and possibility of material misstatement in the financial statements. In conclusion, the research team said that group interests have formed, strongly affecting most businesses. The resulting collusion of interest group members harms investors, damages and reduces market stability. Therefore, enterprises and management agencies need to be determined to control group interests in enterprises.

**KEYWORDS:** Capture theory, Interest-group theory, internal audit effectiveness, Regulatory theory,

### 1. INTRODUCTION

Internal audit activities have appeared and developed strongly in many countries around the world. In Vietnam, internal audit has been organized in large-scale enterprises and public sector units, but in reality, internal audit in Vietnam has not really promoted their effectiveness and revealed many shortcomings access and many weaknesses. The sharp downturn of Vietnam's economy in recent years due to the impact of the pandemic combined with the trend of financial management reform requires an internal audit of Vietnamese enterprises to be effective. The assessment of factors affecting the effectiveness of internal audits is the basis for businesses to come up with solutions to overcome the inadequacies and weaknesses of this department. Therefore, the study and identification of factors affecting the effectiveness of internal audits of enterprises, aiming at assessing the timeliness of information, and assessing the reliability and usefulness of forecasts is very important and necessary. With the aim of understanding the factors affecting the effectiveness of internal audits in Vietnamese enterprises and considering whether the group interest factor has an impact on the effectiveness of internal audits, we have conducted a study on this.

### 2. THEORETICAL BASIS OF RESEARCH

#### 2.1. Interest groups

Group interests are interpreted according to the encyclopedia as a collective of many individuals and organizations. They share a common interest and advance those goals by influencing government policies. According to the Electoral System document in the UK, France, and the US (2009), an interest group or otherwise known in Vietnam as an interest group is a collective consisting of many individuals or organizations with similar interests. According to author Ha (2015), an interest group is a group of all members participating voluntarily, having the same purpose and common interests. The mode of operation of interest groups is to find ways to influence plans and policies to bring them the greatest benefits. Interest groups have two-way effects, positive and negative.

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For the group of positive interests are often public and their common goals do not affect the common interests of society. In contrast, negative interest groups only work for their own purposes, when they gain benefits, it will cause loss to society (p.63). According to author Danh's research, negative group interests in Vietnam are characterized by group members often consisting of influential people in the political apparatus such as law and finance (p.277-278). In the document Some opinions on group interests in Vietnam today, it is said that in Vietnam's economic and social activities, there are many negative group interests. It is expressed in many forms such as creating relationships through giving bribes to superiors and competent people; Connecting between investors, enterprises and competent authorities for the purpose of making benefits to share; Creating businesses operating in disguise to circulate capital and assets; Establishing beneficial relationships with employees in units with inspection, examination, supervision and investigation agencies to perform illegal acts in order to gain benefits. According to author Chung (2020), the causes of forming interest groups include both objective and subjective causes. According to him, objectively, the group of interests formed due to the reverse side of the market mechanism and the rapid international integration made the legal system many loopholes and did not ensure transparency. On the subjective side, he said that the interest group formed and thrived because the thought and cultivation consciousness of those individuals was still poor (para 1). From the above observations, we can see that group interests do not mean negative, there are many group interests that are bringing more benefits to the community and society. However, in this article, we orient our research on negative group benefits and negative group benefits impact on internal control systems in enterprises.

### **2.2. Internal audit**

Internal audit was born mainly to meet the management needs of companies, non-governmental organizations and non-profit organizations such as stock exchanges and organizations, banks, the public sector and the private sector multinational corporations. According to The Institute of Internal Auditor [IIA], an internal audit is an independent, objective assurance and consulting activity designed to increase and improve activities within an organization. Internal audit is an important part of helping an organization achieve its planned objectives by applying systematic and disciplined approaches to evaluate and improve the effectiveness of management processes risk, control and governance in the enterprise. Internal audit links with the risk control management system to improve organizational efficiency through criticism, construction and recommendations on the state of the organization. Since then, Internal Audit helps to reduce asymmetric information in decision-making, it serves as an important assurance in the business process and financial statements of corporations (Soh et al., 2011, pp.605-622). Article 57 stipulates the responsibilities of units with public interests in Law No. 67/2011/QH12 of the National Assembly: The Law on Independent Audit clearly stipulates that "Organize internal audit in accordance with the law. to protect property safety; assess the quality and reliability of economic and financial information, the observance of laws, regimes and policies of the State and regulations of the unit". In Decree No. 05/2019/ND-CP on Internal Audit, it is stipulated that the objectives of internal audit are: Through inspection, evaluation and consulting activities, the internal audit independent, objective assurances and recommendations on the establishment and operation of the internal control system; The entity's governance and risk management processes ensure high efficiency and effectiveness; Operational goals and strategic objectives, plans and work tasks achieved by the entity. According to research by Soh et al. (2011), Internal Audit is particularly interesting and developed after fraudulent activities of financial statements of large enterprises, causing the global crisis in 2008. The legal action focuses on strengthening disclosure requirements related to corporate governance. This has raised awareness and the need to ensure internal processes and corporate governance such as internal control, and internal audit. In addition, given its special role in the organization, Internal Auditing (IAF) helps to provide information assurance and is an integral part of the corporate governance system (pp.605). -622). Thus, Internal Audit is an important part to control and direct the activities in the enterprise to accomplish the set goals. Enterprises almost always have to carry out internal audits, for example, listed companies, enterprises in which the state owns more than 50% of charter capital, and state-owned enterprises which are holding companies and subsidiaries operating under the corporate model.

### **2.3. Internal audit effectiveness**

According to Unegbu & Obi (2007), the effectiveness of internal audits is analyzed and evaluated as an effective control tool established by managers to ensure a smooth and controlled management process, minimizing costs, and ensuring maximum capacity and benefits. Effective internal audit contributes to the organization's compliance with applicable laws and regulations and facilitates the work of external auditors (Simunic, 1984; Wallace, 1984; Xiangdong, 1997). weaknesses in business processes (Sawyer, 1995) and provide independent assessments of business operations and procedures (Kinney, 2000; 2001). Effective internal audit strengthens organizational governance structure (Roth & Espersen, 2002; Hay et al. (2008), Helps organizations in strategic management planning (led by Dung (2016). At a senior management level, the effectiveness of internal audits lies in the ability to control and manage risks within the organization. Effective internal audit requires internal auditors to independently

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improve and objectively quality public services, achieve a good internal control system, prevent corruption, ensure good governance, and demonstrate accountability and good corporate governance. The audit results determine that the results lack independence, the test results will be invalid, no matter how high quality the audit results are performed. The auditor must be honest and accountable to the users of the audit results, but the auditor has access to the company's documents and reports. As a general rule, during the audit, the auditors Accountants must not be influenced or influenced by material or spiritual interests that compromise their objectivity and professional independence.

### **3. METHODS**

This is a theoretical study, so we use the literature review method. Through an internet search engine, we include the phrases Internal Audit, Group Interest, and Internal Audit Effectiveness in Vietnamese and English. From the found documents, we have built a theoretical basis for the study including the theoretical basis of interest groups, also known as interest groups, internal audit and its effectiveness. To evaluate the relationship and influence of interest group factors on internal audit effectiveness, we use the empirical interview method. Interview results are used by us to analyze and synthesize research methods to evaluate and make objective statements.

### **4. RESULTS**

#### **4.1. Factors affecting the effectiveness of internal control**

The factors affecting the effectiveness of internal control are synthesized through the results of document research. Accordingly, in Vietnam, there are very few studies on the factors affecting the effectiveness of internal audits. The influencing factors presented below are synthesized by the research team from the research of authors around the world. According to Soh & Martinov-Bennie (2011), the effectiveness of an internal audit is affected by the structure, status, relationships of internal audit, personnel and capacity (pp.605- 622). Research by Alzeban et al, (2013) (2014) suggests that the effectiveness of internal audit is affected by three factors: capacity and number of internal audit staff; The relationship between internal auditors and external auditors; Management support for internal audit and Internal Audit Independence. Research by Baharud-din et al. (2013) and George et al. (2015) suggests that the factors contributing to the effectiveness of internal audit include three factors: Internal audit independence, Internal auditor capacity and Internal audit management support. Thus, the study that identified 4 factors affecting the effectiveness of internal control is the study with the largest number of identified factors. Therefore, we apply the results of Alzeban et al. (2013) (2014) to use in this study. Accordingly, the factors affecting the effectiveness of internal audits in Vietnamese enterprises are (1) Capacity and number of internal auditors; (2) The relationship between the internal auditor and the external auditor; (3) Management support for internal audits and (4) Independence of internal audit.

#### **4.2. Theory of regulation**

Group interest is a normative theory, so we will consider Regulatory Theory before proceeding to examine the influence of group interest on internal audit performance in enterprises in Vietnam. Regulatory theory is represented by three main theories namely public-interest theory, capture theory and private-interest theory. Accordingly, Public-interest theory talks about content that meets social requirements in correcting the unfairness or inefficiencies of market prices, thereby protecting the common interests of society through establishing regulations determined. Capture theory is also known as interest-group theory. This theory indicates that interest groups in society often require the establishment of rules that maximize the interests of group members. Finally, there is the private interest theory, which is primarily based on the assumption that those in charge in regulatory organizations often behave based on their self-interest. Regulation theory explains the supervision mechanism and legal operation mechanism of Vietnamese enterprises. This theory also explains the foundation of the formation of group interests in enterprises from individuals in regulatory organizations. The activities of Vietnamese enterprises still have a lot of group interests such as illegal mergers and acquisitions of enterprises by a group of large shareholders. Group interests in the financial activities of enterprises are closely linked with group interests in financial institutions in various forms to simplify credit activities. Many businesses are joint-stock businesses but are owned by family members making it easy for group interests to flourish. Large corporations and enterprises also set up subsidiaries and branches to manipulate and cheat data on financial statements. When considering the relationship of group interests to the effectiveness of internal control, we hypothesize that group interests always exist in enterprises and the more developed group interests, the lower the effectiveness of internal audit.

#### **4.3. Hypothesis evaluation**

To examine the impact of the group interest factor and the effectiveness of internal control, we conducted semi-structured interviews with 92 employees holding the positions of accountants and internal auditors at enterprises. Interviewees were asked

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by us "Do you think group interests have an impact on the effectiveness of internal audits in enterprises". The results of the interview participants showed that group interests have a negative impact on the effectiveness of internal control. Many opinions also believe that the internal audit system is not effective as expected. The evidence they give is that financial reporting frauds at businesses are constantly increasing. Many businesses turn from profit to loss business after their financial statements are re-audited by State auditors. There are many opinions that the internal audit department has ignored some risks and potentially erroneous data and lacked transparency in reporting because the business leaders and the audit staff are related to the interests of the company useful. These are some results from empirical research, but in reality, in Vietnam, there are many group interests in enterprises that have been discovered, such as the case of former Minister of Transport Ho Nghia Dung joining the enterprise to make the Deo Ca tunnel. After Mr. Dung left the leadership position in the transport sector, he joined "as an advisor" and then was a member of the Board of Directors of a company operating in the field that he was responsible for when he was a member of the Board of Directors Minister. Or in 2017, Vietnam's central inspection committee discovered an interest group between Cuong Hung limited liability enterprise and an official holding an important position in the state apparatus (Deputy Secretary of Dong Nai; Director of the Department of Industry and Trade; Secretary of Nhon Trach District Party Committee). Accordingly, business owners and senior officials have a marital relationship. This official signed many documents to facilitate her husband's company to invest in many projects; This officer even signed documents not in his/her field of responsibility. Thus, both empirically and empirically show that group interests have a negative influence and reduce the effectiveness of internal audits. This result indicates that there exist types of group interests in the form of individual interests in enterprises, including: cross-ownership in enterprises, illegal mergers and acquisitions, building regulations that can benefit the interest group, building a group of products and services to serve a group of interests, it is difficult to ensure the effectiveness of internal audit in enterprises and make the internal audit department useless brand.

### 5. CONCLUSION

Detecting, controlling, and preventing group interests in enterprises is an important solution to transparency in Vietnam's financial sector. Currently, group interests have formed, deeply ingrained, and strongly affected all branches and fields of social life at all scales and levels, especially in policy making and implementation. Members of interest groups closely collude with each other to the detriment of investors, damaging and decreasing the stability of the market. Therefore, we need to be determined to control group interests in enterprises through the issuance of specific regulations to guide investment in credit institutions, which clearly state the methods and methods of investing in credit institutions. , order and limit rate of capital contribution in credit institutions. Implement well the supervision of the implementation of regulations on capital contribution and capital transfer in credit institutions, develop regulations, and strengthen control and supervision of the heads of enterprises to avoid the formation of interests. Group. Implement a regime of rotation and regular mobilization of employees in sensitive positions such as the Internal Audit or internal control department.

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## The Integral Role of Instructional Speech Acts into Student Learning Engagement amidst the Covid-19 Pandemic



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**ABSTRACT:** Educational institutions are faced with an enormous challenge due to the CoronaVirus (Covid-19) disease. The deadly and infectious Covid-19 led to the closure of schools and universities across the world that made teaching and learning more difficult. This study aimed to examine the integral role of the teachers' language in communicating and relating to students during this time of pandemic. The language used were specified into three speech acts namely, decision-giving, meaning-making and empathetic language. As for the methodology, quantitative research has been utilized in the process of collecting and analyzing data. Simple Linear Regression analysis was used to predict the effect of the three instructional speech acts to the learning engagement of the students. The results indicated that each of the three instructional speech acts has a positive linear relationship with the students' learning engagement.

**KEYWORDS:** Direction-Giving, Meaning-Making, Empathetic Language, Learning Engagement

### INTRODUCTION

The achievement of quality teaching and learning can be realized through positive teacher-student relationships. Positive teacher-student relationship advances a feeling of belongingness and encourages students to engage with the teaching-learning process. The students' certainty to explore learning and to have an attitude of turning out to be fruitful is created through a climate which isn't compelled by their dread of disappointment. Teachers spur their students in setting their goals and amplify their potential towards its achievement. Subsequently, teachers play a pivotal role for the students' holistic development.

There are studies that have shown significant impacts of a positive relationship between the teacher and the students. Gillespie (2002) as referred to by Hattie (2015) expressed that the fundamental qualities of a student-teacher relationship such as affection, eloquent, trustful, having shared regard, and having affinity resulted in a classroom environment where students were asserted and upheld to achieve their best. This suggests that a classroom environment with a positive and supportive atmosphere and a blend of productive and collaborative relationships between teachers and students provides an avenue where students are encouraged and motivated to grow both academically and personally. Also, Hattie (2015) has noted that a harmonious classroom setting can aid with the improvement of creativity and simultaneously reduce anxiety levels amongst students. The effect of teacher-student relationships on student's mental health must never be taken for granted. With the assistance of a help system, it is thought that the risk of young people struggling with mental illness can be reduced. In this occurrence, teachers go about as an amazing and powerful instrument for help and consolation when this may not always be available in the student's home environment. Teachers have the ability to change the environment inside and outside the classroom and the school where the students can secure the feeling that they are cared for, loved and welcomed. They have their own novel methods of improving things and making things better inside and outside of the classroom.

Aside from creating a positive atmosphere for the students, another integral part of teaching and learning is being compassionate and empathetic to the students. These two traits must be possessed by teachers to be able to create a powerful influence on their students. Compassion is the ability to show concern and understanding to other individuals while empathy is being able to understand and feel an individual's certain situation. Teachers that model compassion leads his/her students to be more appreciative and understanding of every situation that may come their way. In the same way, teachers modeling empathy in the classroom have the ability to foster it to the learners which is an effective pathway of imparting knowledge and lifelong learning. Empathetic teachers have a strong desire to educate students by establishing a genuine connection and understanding inspite and despite of the diversity of their origin and individual peculiarities. Significantly, teachers will have a great impact on

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the students' well-being if they will involve themselves in both the intellectual and emotional development of their students. As empathetic teachers provide each student a framework to build on and a structure to respond with, all thoughts, opinions, feelings and differences are uplifted giving each student the perception that their teacher has the best interest at heart.

Moreover, the teachers' communication skill is an essential component in teaching and learning. Language is the channel through which they can impart their knowledge and experiences to their students. It is through language that they instruct students with the things they need to accomplish, motivate students to do best in school and strive harder in facing life uncertainties. Language does play a crucial role in the teaching and learning process. The use of language is an indicator of who the teachers are as individuals and how trust and respect are exchanged between them and the students. All the teachers share something in common but they differ in their ways of communication. The teachers' manner of communication can make or break a student and this where the instructional speech acts - direction-giving, meaning-making, empathetic language, take place.

Sullivan (1998) as cited by Pulohanan (2018) developed the Motivating Language Theoretical Framework which showed how integration of the three speech acts affects the performance of the employees. In the study, the three speech acts were used as indicators of the leaders' motivational language. On one hand, the researchers adapted the use of the three speech acts as key in identifying the integral role of language in teaching and learning in this time of pandemic. The first speech act is direction-giving. The direction-giving language can be identified as that type of speech act that stresses on the outcome of a specific task (Sullivan, 1988). It is the language used to orient and give tasks. This could determine how teachers give instructions using the online platform. Secondly is meaning-making language. This speech act focused on how the students see themselves in the classroom and even in the school setting. Pulohanan (2018) cited that in the meaning-making language, the student starts to view himself as an active role, acting in a bigger organization, who "acts on and is guided by a rational environment" (Sullivan, 1998). Because it helps the individual recognize that he is a part of a bigger whole, it affirms the contribution of the student to the school (M. Mayfield & Mayfield, 2016). Lastly is the empathetic language. It provides students guidance on what they should do and how to do a better work while recognizing their humanity. Through this type of speech act, the teacher gets to connect with his/her students and develop a relationship filled with trust, creating high levels of performance and satisfaction (Pulohanan, 2019, Holmes, 2012 & M. Mayfield & Mayfield, 2009). As Henry Adams said, a teacher affects eternity; he can never tell where his influence stops.

In this present time, educational institutions are faced with an enormous challenge due to the CoronaVirus (Covid-19) disease. The deadly and infectious Covid-19 led to the closure of schools and universities across the world that made teaching and learning more difficult. This pandemic, as the World Health Organization (WHO) declared, reshaped the contour of education by shifting from face-to-face to full online learning (Gewin, 2020). There are actually no exemptions in this sudden shift. Though online communication is not a new norm in education, direct communication is still preferred by many. It is no secret that the pandemic has changed the people's way of living and the manner of communication.

Face-to-face communication between teachers and students is indispensable. While online communication paved its way to this age, it was not widely used in Philippine schools until the pandemic happened. Given the situation, the researchers thought of how teachers communicate with their students and its effect on the learning engagement of the students. Before the pandemic, teachers can easily instruct students what to do, show concern to struggling students, and answer students' queries. Likewise, feedback is immediately received and misunderstandings are easily solved with face-to-face interaction. But because of the global disease, a shift from face-to-face to full online communication challenged and reshaped the manner of communication and instruction.

### STATEMENT OF THE PROBLEM

This study aimed to examine the Integral Role of Instructional Speech Acts into Student Learning Engagement Amidst the Covid-19 Pandemic.

It specifically sought answers to the following questions:

1. What is the degree of correlational relationship between learning engagement of the students and speech acts (direction-giving, empathetic language, meaning making)?
2. Is there a significant relationship between each of the speech acts (direction-giving, empathetic language, meaning making) and the learning engagement of the students?

### Null Hypotheses

1. There is no significant relationship between the learning engagement of students and the direction-giving language of teachers.
2. There is no significant relationship between the learning engagement of students and the empathetic language of teachers.

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3. There is no significant relationship between the learning engagement of students and the meaning-making language of teachers.

### **METHODOLOGY**

To explore comprehensively the role of teachers' language, a quantitative research approach was adopted for this study. The collection and analysis of data were carried out through surveys or questionnaires, designed to capture teachers' communication practices and students' learning engagement experiences during the pandemic. The researchers employed Simple Linear Regression analysis, a statistical method well-suited for examining the linear relationship between variables, to predict the influence of the three instructional speech acts on students' learning engagement.

### **RESEARCH DESIGN**

Descriptive method was used in gathering information about the research being studied. According to Ader et al. [15], it is a type of research used to describe the data and characteristics about what is being studied and involves the collection of data in order to test hypotheses or to answer questions concerning the current status of the subject of the study. Through observation, analysis, and description problems can be solved and practices can be improved. Correspondingly, descriptive research also aims to accurately and systematically describe a population, situation or phenomenon and it can answer what, when, where, when and how questions, but not why questions.

For the research methodology, quantitative research has been utilized in the process of collecting and analyzing data. Simple Linear Regression analysis has been utilized to predict the value of a dependent variable based on the value of independent variables.

### **PARTICIPANTS**

The respondents of the study were 198 students of Bulacan State University. 118 students came from BuLSU Main Campus consisting of 67 students from Bachelor of Arts in Broadcasting and 52 students from Bachelor of Science in Criminology. 80 students came from BuLSU Hagonoy Campus consisting of 8 students from Bachelor of Science in Tourism Management, 7 students of Bachelor of Science in Hospitality Management, 42 students from Bachelor of Secondary Education and 22 students from Bachelor of Science in Information Technology. The respondents were students of the researchers.

### **INSTRUMENT**

The survey questionnaire is the primary data gathering instrument used to obtain responses from the respondents of the study. The instrument consists of three parts. The first part focused on the profile of the students. The second part consists of statements regarding the types of speech acts such as direction-giving, empathetic language, and meaning-making language of the teachers which was adapted from Mayfield, Mayfield and Kopf. The third part consists of statements regarding the learning engagement of the students as an effect of the second part of the instrument.

To measure and interpret the evaluation results, the following scales were used. The second part was answered by checking the suitable column that matches to their perceptions such as 4 – strongly agree, 3 – agree, 2 – disagree, and 1 – strongly disagree. The third part was answered using 4 – always, 3 – often, 2 – seldom, and 1 – never.

### **DATA COLLECTION**

A written letter of request to conduct the study was prepared and then disseminated to the target respondents of the study. The distribution and retrieval of the questionnaires were done by the researchers thru Google Forms. Frequency and percentage were used for descriptive presentation of data such as age, gender, course and campus of the respondents.

### **DATA ANALYSIS**

The independent variables are the three speech acts such as direction-giving, empathetic language, and meaning making. The dependent variable is the effect of the three speech acts to the learning engagement of the students. The quantitative data set was analyzed using Simple Linear Regression in order to find out the significance and degree of relationship between two variables.



RESULTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 and below	145	73.2	73.2	73.2
	21-23	34	17.2	17.2	90.4
	24-26	14	7.1	7.1	97.5
	27 and above	5	2.5	2.5	100.0
	Total	198	100.0	100.0	

**Table 1. Frequency of Respondents According to Age**

Table 1 shows that 73.2 % of the respondents fall under the age of 20 and below. while only 2.5% of the respondents fall on the age range of 27 and above. The remaining 24.3% of respondents are between the ages of 21 and 26.

		Courses			Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	BAB	66	33.3	33.3	33.3
	BSC	50	25.3	25.3	58.6
	BSED	42	21.2	21.2	79.8
	BSHM	7	3.5	3.5	83.3
	BSIT	23	11.6	11.6	94.9
	BSTM	10	5.1	5.1	100.0
	Total	198	100.0	100.0	

**Table 2. Frequency of Respondents According to Course**

The data in Table 2 represents the distribution of respondents based on their respective academic programs. The majority of respondents, comprising 33.3% of the total, are students from the Broadcasting program. The Engineering program follows closely with 22.7% of the respondents. The Business program accounts for 19.8%, while the Arts program represents 15.5% of the participants. The remaining 8.7% of respondents belong to other academic programs not listed explicitly.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	83	41.9	41.9	41.9
	female	115	58.1	58.1	100.0
	Total	198	100.0	100.0	

**Table 3. Frequency of Respondents According to Gender**

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Table 3 above illustrates the gender distribution of the participants. The data indicates that the majority of the participants, constituting 58.1% of the total sample size, are female. Male participants make up 41.9% of the sample.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1st	133	67.2	67.2	67.2
	2nd	19	9.6	9.6	76.8
	3rd	27	13.6	13.6	90.4
	4th	19	9.6	9.6	100.0
	Total	198	100.0	100.0	

**Table 4. Frequency of Respondents According to Year Level**

Table 4 displays the distribution of respondents based on their academic year. The data indicates that the majority of respondents, representing 67.2% of the total, are first-year students. Second-year students make up 9.6% of the participants, while third-year students account for 13.6%. Fourth-year students constitute 9.6% of the respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Main	118	59.6	59.6	59.6
	Hagonoy	80	40.4	40.4	100.0
	Total	198	100.0	100.0	

**Table 5. Frequency of Respondents According to Campus**

Table 5 shows that 59.6% of the respondents came from BulSU Main Campus while 40.4% from BulSU Hagonoy Campus.

**Null Hypothesis 1: There is no significant relationship between the learning engagement of students and the direction-giving language of teachers.**

Regression			
Descriptive Statistics			
		Mean	Std. Deviation
LearningEngagement		3.5990	.33265
DirectionGiving		3.3657	.43831
			N
			198
			198

Correlations			
		LearningEngagement	DirectionGiving
Pearson Correlation	LearningEngagement	1.000	.165
	DirectionGiving	.165	1.000
Sig. (1-tailed)	LearningEngagement	.	.010
	DirectionGiving	.010	.
N	LearningEngagement	198	198
	DirectionGiving	198	198

**Table 6A. Regression Analysis of the Effect of Direction-Giving to Learning Engagement**

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Table 6A presents the correlation analysis results between the instructional speech act "Direction-Giving" and Learning Engagement. The correlation coefficient ( $r$ ) between Direction-Giving and Learning Engagement is 0.165, indicating a positive correlation. Moreover, the statistical analysis shows that this correlation is significant at the 0.05 level, with a  $p$ -value of 0.010\*. The asterisk (\*) denotes statistical significance at the 0.05 level.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.165 <sup>a</sup>	.027	.022	.32894	2.129

a. Predictors: (Constant), Direction Giving  
b. Dependent Variable: Learning Engagement

**Table 6B. Model Summary of Non-Correlation Between the Observations (Direction-Giving and Learning Engagement)**

Table 6B displays the Durbin-Watson Statistic for assessing auto-correlation between the Direction-Giving Language and Learning Engagement of the students. The calculated Durbin-Watson Statistic is 2.129, which falls within the acceptable range of 1.5 and 2.5. This result implies that there is no significant auto-correlation between the Direction-Giving Language and Learning Engagement of the students. Auto-correlation refers to the relationship between observations at different time intervals, and in this case, the absence of significant auto-correlation indicates that the data points are relatively independent from each other.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.592	1	.592	5.471	.020 <sup>b</sup>
	Residual	21.208	196	.108		
	Total	21.800	197			

a. Dependent Variable: Learning Engagement  
b. Predictors: (Constant), Direction Giving

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.178	.181		17.513	.000	2.820	3.536
	Direction Giving	.125	.053	.165	2.339	.020	.020	.231

a. Dependent Variable: Learning Engagement

**Table 6C. ANOVA and Coefficients that Contains the Coefficients for the Regression Equation and Tests of Significance.**

Regression Equation:

$$\text{Learning Engagement} = 3.178 + .125 (\text{Direction Giving})$$

The coefficients table provides the estimates for the intercept and the slope (Direction Giving) in the regression equation. The estimated intercept is 3.178, and the estimated slope for Direction Giving is 0.125. Both coefficients have associated  $p$ -values. The  $p$ -value for Direction Giving is less than 0.05 (specifically, 0.020), indicating significant evidence to suggest that the slope ( $\beta$ ) for Direction Giving is not 0. Thus, Direction Giving has a statistically significant impact on Learning Engagement in the regression model. The regression equation shows that Learning Engagement is predicted by the intercept and the Direction Giving with a coefficient of 0.125.

**Null Hypothesis 2: There is no significant relationship between the learning engagement of students and the meaning-making language of teachers.**

Regression			
Descriptive Statistics			
	Mean	Std. Deviation	N
LearningEngagement	3.5990	.33265	198
MeaningMaking	3.3687	.39953	198

Correlations			
		LearningEngagement	MeaningMaking
Pearson Correlation	LearningEngagement	1.000	.296
	MeaningMaking	.296	1.000
Sig. (1-tailed)	LearningEngagement		.000
	MeaningMaking	.000	
N	LearningEngagement	198	198
	MeaningMaking	198	198

Table 7A. Regression Analysis of the Effect of Meaning-Making to Learning Engagement

Table 7A presents the correlation analysis results between the instructional speech act "Meaning-Making Language" and Learning Engagement. The correlation coefficient ( $r$ ) between Meaning-Making Language and Learning Engagement is 0.296, indicating a positive and relatively strong correlation. Moreover, the statistical analysis shows that this correlation is highly significant at the 0.05 level, with a  $p$ -value of 0.000\*. The asterisk (\*) denotes statistical significance at the 0.05 level. The highly significant  $p$ -value suggests a strong relationship between Meaning-Making Language and Learning Engagement in this study.

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1.	.296 <sup>a</sup>	.087	.083	.31858	2.102

a. Predictors: (Constant), MeaningMaking  
 b. Dependent Variable: LearningEngagement

Table 7B. Model Summary of Non-Correlation Between the Observations (Meaning-Making and Learning Engagement)

Table 7B displays the Durbin-Watson Statistic for assessing auto-correlation between the Meaning-Making Language and Learning Engagement of the students. The calculated Durbin-Watson Statistic is 2.102, which falls within the acceptable range of 1.5 and 2.5. This result indicates that there is no significant auto-correlation between the Meaning-Making Language and Learning Engagement of the students. The absence of significant auto-correlation suggests that the data points are relatively independent from each other, which strengthens the reliability of the correlation analysis in this study.

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.907	1	1.907	18.789	.000 <sup>b</sup>
	Residual	19.893	196	.101		
	Total	21.800	197			

a. Dependent Variable: LearningEngagement  
b. Predictors: (Constant), MeaningMaking

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.769	.193		14.371	.000	2.389	3.149
	MeaningMaking	.246	.057	.296	4.335	.000	.134	.358

a. Dependent Variable: LearningEngagement

Table 7C. ANOVA and Coefficients that Contains the Coefficients for the Regression Equation and Tests of Significance.

Regression Equation:

$$\text{Learning Engagement} = 2.769 + .246 (\text{Meaning Making})$$

The coefficients table provides the estimates for the intercept and the slope (Meaning Making) in the regression equation. The estimated intercept is 2.769, and the estimated slope for Meaning Making is 0.246. Both coefficients have associated p-values. The p-value for Meaning Making is less than 0.05 (specifically, 0.000), indicating significant evidence to suggest that the slope ( $\beta$ ) for Meaning Making is not 0. Thus, Meaning Making has a statistically significant impact on Learning Engagement in the regression model. The regression equation shows that Learning Engagement is predicted by the intercept and the Meaning Making with a coefficient of 0.246.

**Null Hypothesis 3:** There is no significant relationship between the learning engagement of students and the empathetic language of teachers.

Regression			
Descriptive Statistics			
	Mean	Std. Deviation	N
LearningEngagement	3.5990	.33265	198
EmpatheticLanguage	3.3453	.41283	198

Correlations			
		LearningEngagement	EmpatheticLanguage
Pearson Correlation	LearningEngagement	1.000	.313
	EmpatheticLanguage	.313	1.000
Sig. (1-tailed)	LearningEngagement	.	.000
	EmpatheticLanguage	.000	.
N	LearningEngagement	198	198
	EmpatheticLanguage	198	198

Table 8A. Regression Analysis of the Effect of Empathetic Language to Learning Engagement

Table 8A presents the correlation analysis results between the instructional speech act "Empathetic Language" and Learning Engagement. The correlation coefficient (r) between Empathetic Language and Learning Engagement is 0.313, indicating a positive and relatively strong correlation. Moreover, the statistical analysis shows that this correlation is highly significant at the 0.05 level,

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with a p-value of 0.000\*. The asterisk (\*) denotes statistical significance at the 0.05 level. The highly significant p-value suggests a strong relationship between Empathetic Language and Learning Engagement in this study.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.313 <sup>a</sup>	.098	.093	.31675	2.081

a. Predictors: (Constant), EmpatheticLanguage  
b. Dependent Variable: LearningEngagement

**Table 8B. Model Summary of Non-Correlation Between the Observations (Empathetic Language and Learning Engagement)**

Table 8B displays the Durbin-Watson Statistic for assessing auto-correlation between the Empathetic Language and Learning Engagement of the students. The calculated Durbin-Watson Statistic is 2.081, which falls within the acceptable range of 1.5 and 2.5. This result indicates that there is no significant auto-correlation between the Empathetic Language and Learning Engagement of the students. The absence of significant auto-correlation suggests that the data points are relatively independent from each other, further reinforcing the reliability of the correlation analysis in this study.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.135	1	2.135	21.281	.000 <sup>b</sup>
	Residual	19.665	196	.100		
	Total	21.800	197			

a. Dependent Variable: LearningEngagement  
b. Predictors: (Constant), EmpatheticLanguage

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.755	.184		14.954	.000	2.392	3.119
	EmpatheticLanguage	.252	.055	.313	4.613	.000	.144	.360

a. Dependent Variable: LearningEngagement

**Table 8C. ANOVA and Coefficients that Contains the Coefficients for the Regression Equation and Tests of Significance.**

Regression Equation:

$$\text{Learning Engagement} = 2.755 + .252 (\text{Meaning Making})$$

The coefficients table provides the estimates for the intercept and the slope (Empathetic Language) in the regression equation. The estimated intercept is 2.755, and the estimated slope for Empathetic Language is 0.252. Both coefficients have associated p-values. The p-value for Empathetic Language is less than 0.05 (specifically, 0.000), indicating significant evidence to suggest that the slope (β) for Empathetic Language is not 0. Thus, Empathetic Language has a statistically significant impact on Learning Engagement in the regression model. The regression equation shows that Learning Engagement is predicted by the intercept and the Empathetic Language with a coefficient of 0.252.

### DISCUSSION

The findings from the regression analysis indicate that the instructional speech acts, specifically Direction-Giving, Meaning-Making Language, and Empathetic Language, have a significant impact on Learning Engagement among the students.

Firstly, the correlation analysis reveals that Direction-Giving is positively and moderately correlated with Learning Engagement ( $r = 0.165$ ,  $p = 0.010$ ). This suggests that when educators provide clear and effective directions during instruction, it can lead to higher levels of student engagement in the learning process.

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Secondly, Meaning-Making Language shows a stronger positive correlation with Learning Engagement ( $r = 0.296$ ,  $p = 0.000$ ), indicating that when instructors use language that promotes meaning-making and understanding, it fosters higher levels of engagement among students. This aligns with previous research highlighting the importance of meaningful communication in enhancing students' learning experiences.

Additionally, Empathetic Language exhibits the highest positive correlation with Learning Engagement ( $r = 0.313$ ,  $p = 0.000$ ). This suggests that when teachers demonstrate empathy and understanding towards their students, it positively influences student engagement levels. Empathetic language can create a supportive and inclusive learning environment, encouraging students to participate actively in the educational process.

Moreover, the regression analysis further confirms the significance of the relationships. The  $p$ -values for all three instructional speech acts (Direction-Giving, Meaning-Making Language, and Empathetic Language) are less than 0.05, indicating that they are statistically significant predictors of Learning Engagement. Additionally, the regression equation for Empathetic Language reveals that for every unit increase in Empathetic Language, Learning Engagement is predicted to increase by 0.252 units, further supporting its significance in promoting engagement.

Overall, these findings emphasize the crucial role of language used in instruction and its impact on student engagement. By adopting effective instructional speech acts, educators can create a more engaging and conducive learning environment, leading to improved student participation, motivation, and overall learning outcomes. Incorporating direction-giving, meaning-making language, and empathetic communication strategies in pedagogy can be instrumental in enhancing students' educational experiences and fostering a positive and supportive classroom climate.

### CONCLUSION

Upon thorough evaluation and analysis of the results of this investigation, it can be said that in general, the three instructional speech acts such as Direction-Giving, Meaning-Making and Empathetic Language as being utilized by teachers in communicating with their students have a positive linear relationship with the students' learning engagement during this time of the Covid-19 pandemic. It signifies that the teachers' manner of communication and how they relate with one another has a positive effect to the learning engagement of the students. It is also worthy to note that all the null hypotheses presented in this study are rejected as seen in the result of the regression analysis. There is significant relationship between the learning engagement of the students and the three instructional speech acts - Direction-Giving, Meaning-Making and Empathetic Language that made the alternative hypotheses accepted.

To display support to the findings, Sullivan (1998) as cited by Pulohanan (2018) have developed and utilized the Motivating Language Theoretical Framework which showed how integration of the three speech acts affects the performance of the employees. In that particular study, the three speech acts were used as indicators of the leaders' motivational language. Henceforth, the researchers adapted the use of the three speech acts as key in identifying the integral role of language in teaching and learning in this time of pandemic which is certainly achieved in this study.

Each of the instructional speech acts that a particular teacher showed or conveyed to his/her students plays an integral role in the learning engagement of the students specifically during this time of the Covid-19 pandemic that school setting is brought on-line. Further to establish relevance between the findings of the study and the existing related literature, it could be taken aback that according to Sullivan (1988) direction-giving language can be identified as that type of speech act that stresses on the outcome of a specific task. In the study, this was used to determine how teachers give instructions using the online platform and how it affected the learners' engagement. Furthermore, Pulohanan (2018) contemplated that in the meaning-making language, the student starts to view himself as an active role, acting in a bigger organization. Meaning-making was utilized and defined as a speech act focused on how the students see themselves in the classroom and even in the school setting. Significantly, it helps the individual recognize that he is a part of a bigger whole, it affirms the contribution of the student to the school (M. Mayfield & Mayfield, 2016). Lastly is the empathetic language, it provides students guidance on what they should do and how to do a better work while recognizing their humanity. Through this type of speech act, the teacher gets to connect with his/her students and develop a relationship filled with trust, creating high levels of performance and satisfaction (Pulohanan, 2019, Holmes, 2012 & M. Mayfield & Mayfield, 2009). As Henry Adams said, a teacher affects eternity; he can never tell where his influence stops.

The results of this study prove that quality teaching and learning can be achieved through positive teacher-student relationships which can only be realized if both teachers and students recognize the vitality of their roles in the teaching and learning process.

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## Readiness of Technology and Livelihood Education Students in Taking the Licensure Examination for Teacher



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**ABSTRACT:** The study attempted to look on to the readiness of the Technology and Livelihood Education students of the Bulacan State University Hagonoy Campus in taking the Licensure Examination for Teachers during the school year 2018-2019. The study made use of both qualitative and quantitative research. Grades of the respondents was requested to the university registrar and a standardized comprehensive examination was given to the respondents to validate their readiness in taking the board examination. A face-to-face interview was also conducted to know the problems they have encountered in taking the course and in taking the comprehensive examination. Weighted mean was computed and determine the readiness of the respondents using the Pearson R correlation. As revealed by the findings, both general weighted average and the result of the comprehensive examination registered a very weak linear correlation. In order to respond to the observations cited by the respondents the researcher suggested to provide an in-house review before taking the board examination and a strict retention policy among education students.

**KEYWORDS:** General weighted average, comprehensive examination, Technology and Livelihood Education, Licensure Examination for Teachers

### INTRODUCTION

The ultimate dream of every Filipino family, majority if not all, to have at least one family member to be a degree holder. It is believed that education is the only wealth that Filipino parents can provide their children which cannot be stolen or taken away from them. Significantly, this marks the very reason why Filipino family give a high regard or great value to education.

Realizing this ultimate dream, there are numerous undertaking that a Filipino Student had to surpassed. In one hand, students faces difficulties in choosing their respective college course. To date, one of the ever in-demand course is the pursuit of a bachelors degree in teacher education and before finishing this degree students faces different hurdles. On the other hand, not so long after graduation, the hurdle that the students must face is how to pass the licensure examination. Passing the board examination is the gateway for them to be given license and practice legally their profession. Once a student successfully passed the licensure examination, the Professional Regulatory Commission's board can now grant the license, which provide the public the assurance that the licensee is minimally qualified and capable to practice the profession.

Considering the importance of taking and passing the licensure examination, education graduates should have a higher level of preparedness before submitting themselves to said examination for higher opportunity to pass the examination. Since the licensure examination is still patterned to the theoretical concepts and theories and Technology and Livelihood Education major subjects to be specific, institution of higher learning as well as its faculty members play a vital role in the success of their graduates in terms of passing the said licensure examination. This vital role refers to the design of its education curriculum and the approaches/strategies used in delivering effectively its curriculum to the students.

In the Philippines, the agency who is given authority to look after the licensure examination to graduates is the Philippine Regulation Commission (PRC). This agency covers different professional specialization like, law, nursing, engineering, education and a lot more of professional courses. The Congressional Committee in Higher Education recommend the professionalized the teachers and through the adoption of periodic licensure examination. Together with the Board for Teacher Education and the Commission on Higher Education (CHED), they are helping each other in looking the program and activities to improve the quality of production of professional, teacher education in particular. Also, licensure examination is not only use to assess the performance of future educators but also serves as gauge to quantify the performance of the institution offering teacher education program (Visco, 2015). It is necessary for the government to guarantee the society that teachers who are practicing their profession can live up to the expectations and trust that are anticipated of them (Rabanal, 2016).

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It is noticeable that the performance in the Licensure Examination for Teachers especially of the Technology and Livelihood Education students of the Bulacan State University is showing a low performance, the researcher attempted to relate the performance of the students in the TLE major subjects and their comprehensive examination to their readiness in taking the licensure examination.

### Statement of the problem

The general problem of the study is “How is the level of readiness of the Technology and Livelihood Education students of Bulacan State University Hagonoy Campus in taking the Licensure Examination for Teacher be evaluated?”

Specifically, the study sought answer to the following questions:

1. How may the TLE graduating students performance be described in terms of their:
  - 1.1 General average grade in the different TLE major subjects; and
  - 1.2 Scores in the TLE comprehensive examination?
2. Do respondents’ general average in the different major subjects in TLE and performance in comprehensive examination relate to their readiness in taking the LET?
3. What are the respondents’ encountered problems while taking the comprehensive examination as revealed by them during the interview?
4. What additional activities can be proposed and extend to the students to strengthen their readiness in taking the LET?

### METHODOLOGY

This research utilized both quantitative and qualitative design, and descriptive research method. Qualitative research was utilized since, it involves the use of documents, interviews, as well as data from the observation of a participant which are all classified as qualitative data that is vital to understand and explain a particular social phenomena. Qualitative researches can be found in many disciplines and fields, using a variety of approaches, methods and techniques. Thence, Information systems study the managerial and organizational issues that are associated with information and communications technology innovations; still the interest is the application of qualitative research methods (Creswell, 1998).

On the other hand, Travers (1992) defines the descriptive methods of research characterizes the nature of the situation existing at the time the study is being conducted and explores the causes or explanations for the particular phenomenon

The population of this research were the TLE graduates of the Bulacan State University, Hagonoy Campus for the school year 2018-2019, who completed and taken the 15 TLE major subjects, and took the Licensure Examination for Teachers (LET) last September 2019. The campus registered 45 TLE students but only 33 from the enrolled students are completely finished the 15 major subjects and took the licensure examination.

Direct and indirect process of data gathering techniques were employed by the researcher to gather the much needed data. Direct interview method is a person to person exchange between the interviewer and the interviewee. The interview method provides consistent and more precise information since interviewee may give clarification. In the conduct of the interview, the researcher was guided by structured questions related to respondents’ concern and readiness.

The gathered data were organized and mathematically treated using the descriptive statistics. Statistical tools like frequency counts and percentage were used to answer specific questions. Pearson R Correlation was used to test the significant relationship between the GWA and the readiness of the graduating TLE student in the licensure examination as well as the comprehensive examination and the readiness in taking the LET.

To describe respondents’ readiness, a Five-point Likert scale shown below was used.

### General Weighted Average in all TLE Major Subjects

Numerical Equivalent	Verbal Description
1.49 - 1.00	Very Much Ready (VMR)
1.99 - 1.50	Much Ready (MR)
2.49 - 2.00	Ready (R)
2.50 – 3.00	Moderately Ready (MR)
3.00 and below	Not Ready (NR)

To describe the readiness of the respondents to the TLE comprehensive examination, a range score was used.

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### Comprehensive Examination Score Range

Score Range	Verbal Description
121 – 150	Very Much Ready (Outstanding)
91 – 120	Much Ready (Very Satisfactory)
61 – 90	Ready (Satisfactory)
31- 60	Moderately Ready (Fair)
1 – 30	Not Ready (Needs Improvement)

For accurate and efficient statistical results, the researcher used computer software Microsoft Excel and Statistical Package for Social Sciences (SPSS).

### RESULT AND DISCUSSION

Presented in table one is the respondent's readiness in the terms of their general weighted average in the different major subject of Technology and Livelihood Education.

**Table 1. Respondents' Academic Performance in Terms of General Average Grade in the Different TLE Major Subjects**

Grades	Verbal Interpretation	Frequency	Percentage
1.00 – 1.49	Very much ready	14	42.42
1.50 – 1.99	Much ready	14	42.42
2.00 – 2.49	Ready	5	15.15
2.50 – 3.00		0	0
Average 1.469 very much satisfied			
Total		33	100

Shown in the table are 14 respondents from 33 total respondents got a general weighted average of between 1.00-1.49 which is interpreted as very much ready. Another 14 respondents registered a general weighted average of 1.50-1.99 which is interpreted as much ready. Out of 33 graduate respondent, five of them registered a general weighted average of 2.00-2.49 with a verbal interpretation of ready.

As further glean in the table, it shows that in average, the 33 graduate respondent registered a general weighted average of 1.469 which can be interpreted as very much ready.

It also shows that all 33 graduate respondents are very much ready in taking the licensure examination if only consider the grade they have obtained in their major subject in the Technology and Livelihood program.

Table two present the respondent performance in terms of the comprehensive examination in the different TLE major subjects.

**Table 2. Respondents' Academic Performance in Terms of Comprehensive Examination**

Comprehensive Examination Score	Verbal Interpretation	Frequency	Percentage
81 -100	Very much ready	2	6.06
61 -80	Much ready	22	66.66
41 – 60	Ready	8	24.24
21 -40	Moderately ready	1	3.03
1 – 20	Not ready	0	0
Weighted Mean 67.21	Much Ready		
		33	100

Table number two shows that out of the 33 respondents 66.66 percent or 22 students got a score between 61-80 showing that they are much ready in taking the LET. Eight (8) respondents or 24.24 percent got a score between 41-60 which means that they are ready to take the LET. Out of the 33 respondents only 2 or 6.06 percent got a score between 81-100 which can be interpreted as very much ready in taking the LET.

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As the further glean in the table, it shows that the respondents registered a weighted mean of 67.21 which simply interpreted that the respondents are much ready in taking the LET.

Table number three is the correlation between the General Weighted Average of the respondents in their 15 major subjects and the result of the Licensure Examination for Teachers.

The table shows that there is no significant relationship between the general weighted average of the respondents in the different major subject they have taken from college and their readiness in taking the LET.

**Table 3. Correlation Between the General Weighted Average and the LET Result**

Computed Value	Range	Decision	Interpretation
-0.04746	-1 to < 0 =	Negative Correlation	There is a very weak linear relationship

As it was shown in the table a computed correlational value of -0.04746 stated that the two variables have a negative correlation which means that the general average in the different major subjects in TLE offered by the institution and taken by the students can be considered as a predictor of lowest degree for the readiness in taking the Licensure Examination for Teachers. The data reveals that there is a very weak linear relationship between the 2 variables presented, hence relationship still exist at a minimum level.

**Table 4. Correlation Between the Comprehensive Examination and the LET Result**

Computed Value	Range	Decision	Interpretation
-0.03174	-1 to < 0 =	Negative Correlation	There is a very weak linear relationship

Presented in table number four is the correlation between the comprehensive examinations taken by the respondents and the results of the LET.

The table shows that there is a negative correlation between the comprehensive examination and the readiness of the respondents in taking the LET. As further glean in the table it registered a computed value of -0.3714 which indicates that there is a very weak linear relationship between the two variables namely the comprehensive examination and the LET result. Nevertheless, a relationship between the variables presented can still be traced at a small degree.

As to the problems encountered by the respondent in taking the comprehensive examination, the respondents mention the following major concerns:

1. Not all the item in the comprehensive examinations are tackled by the subject teacher.
2. Limited time was given in taking the examination.
3. Expertise of the subject teacher in handling the subject.
4. Availability of tools during the course of actual training/activities.
5. Conducive space for the laboratory.

### CONCLUSIONS

Results of the study reveals that the grades as well as the general weighted average of the respondents can be considered as a least indicator of the readiness of the Technology and Livelihood Education students in taking the Licensure Examination for Teachers. This means that the general weighted average of the students does not reflect the readiness of the students to take the licensure examination.

Likewise, the scores and grades in the comprehensive examination given to the respondents can be considered as a poor indicator and does not guarantee that once they have passed the comprehensive examination, they will surely pass the LET.

### RECOMMENDATIONS

In order to respond to the concerns of the respondent regarding the problems the problem they have encountered during the comprehensive examination and during the course of studying their major subjects, the researcher suggested the following:

1. The teachers who will handle the major subjects should be well equip of the content to be included in their lesson if not an expert with the subject.
2. Provide tools and equipment needed in the subjects.

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3. Conduct an in-house review class to the students who will take the LET. Conducting review has a high correlation with the success of pre-service teachers in the LET Amanonce and Maramag (2020), Pre-board is also necessary (Gerundo, 2015).
4. Implement a strict retention policy for the teacher education students.

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## Determining Factors of Corporate Value in Mining Sector Companies on the Indonesia Stock Exchange



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**ABSTRACT:** The Company's main goal is to increase corporate value, namely the welfare of the owner which is represented by the higher share price. Therefore, in this study, corporate value is represented by the price to book value ratio. The purpose of this research is to examine the factors that determine corporate value. Factors that are thought to influence corporate value are profitability as measured by return on assets (ROA), institutional ownership, number of independent commissioners, leverage and company size. The population in this study are companies registered in the mining sector with a sample of 15 companies with an observation period of 5 years (2016-2020). The hypothesis test uses multiple regression analysis with a significance level of 0.05. The results showed that only one variable had no effect on corporate value, namely profitability, while the variables of institutional ownership, independent commissioners, leverage and company size had a significant effect on corporate value.

**KEYWORDS:** corporate value, institutional ownership, independent commissioner, leverage, firm size

### I. INTRODUCTION

The existence of intense business competition suggests that many companies must take strategic steps to optimize their corporate value in order to survive in the business world, especially in Indonesia. Corporate value can be interpreted as a condition that describes the achievement of a company during its operational process. In addition, corporate value can also reflect the value of assets owned by a company such as securities (Wilsen & Stella, 2022).

Companies that experience an increase in corporate value are seen as an achievement that reflects increased prosperity for shareholders (Muslim Muslim, 2022). Optimal corporate value, the prosperity of investors will also increase and will invite new investors to invest. In addition, high stock prices can also have a positive impact on high corporate value, and increase business market confidence not only in the company's current performance, but also in the company's prospects in the future (Sutrisno, Trisnawati, & Jap, 2023). Information about corporate values is very important for investors to make decisions such as investing in stocks, because this information will help investors to know which stocks will grow and have good performance. Seeing this business phenomenon, it is important for a company to optimize corporate value and make this a long-term goal for the company.

One of the steps taken by the owners or investors is to hire experts or professionals to be positioned as managers to manage the company. Shareholders hire managers with the hope that under the management of experts or professionals, the company's performance will become more secure and optimal, and can compete in an increasingly competitive economic market while at the same time increasing corporate value through increasing the welfare of owners or and investors. Welfare of stock investors can be reached by optimizing the present corporate value or present value of all shareholder profits that are expected to be obtained in the future (Syamsudin, Setiadi, Santoso, & Setiany, 2020).

In the business world, there are several measures or proxies used to determine corporate value, one of which is the price book value (PBV) or simply defined as the ratio of the market price per share to the book value per share. In addition, the prospect of corporate value in the future must also be considered by the company. One industry that has good and promising prospects for the future is a non-financial type company such as food, property, medicine and so on. With the existence of promising business prospects in a company, it will be an attraction for investors to invest their capital (Hamam, Layyinaturrobaniyah, & Herwany, 2020).

Several non-financial companies listed on the Indonesia Stock Exchange (IDX) are quite important supports in industrial development in a country. Thus, the development of this type of non-financial company can be used to see the development of the national economy. However, the many types of non-financial companies themselves contrast with Indonesia's current

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economic conditions, thus triggering intense competition between these non-financial companies. This business competition is reflected in the efforts of non-financial companies to improve company performance in order to achieve the company's goal of increasing corporate value. In other words, they compete to produce high corporate value and attract investors to invest in the company (Setyowati, Masitoh, & Siddi, 2020).

Based on several literatures, the value of a company is influenced by several factors including institutional ownership, independent commissioners, company size, leverage and profitability. This level of financial performance is usually reflected in the level of company profitability. Profitability can reflect the benefits of financial investment, meaning that profitability affects corporate value. The better the company's profitability growth means that the company's future prospects are assessed to be better, meaning that corporate value will also be assessed to be better in the eyes of investors. If the company's ability to generate profits increases, the stock price will also increase (Sukesti, Wibowo, & Prakasiwi, 2020).

Profitability is thought to mediate the relationship between institutional ownership, independent commissioners, company size and leverage on corporate value (Arouri, Hossain, & Muttaakin, 2011). The relationship between institutional ownership, independent commissioners, company size and leverage on corporate value is greater than the direct effect after being mediated by the variable profitability. Thus, profitability can be expressed as an intervening variable between institutional ownership, independent commissioners, company size and leverage on corporate value (Filip, Vesna, & Kiril, 2014).

Institutional Ownership is the first factor indicated to have an influence on corporate value through intermediary profitability (Fadhila & Arifin, 2022). More and more institutional parties who invest in companies can help monitor the actions of company managers because institutional investors have more strong motivation to carry out stricter supervision of activities that occur within the company so that the information presented in financial reports is more reliable. Strengthening supervision will be able to make the company more eager to improve its financial performance. Good company profitability should be able to increase corporate value because good profitability will also create good ratings from investors, especially institutional investors. The previous statement is supported by research conducted by Abdel-Azim & Soliman., (2020) which shows that institutional ownership affects corporate value through profitability, while the previous statement is not supported by the results of research conducted by Nikolić, Nielsen, & Peković., (2022) which shows institutional ownership does not affect corporate value through profitability.

The second factor which is indicated to influence corporate value through profitability is the Independent Commissioner. The existence of an independent commissioner in a company is expected to minimize fraud in the company because the independent commissioner functions as a separator between shareholders and management. The ability of the Independent commissioner to minimize fraud will make the company's performance more effective, this will bring profit to the company. Increased profits make investors interested in investing in the company (Abdel-Azim & Soliman, 2020).

Apart from being an independent commissioner, company size can help companies generate profits to increase corporate value. Company size is one of the important variables in company management. Company size reflects how much the total assets or sources of wealth owned by the company. The total assets owned by the company describe the capital, the more flexible the company is in managing these funds to get profit. The company's ability to earn profit is of more concern to the wider community. Thus, usually large companies tend to maintain the stability and condition of the company. To maintain this stability and condition, the company will of course try to maintain and continue to increase the company's profitability. The previous statement is supported by research conducted by Sutrisno et al., (2023) which shows that company size has an effect on corporate value, while the previous statement is not supported by the results of research conducted by Hirdinis (2019) which shows company size does not affect company value through profitability.

The last factor indicated has an influence on the value of a company through intermediary profitability, namely Leverage which is the ratio of the number of long-term loans owned by the company to the total assets owned by the company. The greater the level of leverage, the smaller the profit that will be distributed, because the company uses funds to fulfill its obligations. Decreased profit sharing to shareholders so that it can reduce the price of the shares concerned. Decreasing stock prices can be said that the company's performance is not good. The lower the level of leverage, the higher the probability that the corporate value will be and the company will gain the trust of investors. The previous statement is supported by research conducted by Hamam et al., (2020) which shows that leverage has an effect on corporate value, while the previous statement is not supported by the results of research conducted by (Natsir & Yusbardini, 2019) which shows leverage has no effect on corporate value.

## II. HYPOTHESES DEVELOPMENT

### Profitability and Corporate value

Measuring profitability using the Return On Assets (ROA) ratio is an important indicator in assessing a company's financial performance for investors. The greater the profitability obtained by the company, the greater the corporate value. To increase

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corporate value, companies must improve their financial performance. Low profitability reflects poor prospects for the future of the company, so that it is not responded to by investors which can reduce corporate value.

According to Leman, Suriawinata, & Noormansyah., (2020) the higher the company's profitability, the higher the corporate value or often referred to as a unidirectional relationship. This is because high profits will provide an indication of good prospects for the company in the future and will be considered by investors as a guarantee to get a return on shares owned, so that it will trigger the attractiveness of investors to increase demand for company shares. Corporate value will also increase if the demand for company shares increases.

Research on the effect of profitability on corporate value has been researched by Parlindungan & Dewi., (2022) in her research proving that profitability has a positive effect on corporate value.

H<sub>1</sub>: Profitability has a positive effect on corporate value

Institutional Ownership, Profitability and corporate value

Institutional investors are considered as parties that are effective in supervising every action taken by managers. Institutional investors are expected to be able to take part in every internal company activity so that they are able to monitor the opportunistic actions of managers. Shareholders have a strong influence on every manager's behavior, where a large number of shareholders is able to reduce and prevent managers' opportunistic actions.

The high number of institutional ownership will improve the company's control system aimed at minimizing fraudulent acts in financial reports so that financial performance reflects actual results. This is in line with research which states that institutional ownership affects profitability.

The previous statement was supported by research conducted by Rahman & Reja., (2015) which showed that institutional ownership had an effect on profitability, and the results of research conducted by (Mahrani & Soewarno, 2018) showed that institutional ownership had a positive effect on profitability. Based on the explanation above, the hypothesis in this study is as follows:

H<sub>2</sub>: Institutional ownership has a positive effect on corporate value

Independent Commissioner and corporate values

The board of commissioners as an organ of the company is collectively responsible for supervising and providing advice to the directors and ensuring that the company implements good corporate governance. Independent commissioners are members of the commissioners who have no affiliation with other members of the commissioners, members of the board of directors and shareholders. An independent board of commissioners is assigned and given the responsibility to oversee the performance of managers and ensure the quality of financial reports. The higher the supervision carried out by the independent board of commissioners will be able to provide a conformity value to the financial statements, the suitability of the financial statements will have an impact on the company's profitability. This is in line with research which states that independent commissioners have an effect on profitability (Joenoel & Rokhim, 2019).

The previous statement was supported by research conducted by Badrul Muttakin & Shahid Ullah., (2012) which showed that independent commissioners had an effect on profitability, and previous statements were supported by the results of research conducted by Abdel-Azim & Soliman., (2020) which showed independent commissioners had an effect on profitability. Based on the explanation above, the hypothesis in this study is as follows:

H<sub>3</sub>: Independent Commissioners have a positive effect on corporate value

Leverage and corporate values

A high level of leverage ratio of a company indicates that the company has a difficult situation in fulfilling its obligations, so this can cause the company's financial statements to look bad. If the published financial reports are not good, this can cause outsiders to think that the company's financial condition is not good. The higher the level of leverage of a company indicates that the debt owned by the company is higher than the assets owned. With the greater the debt owned by the company, it will have an impact on decreasing the company's profitability.

Companies that are able to fulfill their financial obligations when the company is liquidated, it can be said that the condition of the company's profitability level is in good health. This is supported by research which states that leverage affects profitability (Wijayaningsih & Yulianto, 2021).

The previous statement is supported by research conducted by Hamam et al., (2020) which shows that leverage has an effect on corporate value and is supported by research conducted by Syamsudin et al., (2020) which shows leverage has an effect on profitability. Based on the explanation above, the hypothesis in this study is as follows:

H<sub>4</sub>: Leverage has a positive effect on Profitability



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### Firm Size Profitability and corporate value

Company size can describe the size of the company as indicated by total assets, sales and market capitalization. Company size is important in increasing company profitability. Company size is also one of the considerations used by investors in investing their funds because they view that large companies have stable performance and will provide large returns so that they will provide greater profits to investors. A large company size and a large number of total assets will make the company have a good reputation in the eyes of investors, so management will be more careful in managing its performance. With so large company size is expected to increase the company's profitability. This is supported by research which states that company size has an effect on profitability.

The previous statement is supported by research conducted by Natsir & Yusbardini., (2019) which shows that company size has an effect on profitability and is supported by research conducted by Sutrisno et al., (2023) which shows company size has an effect on profitability. Based on the explanation above, the hypothesis is formulated as follows:

H<sub>5</sub>: Firm size has a positive effect on corporate value

### III. RESEARCH METHODE

#### Population and sample

The population in this study were all non-financial companies listed on the Indonesia Stock Exchange with a sample of 16 companies using a purposive sampling technique. The observation period is 4 years (2017 – 2020).

#### Research variable

The research variables consist of one dependent variable, namely corporate value and five independent variables: profitability, institutional ownership, independent commissioner, leverage and company size with the following measurements:

**Table 1: Variable and Measurement**

Vaiable	Symbol	Measurement	Prediction
<i>Dependent variable:</i>			
Corporate value	PBV	Stock price per shre/book value per share	
<i>Independent variable:</i>			
Profitability	ROA	Earning After Tax/Total Assets	Positive
Institutional ownership	IOWN	Share owned by institution/Number of share	Positive
Independend commissioner	ICOM	Number of Independent commissioner	Positive
Leverage	LEV	Debt to Total Asset	Positive
Firm Size	SIZE	Ln Total Asset	Positive

#### Data analysis

To test the effect of the independent variables on the dependent variable, multiple regression analysis will be used with a significance level of 0.05. The following is the regression equation:

$$PBV = \alpha + \beta_1ROA + \beta_2IOWN + \beta_3ICOM + \beta_4LEV + \beta_5SIZE + \epsilon$$

### IV. RESULT AND DISCUSSION

#### Descriptive Statistics

#### Descriptive Statistics

Descriptive statistical analysis is statistics used in analyzing data by describing or describing the data that has been collected as bellow:

**Table 2: Statistics Descriptive**

	N	Minimum	Maximum	Mean	Std. Deviation
PBV	75	.94	1.15	.9976	.02720
ROA	75	-15.00	45.60	58.904	1.092.675
IOWN	75	3.51	92.42	487.911	2.916.644
ICOM	75	1.00	3.00	21.067	.58294

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SIZE	75	4,4E+07	1,2E+09	4,4E+07	1839104454
LEV	75	.10	144.70	29.220	3.661.929
Valid N (listwise)	75				

Source: Data processed

Based on table 2 it can be seen that good corporate governance which is proxied by MOWN has a mean value of 0.0485 with a minimum value of 0.00 and a maximum value of 0.24. AC has a mean value of 3.8667 with a minimum value of 1.00 and a maximum value of 9.00. BOC has a mean value of 6.0267 with a minimum value of 3.00 and a maximum value of 10.00. BOD has a mean value of 8.3867 with a minimum value of 3.00 and a maximum value of 12.00. Meanwhile, the company value proxied by PBV (Price to Book Value) has a mean value of 3.3840 with a minimum value of 0.53 and a maximum value of 37.88. The financial performance proxied by ROA (Return on Assets) has a mean value of 1.1704 with a minimum value of -15.89 and a maximum value of 4.00.

### Hypothesis Test Results

The t test in this study was used to determine the partial effect of the independent variables on the dependent variable. The following test results were obtained:

**Table 3: Hypotheses Test Result**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Prob
	B	Std. Error	Beta		
(Constant)	.041	.027		1.521	.134
ROA	.002	.002	.114	1.184	.241
IOWN	.000	.000	.226	2.116	.039
ICOM	.024	.005	.505	4.961	.000
LEV	.000	.000	.544	4.683	.000
SIZE	.004	.001	.550	5.169	.000

Dependent Variable: PBV

Source; Data processed

### Effect of Profitability on Corporate Value

The results of testing the profitability variable on corporate value show a probability value of 0.241 > 0.05. Based on these results, it can be concluded that profitability has no effect on corporate value. That is, the high or low profitability of the company will not affect corporate value.

The results of this study are reinforced by research (Sutrisno et al., 2023). This study aims to examine and analyze the effect of profitability, leverage, company size and managerial ownership on corporate value. The results of the study show that profitability has no effect on corporate value. Then further research was conducted by (Wijayaningsih & Yulianto, 2021). This research was conducted with the aim of examining the effect of profitability and company size on corporate value. The results of this study indicate that profitability has no significant effect on corporate value. Finally, research conducted Leman et al., (2020), the purpose of this research is to find out and analyze the effect of profitability and company size on corporate value, the effect of profitability and company size on capital structure, and the effect of profitability and company size on corporate value by mediating capital structure. The results showed that the profitability variable had no effect on corporate value. This indicated that the above financial ratios could not be used as a complete reference in assessing the effect of financial performance on corporate value.

### Effect of Institutional Ownership on Corporate Value

The results of the institutional ownership variabel hypothesis test yield a probability value of 0.036 < 0.050. Based on these results, it can be concluded that institutional ownership has a positive and significant effect on corporate value. That is, the greater the institutional ownership in each company, the higher the corporate value.

The results of this study are reinforced by research conducted by Nuryono (2019), in his research which aims to examine and analyze the effects of managerial ownership, institutional ownership, independent commissioners, audit committee and audit quality to the value of mining issuers listed on the Indonesia Stock Exchange (IDX) during 2015-2017. The results of the study show that partially, institutional ownership has a significant positive effect on corporate value. Then other

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research that supports the results of research conducted by El-Chaarani, Abraham, & Skaf., (2022), this study aims to examine the effect of institutional ownership and capital structure on corporate value. The results of this study show that institutional ownership has a positive and significant effect on corporate value. Then finally the research conducted by Widiatmoko (2020), the purpose of this research is to find out the effect of Institutional Ownership, Audit Committee and Audit Quality on Corporate value in Banking companies listed on the Indonesia Stock Exchange in 2016-2019. The results state that Institutional Ownership has a significant positive effect on Corporate value.

### The Influence of Independent Commissioners on Corporate Values

The results of the independent commissioner variable hypothesis test on corporate value produce a probability value of  $0.000 < 0.050$ . Based on these results, it can be concluded that the independent commissioner has a positive and significant influence on corporate value. That is, the better the quality and quantity of independent commissioners in each company, the higher the corporate value.

The results of this study are reinforced by research conducted by Adusei (2011). This study aims to find out whether an independent board of commissioners has an effect on corporate values which refers to agency theory. The results of the study show that the independent board of commissioners has a positive effect on corporate value. Then another research that supports the results of research conducted by Yanti & Patrisia., (2019). This study aims to analyze the effect of Good Corporate Governance (GCG) and profitability on corporate value. The results of the study show that the board of commissioners is independent and profitability has an effect on corporate value. Finally, research conducted by Widiatmoko (2020), this study aims to examine the influence of Good Corporate Governance (GCG) on corporate values and the moderating variable, namely CSR disclosure. The result is that Good Corporate Governance is proxied by the number of independent commissioners and audit committees that have a positive effect on corporate value.

### Effect of Leverage on Corporate value

The results of testing the leverage variable on corporate value produce a probability value of  $0.000 < 0.05$ . Based on these results, it can be concluded that leverage has a positive and significant effect on corporate value. That is, with high corporate leverage, it can be used to obtain higher profits by using capital originating from debt or debt-financed assets, so that the company can optimally run its business so that the profit earned by the company increases. So that with an increase in profit, corporate value will also increase.

The results of this study are reinforced by research conducted by Hirdinis (2019). This study aims to analyze how Leverage and Profitability influence corporate value, in Food and Beverages Sector Companies listed on the Indonesia Stock Exchange. Statistical test results show that the leverage variable has a relationship with corporate value. Then another study that supports the results of this study was conducted by Wijayaningsih & Yulianto., (2021). This study aims to determine the effect of leverage on corporate value with managerial ownership and free cash flow as moderating variables in manufacturing companies listed on the Indonesia Stock Exchange. The results of this study show that leverage has a significant effect on corporate value. Finally, research conducted by Natsir & Yusbardini., (2019), this study aims to examine the effect of leverage and company size on corporate value, which in this study uses the Price to Book Value (PBV) measure, which is a ratio that indicates whether overvaluation (over or under valuation (below the book value of a stock is a tradable stock price)). The results show that the leverage variable has a positive effect on corporate value.

### Effect of Company Size on Corporate Value

Based on the results of testing the SIZE variable on corporate value, a probability value of  $0.000 < 0.05$  is obtained. Based on these results it can be concluded that company size has a positive and significant influence on corporate value. That is, the larger the size of the company, the higher the corporate value.

The results of this study are reinforced by research conducted by Parlindungan & Dewi., (2022). The purpose of this study was to determine the effect of company size, leverage, and profitability on corporate value in the property and real estate sector on the IDX. The results of the analysis show that company size has a positive and significant effect on corporate value. Then another research that supports the results of this study was conducted by Sutrisno et al., (2023). This study aims to determine the simultaneous and partial effects of company size, leverage, and profitability on corporate value. This study shows that company size has a significant positive effect on corporate value. Finally, another study was conducted by (Hirdinis, 2019). This study aims to test whether capital structure has an effect on company size, company size has an effect on corporate value, capital structure has an effect on corporate value with company size as an intervening variable. The results showed that company size had a significant positive effect on corporate value.

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### V. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of hypothesis testing and discussion, it can be concluded that of the five independent variables that are thought to have an effect on corporate value, it turns out that there are four variables whose hypotheses are proven, namely institutional ownership, independent commissioners, leverage and company size, while profitability as measured by return on assets has no effect on corporate value.

We realize that this research still has many weaknesses, including the variables of corporate governance mechanisms studied, only institutional ownership and independent commissioners, so that future researchers can conduct research by adding variables that have not been studied in this study.

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## Relationship of Holy Life and Worship Praise on Ephesians 5:18-20 with Spiritual Growth in Members of the GBI Cell Group Jordan River Regensi 2 Tangerang



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**ABSTRACT:** The goals of the research are to find out: (1) the relationship between partial holy living and spiritual growth, (2) the relationship between praise and worship based on Ephesians 5:18-20 partial and spiritual growth, (3) the relationship between holy life and worship while at the same time spiritual growth. This type of research is descriptive quantitative research using correlation techniques. The study population consisted of active members of the Jordan River Regensi 2 Tangerang GBI cell group totaling 34 individuals, with an overall sample of 34 individuals drawn using the saturated sampling technique. The research instrument was a closed questionnaire for collecting data on holy life with a total of 10 items and worship with a total of 10 items and spiritual growth with a total of 10 items. The instrument's validity technique relates to the product-moment correlation formula and reliability based on Cronbach's alpha. The data analysis technique uses multiple regression with a significant level of 0.05. The results of the research show: (1) There is a connection between holy living and spiritual growth, (2) There is a connection between Ephesians 5:18-20 worship and spiritual growth, (3) There is a double connection between holy life and worship based on Ephesians 5:18-20 with spiritual growth.

**KEYWORDS:** Holy Life, Worship Praise, Spiritual Growth, Ephesians.

### INTRODUCTION

The development of each Christian's level of faith is different and depends entirely on the Christian's approach to Christ. Dolince Edowai said that the measure of full faith growth is not the growth of one's feelings or the perception of growth, but the growth of applying the Word of God, for God is the Word as the measure of true faith for perfect spiritual growth (Edowai, 2018). The reality of their lives was that some members of the cell group had not yet implemented the character of Christ in their lives. It was revealed that they still used worldly thoughts in the face of problems. The different characters of Christians are still visible in real life, as are the old habits. Most Christians still don't fully understand that their lives should show the fruit of their repentance, exemplified by the fruit of the Spirit. There are cell group members who still distinguish between social classes and cannot yet hold hands between cell group members, which does not make their lives holy.

A holy life that brings about spiritual growth becomes a problem and a struggle. It is the life of a Christian who has not completely abandoned his worldly life and has not had his life fully controlled by the Holy Spirit and the community around him still has great influence on his spiritual life. Therefore, a Christian who claims to have lived in the spirit means that his behavior reflects the nature of the Holy Spirit. If a believer claims to be filled with the Holy Spirit but lives according to his own wisdom and understanding, he has never walked in the Holy Spirit. Lucker says that in his interpretation, holiness means spotless, without blemish, without blemish, without sin, holy and without blemish (Lucker, 2014). Nino Oktoriono says in his book: Christians must postpone everything that prevents Christians from living a holy life, lest a Christian be crucified with his old man, sinful flesh lose its power and the Christian become the slave of sin again (Romans 6:6) (Nino Oktorino, 2009). The researcher realized that the reality was that some cell group members simply remained silent and were not yet enthusiastic about engaging in worship, such as clapping their hands to praise the service, sometimes when they were Cell group leaders were asked to be on duty, only then was there only praise, worship/prayer, so there was no presence of God.

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Indeed, some cell group members are undisciplined and not accustomed to doing praise and worship because they are tired of work/exertion and lazy to get up early so that they are distant from God. Praise to God and others to hinder the growth of the ministry of praise to God and others.

Several studies that are relevant to this research are: Dolince Edowai's research entitled "The Influence of Papuan Student Fellowship Worship (IPMP) on the Spiritual Growth of Papuan Students in Makassar City" in 2018. The similarity of previous research lies in the variable spiritual growth (Y) used. The difference is that the X1 variable was chosen by the researcher, namely towards holy living, and previous research only used 1 X variable, while this study used 2 X variables (X1 and X2). The research conducted by Serli Marhayanti Padang and Paskalinus Busthan entitled Cell Group Study of Youth Spiritual Growth at the Indonesian Gospel Tent Church Psalm Termondung Samarinda in 2019. The similarity of previous research lies in the variable spiritual growth (Y) used. The difference is that the X1 variable was chosen by the researcher, namely towards holy living, and previous research only used 1 X variable, while this study used 2 X variables (X1 and X2). Research conducted by Fenada Ziduhu Dakhi is entitled "Services of Music, Praise and Worship in Worship and Their Contribution to the Growth of the Church" in 2021. The similarity of previous research lies in the praise-worship variable (X2) used. The difference is that the spiritual growth variable becomes the Y variable for the researcher, and previous studies used the X1 and Y variables which were different from the researcher. In this context, the researcher would like to analyze it with the following title: The relationship between holy life and worship based on Ephesians 5:18-20 with spiritual growth in members of the Bethel Church Cell Group Indonesia River Jordan Regensi II Tangerang.

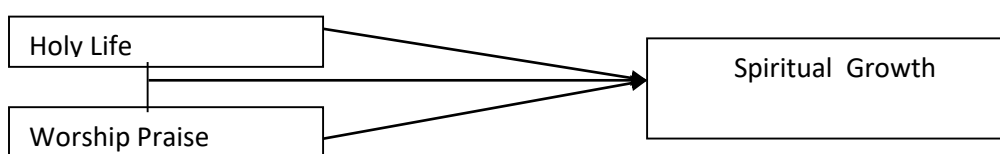
Therefore, based on the above description and information, the researcher formulated a research question: Is there a connection between holy living and spiritual growth among members of the Bethel Church cell group in Indonesia Sungai Yordan Regensi II Tangerang? Is there a connection between praise and worship based on Ephesians 5:18-20 and spiritual growth in members of the Bethel Church Indonesia Sungai Yordan Regensi II Tangerang cell group? Is there a connection between the holy life and worship based on Ephesians 5:18-20 at the same time as the spiritual growth of the members of the Bethel Church Indonesia cell group Sungai Yordan Regensi II Tangerang? The aim of the study was to determine the connection between holy living and spiritual growth in members of the Bethel Church Indonesia Sungai Yordan Regency II Tangerang cell group, to determine the connection between praise and worship based on Ephesians 5:18-20 and spiritual growth to be identified in the Regensi II Tangerang cell group of Bethel Church Indonesia Sungai Yordan and to explore the relationship between holy living and praise of worship based on Ephesians 5:18-20, concurrent with spiritual growth in members of Bethel Church Indonesia Sungai Yordan Regency II Tangerang cell group.

### METHODS

This research was conducted at Bethel Indonesia River Jordan Regency II Church in Tangerang. Researchers will conduct this research for six months, beginning in January 2023 to June 2023, from the process of collecting supporting data, through data processing, to discussing the results and resulting conclusions. This research is a quantitative description using correlation techniques. A correlation study is a study that determines the relationship and degree of relationship between two or more variables without affecting those variables and therefore without manipulation (Arikunto, 2010). According to Azwar, the purpose of correlation studies is to use the correlation coefficient to test how changes in one variable are related to changes in other variables (Azwar, 2017).

The data were analyzed using single and multiple regression and correlation analysis. The study population consisted of all 34 members of the Bethel Church Cell Group of the Jordan River Indonesia Regensi II Tangerang in the Cell Group. Sugiyono said the sample population was calculated using a saturated sample. Sampling is saturated when samples are taken from a relatively small population. Sampling becomes saturated when the sample is taken from a relatively small population. The sampling in this study used a saturated sample using a sampling technique that samples all members of the cell group, for a total of 34 people.

Model Research:



Information:

Y = Spiritual Growth

X1 = Holy Life

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X2 = Worship Praise

### **RESULT**

Exegesis of Ephesians 5:18-21

Analysis of the context of the book

Analysis of the context of the passage will discuss the title, the author, the year the book was written, who it was addressed to, the background of the writing and the purpose of writing the letter and the structure of the book (Stamps, 2015).

Background and Purpose of the Writing

Ephesians is one of the climaxes of biblical revelation and occupies a special place. Unlike many of Paul's letters, Paul's letter in Ephesians is dominated by Paul's personal prayer life. Seemingly full of startling revelations, he becomes a prisoner, maybe even a prison. This letter bears a resemblance to Paul's letter to the Colossians, which was sent out at the same time. It is generally believed that Paul's letter to the Ephesians was an announcement to the churches throughout Asia, which was originally all the churches in Asia Minor. Jesus wanted them to live a decent life (Eph. 4:1-3; Eph. 5:1-2). In doing so he declares Christ to be God's eternal goal of redemption for the church (Eph. 1:3-14).

Based on the exegesis of Ephesians 5:18-20, the researchers found the following indicators: 1. Live in holiness 2. Worship as a Christian Lifestyle 3. Always be thankful in everything 4. For Christians, the holy life and worship of worship are related to spiritual growth.

Interpretation of Verses Ephesians 5:18-20

Based on the Bible, Guidance for Life in Abundance, the letter Ephesians 5:18-20 is Paul's advice to the church in Ephesus (ay. 18) to speak of two things, namely wine and being filled with the Spirit (Stamps, 2015).

1) Wine, being filled with the Spirit depends on the Christian's response to obtaining and retaining sanctifying grace. This means that a Christian cannot be "drunk" and "filled with the Holy Spirit" at the same time, this means losing the fullness of the Holy Spirit.

2) Children of God who are filled with the Holy Spirit must experience continuous rebirth and be filled with the Holy Spirit many times, with the following characteristics: their repentance, but must be filled with the Holy Spirit many times during worship, service and testimony. Second, believers must glorify His name so that a firm faith is maintained (ay. 19-20). The results of a Spirit-filled desire include pleasant conversation with God, contentment, and humility among others while singing hymns.

Verses 19 and 20 state that all hymns, whether religious or private, must be addressed to God as a thank you or a request. Hymns and other spiritual songs are expressions of the Holy Spirit (verse 18). Hymns are a way of praising, teaching, giving thanks, and praying. Christian singing is an expression of joy (verse 19) and worship of God (verse 20) (Stamps, 2015).

As Joseph Thayer said in verses 15-21, each verse conveys an injunction to do everything as the wise men do. Verse 15 teaches us to guard our way of life, which means "wise" in the original text, meaning wise and not foolish to pay attention to the way people walk. One of the things that need to be considered from the perspective of a wise person is to focus on the nature of life, which is honest and accurate (Thayer, 2017).

According to Paul's advice is not to "get drunk". Rogers may have had a background in worshipping drunks, so they were called upon not to be "confused" while drunk but to be "filled with the Holy Spirit", followed by "Psalms, hymns", "and to sing spiritual songs" (Rogers, 2019). Paul admonished the Ephesians, or believers, to be filled with the Spirit of God to glorify God. There are two sides to praise. The horizontal aspect means that the congregation sings psalms, hymns and spiritual songs together as part of fellowship and worship. Another view is the vertical, where believers are called to sing psalms and give thanks to God.

Experts' Views on Spiritual Growth

Yusuf Eko Basuki said that spirituality that grows in Christians is a continuous progression of levels of faith, such as repentance through behavior change, study of the Word of God, adherence to the gospel of salvation of Jesus Christ, communication with God through prayer, giving thanks and worshipping God for it to be accomplished perfectly (Basuki, 2014). Oswald Sanders words are that spiritual growth must occur because of the supporting elements for that growth, for example the spirituality of someone who knows God better, strives to do God's will, humbles oneself (behaves differently), walks towards God seek and follow him, gladly Follow God, let God guide you. Love him and trust him (Sanders, 2019). The same was noted by Jonathan Setiawan, who noted that every believer in Christ is able to discern exactly what is appropriate for his spiritual progress in the knowledge of God, that there is behavior change, that the authority of God's will to perfection Christ's Lead As a lifeline for the church and its congregation in increasing spiritual growth, we need to realize that all churches are different, even though they are all the same (Setiawan, 2006). Likewise, Paul Daun's opinion holds that spiritual growth is the most important part of achieving human



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excellence. Of course, spiritual growth requires challenges, and these can be part of recognizing the qualities of faith (Daun, 2008). The quality of faith that sincerely demonstrates the knowledge of God, the presence of good conduct in word and deed leading to the perfection of Christ. These indicators help in discerning a person's spiritual growth stage in order to attain spiritual maturity (Garrison, 2016). In this case there are similarities in the indicators of spiritual growth with Yusuf Eko Basuki, leading researchers to assume three important core points as signs or indicators of spiritual growth, namely: knowledge of God, changes in behavior and thoughts, measures for the perfection of Christ.

### **Spiritual Growth in the Old Testament**

In the Bible 1Samuel 16:11-13 David is described as the youngest of Jesse's eight sons. It is characterized by its small stature and reddish skin. He spent his youth tending sheep, further training David in the knowledge of God, and his behavior pleased Saul so that he became a servant and armor-bearer (soldier) (1Sam. 16:19-21) (Stamps, 2015). Long ago, his father David ordered Eliab's three brothers, Abinadab and Shama, to deliver grain and bread. The three prepare to fight the Philistine army. When David got to the barracks, he ran to find his brothers (1Sam. 17:12-15).

At that time Goliath, the giant of the Philistines, came and made fun of the Israelites. Goliath's words frightened the Israelites because he was so big. Its height reaches 6 cubits or more than 3 meters. In addition, Goliath experienced war. Unlike other soldiers, David did not hesitate to face the challenges of the Goliaths. Actually, David intended to defeat the giant of the Philistines. He also expressed his desire for more soldiers (1Sam. 17:16-26). Many soldiers conveyed David's wishes to Saul, then king of Israel. But Saul doubted David because he was young. In addition, Goliath was a lifelong soldier who was always at war. These words did not reflect David's intention that he believed he could defeat Goliath with the Lord Jesus, but rather David said he had killed a lion and a bear that were trying to attack his sheep.

The story's description shows the growth of the character of David, who underwent a change in behavior, feeling his face was reddish like a child's, to grow into a soldier when an extraordinary God was introduced and incorporated for his people. It seems impossible to the human eye, but with God's help, David managed to defeat the giant Goliath. The story of David reminds Christians to keep hoping and trusting in God, who leads to the perfection of Christ in all his deeds in the struggle against the Philistines. When there are problems and difficulties, one must turn to Jesus, the true tower and true salvation. The essence of the Old Testament regarding spiritual growth relates to principles such as: seeking God's will, knowing God, and changing behavior, which are used as indicators of faith growth.

### **Spiritual Growth in the New Testament**

Growth in the New Testament is growth that increases both physically and spiritually day by day (1 Corinthians 3:6-7). The story of his encounter with Jesus triggers a life-changing experience for Paul. Saul became Paul, and the persecutors of Christians became zealous apostles. The following changes are Paul's perspective and actions reflected in his work. What was once an advantage is now considered a loss and is even called junk when meeting Jesus (Phil. 3:7-8). In 2 Peter 1:5-7, the apostle Peter characterizes the spiritual growth of a believer who experiences growth toward spiritual maturity, the perfection of Christ.

In Paul's letter to the Christians in Ephesus (Eph. 4:13-16), spiritual growth is achieved when the truth of God's Word is present and His faith is expressed in real life (Mutak, 2018). The essence of the New Testament regarding spiritual growth relates to principles such as: changing behavior and thoughts, seeking the will of God, knowing God to use as an indicator of spiritual growth.

### **Views of Experts About Holy Living**

Stephen Tong's words tell us that holiness has existed for a long time when God gave the commission of Moses to Israel recorded in the Old Testament, "Don't come near me, take off your shoes and stand on your feet" (Ex. 3:5) which means that every Christian must live in holiness, living based on the truth of God's Word and living according to God's will. This holy word means holy and qadosh in Hebrew (Tong, 2007).

Walter Kaiser, the divine law based on Leviticus 18-20 includes sanctity of marriage, chastity of sexual intercourse including adultery (Lev. 18:1-30), and chastity, poverty, property, robbery, right works, the kind and the way we treat our neighbors in worship (Lev. 19:1-37) means that God's people encounter this holy God (Kaiser, 2014). Therefore, the answer of God's people is that the Lord God of Christians is holy (Lev. 20:11) and represents the sanctification of the house (Lev. 20:9-26).

Ellen G. White shares some sacred life principles. First, true sanctification is a biblical teaching, for living a holy life is God's will (1Thess. 4:3). Second, the sanctification of God (1Thess. 5:23). Third, the truth of the Word focuses on holiness (John 17:17,19). Fourth, a holy life is lived only by focusing on Christ (White, 2011). The core of the three expert opinions and common facts about holy living relate to principles such as: living according to God's will, living without blemish, and living in the truth of God's Word as indicators of holy living.

### **Holy Life in the Old Testament**

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Living a holy life has been an absolute requirement since the time of Moses. God chose the Levites to worship. But not even the tribes chosen by God have freedom of religion. The point is that they must live godly. But not only the Levites, but all Israelites must lead a holy life. God is present during the service, where the service is filled with holiness and worship, which is part of true worship (Henny, 2020).

In this case Solomon said at 2 Chronicles 5:11-12 when King Solomon performed the dedication of the temple that the priests of the rapture and the music ministry had to be holy because they were ordained. The way the priestly ministers were sanctified under the law of Moses was by living the righteousness of God's law, not by sin. Holiness is an important place before God. God does not compromise, even with the smallest sin. Sin is sin to God and sin is a grave before God (Baskoro, 2021).

Another story from Daniel 1:1-8 that relates to God's will to live holy is Daniel: When Nebuchadnezzar entered Jerusalem, a bright, perfect, and talented young man was brought to Babylon. Able youngsters were trained at court. You would learn the Chaldean alphabet and the Chaldean language. They received daily portions or rations of wine, royal food, and royal drink. They completed a three-year apprenticeship and served kings, including Daniel. Daniel did not touch the king's food or wine. He considered the king's food and drink unclean and could not offer them because they were sacrificed to the gods, who were believed to bring prosperity to the king. Daniel knew how to protect himself from dirt and refused to worship the false gods (golden idols) mentioned at Daniel 13:15-18.

It is also told in the Bible Genesis 39:6-18 gives the example of Joseph, a person who kept his holiness depending on God's grace and strength. Joseph was processed by God through various events starting from being hated and his brothers selling him to Potiphar's house. "... Joseph was good and handsome" (Gen. 39:6), Potiphar's wife kept trying to tempt Joseph to sleep with her. However, Joseph constantly refused and said that even though Potiphar trusted his entire household to him, he was still adamant because a wife of a husband should not have anything to do with other people (ay. 8-9). Joseph dared to resist the temptation of Potiphar's wife even though the whole house had been entrusted to Joseph and even though the house was empty, only Potiphar's wife was present (ay. 11), Joseph still dared to refuse and even ran out of the house. Often in an empty house, no one around, it can make us tempted to commit sins that pollute and even damage our holiness. Joseph was always humble, depended on God, did not try to maintain holiness himself so that God was always with Joseph. The essence of the Old Testament regarding holy living refers to principles such as: living in holiness, living in the truth of God's Word, and living according to His will to be used as an indicator of holy living.

### **Holy Life in the New Testament**

God's people must be holy because God is holy and God's holiness does not compromise with sin. For this reason, holiness is very important as a believer, since it has been sanctified by God. As a believer you should: Obey God's commandments to sanctify your life. Every believer without exception, regardless of group, specific groups. All are sinners by nature and can only be saved and sanctified by the grace of God (Moloney, 2019).

Holiness is tantamount to calling believers His own. All Christians are called and obligated to live holy lives and meditate on the Word of God. Living holy means being an example to God that reflects his holiness (Roberts, 2000). As a reflection of God, it can be seen in the character of his chosen people, whose lives are sacred. Holy living separates Christians from the curse of sin and allows them to live in darkness. In the temple they meet and teach (Acts 2:46). So always keep it clean, free from dirt and stains. Because that is where God dwells and lives in his holy temple. The body created by God must be cleansed of all impurities in order to please God (Panggarra, 2014).

Ephesians 5:1-10 records Paul's counsel to the church in Ephesus to live holy or not to be defiled by the lusts and deeds of the flesh. Another story of Paul's counsel on the conditions for overseers in connection with a holy life is found in the church in Ephesus, which must contend with the conditions of the idolatry that is widespread in that city and live a holy life. This is the concept of church leaders that dates back to 1 Tim. 3:1-7 so that it can encourage church leaders to live holy lives in ministry and to leave unholy lives in ministry that are not pleasing to God (Sinamohina, 2019). The essence of the New Testament regarding holy living relates to such principles as: living in the truth of God's Word, living without blemish, and living according to His will, which is to serve as an indicator of holy living.

### **Expert Opinions on Praise Worship**

Bob Sorge mentioned that this direct expression comes into view when one praises and worships God by raising one's hands while simultaneously moving one's limbs to dance. Praise and worship of God is a way of life for Christians as an expression of gratitude for all the good that God has given to Christian (Sorge, 1991).

According to Djohan Handojo, worship is an expression of faith and shows that people believe in the power of God working in all believers as a lifestyle to express gratitude to God and God to bestow blessings and miracles in believers' lives. This expression of

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faith can be When the storms of life strike Christians, when Christians persevere in remaining true to their word and promises and continuing to worship God, Christian faith continues to grow, bring victory, and become a way of life every day. Christians should give thanks for God's help and experience miracles from God (Handojo, 2007).

Ralph Mahoney said that worship is an expression of love and praise for God as a way of life for Christians, giving their whole heart and life to God and giving thanks for all His goodness. Expressing Love and Praise for God When a Christian Is Warm In an intimate relationship with God, love appears as an expression of one's whole heart and life and deserves to be praised, which is Christians' style of praising their God and to worship (Mahoney, 2002).

Kevin J. Connor believes that worship is prostration in humility to the glory of God as an expression of the heart to love God with gratitude. The attitude of bowing down or humbling oneself before God is a symbol of the Christian belief in God because God is greatest. This is a form of the Christian exaltation style and an expression of a deep heart of loving God more than others (Conner, 2021). The core of the three expert opinions and the general nature of praise and worship relate to such principles as: the existence of expressions of exaltation to God, the lifestyle of believers, and expressions of gratitude to God.

### **Praise Worship in the Old Testament**

Praise and worship are important parts of Christian worship. Man was created to praise, worship and glorify the name of the Lord of the worlds (Ps. 150:3-5). The psalmist himself is aware of the importance of praise and worship. Through praise and worship, God's people express their love and intimacy with God as a form of declaring that God is the one who deserves glory (Sorge, 1991). King David related how pleased David was to find God answering his call. He gave heartfelt thanks for God's faithful love (Ps. 138:1-2). God's answer gave new strength to his soul (Ps. 138:3). David, who was a king, hoped that all kings could follow in his footsteps of experiencing God and His promises and witnessing to God's glory and righteousness (Ps. 138:4-6). David wanted his thanksgiving to be a testimony to the kings around him. Only those who experience God personally can feel sincere gratitude.

Another story tells that a harpist sent by Elisha becomes Jehoshaphat's support when he is faced with the problem of an enemy siege and a water crisis (2 Kings. 3:15-19). The goal is to praise and worship God. Surprisingly, the prophet of God was inspired when the harpist played music in praise and worship of God. Through this inspiration they are guided to master the difficult situations they are faced with (Inglis, 2010). Everything becomes easy for Allah. How beautiful it is to live in the power of God. People who praise and worship God will receive God's blessings in abundance. When his people praise and worship him, his wisdom overflows them (Gill, 2022).

When Solomon worshiped in the temple, worship and praise affected the principle of a life pleasing to God, which is 1 Chronicles 5:14, the Word of God, I admit I couldn't bear it. Not living like the wise, they will worship. Second, 2 Chronicles 6:3-11 records eternal gratitude. Third, in 2 Chronicles 7:1-3, God said that fire would come down from heaven to consume the fire because their lives were not in harmony with God.

### **Praise Worship in the New Testament**

Praise and worship are expressions of faith and show that people believe in the power of God at work in all believers. John 4:23-24 But now is the time for true worshipers of the Father to worship Him in spirit. In fact, Heavenly Father wanted worshipers like the Samaritan woman to teach God how to worship God. Jesus Christ clearly knew the will of our Heavenly Father and said that He loves all. In the Spirit, only the Holy Spirit who dwells in the life of believers can know God the Father, for God is Spirit (1Cor. 2:11) (Redman, 2005). The Holy Spirit enters the hearts of believers and is mediated by God (Rom. 8:26). True worship of God must come from pure heart motives, sincere purpose, and through the use of all our faculties in gratitude. Worshiping in truth is a way of life that continually conforms to the Word of God, which is truth. God wants his people to worship him with all their being, mind, heart and mind in the truth of his word (T, 2012).

Ephesians 5:15-21 records that Paul encouraged the Ephesians to live wisely as an expression of faith, to believe in God and always to sing songs and praises with all their hearts and with appreciation for all that was happening in his life . The basic principle of worship and praise is a group of servants who earnestly serve Allah through both praise and daily worship (Kusradi, 2020). Obedience in ministry with a righteous attitude is very important in the exercise of ministry. Like the spirit of Paul's ministry, God does not like cold hearted people, unfortunately they have turned missionary work into a place of funding and credit (Sitanggang, 2020). The principle of professing faith in God and always giving thanks, praise, and worship is paramount. Only the name of the Lord Jesus is glorified and the glory of God is proclaimed throughout Ephesus (Sorge, 1991). All servants of God must do whatever is in accordance with God's will in the ministry (Wijowo, 2014). The New Testament essence of praise and worship relates to such principles as: the believer's lifestyle, the direct expression and love of worship to God, and the expression of gratitude to God.

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## FINDINGS

**Table 2. Pearson's Correlation Test. Correlations**

		Hidup Kudus	Pujian Penyembahan	Pertumbuhan Rohani
Hidup Kudus	Pearson Correlation	1	.806**	.823**
	Sig. (2-tailed)		.000	.000
	N	34	34	34
Pujian Penyembahan	Pearson Correlation	.806**	1	.913**
	Sig. (2-tailed)	.000		.000
	N	34	34	34
Pertumbuhan Rohani	Pearson Correlation	.823**	.913**	1
	Sig. (2-tailed)	.000	.000	
	N	34	34	34

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The regression equation of the relationship between the variables holy life and worship with spiritual growth can be calculated from the t-statistic. The statistical t-test was used to determine whether, in part, holy living and worship have a significant association with spiritual growth. The criteria for testing the t-statistic are t-count > t-table and a significance value < alpha 0.05.

**Table 1. Partial Multiple Regression Test Results Coefficienti.**

Mdel	Unstan. Coeffici.		Stan. Coeffici.	t	Sig.
	B	std. Err.	Betas		
(Cons.)	8,233	2,709		3,039	0.005
1 HOLY LIFE	0.206	0.095	0.251	2,169	0.038
WORSHIP PRAISE	0,612	0.099	0.711	6,153	0.000

Based on the table above, the independent variable holy life has a significance value below 0.05, which means Hypothesis 1 answers that Ho is accepted and Ha is rejected. Then the praise-worship variable has a significance value less than 0.05, which means that hypothesis 2 was accepted by Ho and rejected by Ha.

### Pearson's Correlation Test

The purpose of the correlation test is to determine the relationship between variables. The tests were performed using the Pearson correlation data in the correlation table. Interpret the strength of the relationship between the two variables using the following criteria: 0: there is no correlation between the two variables > 0 0.25: the correlation is very weak > 0.25 0.5: the correlation is sufficient > 0, 5 0.75: Strong correlation > 0.75 0.99 : Very strong correlation1 : Perfect correlation

Based on the SPSS output results, the Pearson correlation value of the Holy Life variable with the Spiritual Growth variable is 0.823, which is greater than 0.5, and the value of the Worship variable with the Spiritual Growth variable is 0.913 is greater than 0.5, so it can be concluded that the relationship between the two independent variables and the dependent variable is very strong.

F-test is used to find the correlation of two variables on a research variable. Therefore, calculations based on the Sig results are required.

**Table 3. Simultaneous Multiple Regression Test ResultsANOVAa**

Mdel		Sum Sqs.	df	MeanSqu.	F	Sig.
1	Regression	465,471	2	232,736	91,293	.000b
	residual	79,029	31	2,549		
	Total	544,500	33			

a. Dependent Variable: Spiritual Growth

b. Predictors: (Constant), Holy Life, Worship Praise

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From the Sig results table, simultaneous correlation test or F-test returned a significance value of 0.000, which is less than alpha 0.05, so there is a significant association between holy living and worship praise with spiritual growth at the same time. Based on Table 3, results of the correlation test of holy life and worship praise, the relationship of the independent variable is able to explain the dependent variable at the same time. The higher the R2 value, the better the predictive model of the proposed research model.

**Table 4. The coefficient of determination R<sup>2</sup>Summary models**

Model	R	R Square	Adjusted R Square	std. Error of the Estimate
1	.925a	0.855	0.845	1,59666

a. Predictors: (Constant), Holy Life, Worship Praise

Correlation test results of the Holy Life and Worship variables with the Spiritual Growth variable (Coefficient of Determination Test) show an R-value of 0.925, meaning that the correlation between the Holy Life and Worship variables with the spiritual growth rate is 0.925, proving that there is a close relationship since it is close to 1. The R-number square shows the percentage contribution of the independent variable to the dependent variable. The R-squared number is 0.855, which means that the Percentage contribution of the independent variable to the dependent variable is 85.5%, with the rest being influenced by other variables not considered in this study.

### DISCUSSION

Based on the research results from the data from the questionnaire results, it can be explained that the Pearson correlation test performed for each variable shows the following data: The variable 'Holy Living' has a positive and very strong relationship with the variable 'Spiritual Growth', with a score of 0.823, the variable 'Praise and Worship' has a positive and strong relationship with the variable 'Spiritual Growth' with a score of 0.913, and the variables 'Holy Life' and 'Worship Praise' together have a positive and very strong relationship with the variable "Spiritual Growth" with a value of 0.925 found in the correlation test results of the variables X1 and X2, proves that there is a close relationship as it is close to 1 and supported by the Sig results. The multiple correlation test (simultaneous F-test) shows a Sig value of 0.000, which is less than alpha 0.05, so there is a significant correlation between holy living and worship with spiritual growth at the same time.

#### Holy Life on Spiritual Growth

A holy life that affects spiritual growth in problems and struggles is the life of a Christian who has not completely abandoned his worldly life and whose life has not been fully controlled by the Holy Spirit, whose surrounding community environment still has great influence his spiritual life has life. Therefore, a Christian who claims to have lived in the spirit means that his behavior reflects the nature of the Holy Spirit. If a believer claims to be filled with the Holy Spirit but lives according to his own wisdom and understanding, he has never walked in the Holy Spirit. When a person possesses the discipline of worship, lives a holy life, lives the word of God, worships and praises, prays, communes with the saints, and ultimately witnesses and ministers to others, his spiritual growth increases (Edowai, 2018).

#### Worship Praise on Spiritual Growth

Joseph Christ Santo explained the implications of explaining the circumstances in which a Christian can control himself because his spirit is under the control of the Spirit of God. One of the expressions of exaltation in worship is always the singing of psalms, hymns and spirituality. Second, sing praises to God. Third, always be thankful. Fourth, be humble to one another. Worship encompasses the vertical aspect of human communion with God, but also the horizontal aspect of the human-human relationship. True spiritual worship brings harmony among people (Joseph Christ Santo, Joko Sembodo & Sumiwi, 2021).

#### Holy Life and Worship Praise on Spiritual Growth

Rogers may have had a background in worshipping drunks, so they were called upon not to be "confused" while drunk but to be "filled with the Holy Spirit", followed by "Psalms, hymns", "and to sing spiritual songs" (Roberts, 2000). AG, Pazia, (vv. 19-20) can express gratitude as an element of worship, but also a sign of being filled with the Holy Spirit. This awareness brings or teaches believers to be grateful in all circumstances. Therefore, Spirit-filled believers are called to praise everything, in the name of the Lord Jesus Christ. The contrast of this verse is that someone who is drunk speaks harshly and behaves inappropriately (Pazia,

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2020).

## CONCLUSION

Based on the research results I came to the conclusion<sup>1</sup>. There is a very strong association between holy living and spiritual growth among members of the GBI River Jordan District 2 Tangerang cell group, in part with a correlation score of 0.823.<sup>2</sup> There is a very strong association between praise and worship with spiritual growth in members of the GBI River Jordan District 2 Tangerang cell group, with a partial correlation score of 0.913.<sup>3</sup> There is a very strong and simultaneous association between holy living and worship with spiritual growth in members of the GBI River Jordan District 2 Tangerang cell group, with a correlation score of 0.925.

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## Relationship Discipleship Activities and Implementation the Great Mandatory Based on Mattew 28:19-20 with Spiritual Growth in Congregation of the GBI Manna Bengkulu



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**ABSTRACT:**The purpose of this research was to determine the relationship between discipleship activities, fulfilling the Great Mission of Matt. 28:19-20, and the spiritual growth of congregation in Manna Bengkulu Bethel Indonesia Church. Discipleship activity is used to teach and teach the process of spiritual maturity for those who are born again in Christ. The spiritual growth of the church is important in ministry, and discipleship activities and fulfillment of the Great Mission more important roles in creating spiritual growth and sustaining Christianity in the church. Research methodology with related technologies was used in this quantitative research. The results of this study showed a very strong one-way correlation of 0.830 between discipleship activity related to church spiritual growth. Great Mission fulfillment had a 0.766 correlation with church spiritual growth. Even when these two variables were combined, there was a stronger one-way correlation of 0.844 for the spiritual development of the Community in Manna Bengkulu Bethel Indonesia Church. The conclusion of this research is that discipleship activity and the Great Mission are closely related and specifically needed for the spiritual growth of the Community in Manna Bengkulu Bethel Indonesia Church, particularly in their behavior. That means you have to be careful. To promote the spiritual development of the Community in Manna Bengkulu Bethel Indonesia Church.

**KEYWORDS:** Discipleship Activity, Great Mission, Spiritual Growth, Matthew's Gospel

### INTRODUCTION

God gives salvation to everyone, but many people reject this gift of salvation. If a person accepts Christ as Lord and Savior, God bestows His grace on them, but if they refuse, their life will suffer eternal destruction. To receive eternal life one must become a disciple of Christ. Discipleship activities are expected to support the formation of the spiritual growth of the church. This also moved George Barna, who finally examined from how many churches the number of Christians had been discipled. If you look closely at the lives of the early church and believers today, there is a very different gap. The Disciples of Christ in the early church were loved by many people and held in high esteem by all. According to a poll conducted by George Barna, the church was doing slightly better than the world around it among more than a hundred people tested. George Barna explained that about 85-96% of Christians are still spiritual babies. About 18-20% make spiritual maturity their goal in life. About 75% of youth left the Church before the age of 19. Only about one to three Americans have a biblical worldview. About 9% of born-again Christians have a biblical worldview (Hull, 2014).

The existing church is the source of the God-given initial potential to be nurtured. The church is a kind of seed that is planted. If you take care of it, give it enough food, water and sunlight to keep it healthy, it will grow naturally, even produce fruit and eventually it will produce new seeds as well. Rick Warren explained that if the members of a church are healthy then they will experience growth as God wills, also because the souls that God has entrusted to a church need to be nurtured and nurtured spiritually in order for them to stay healthy, so they too grow and produce fruit (Warren, 1995).

Spiritual growth is part of the believer's process of spiritual maturity. According to H.L. Senduk, the first characteristic of a spiritually mature Christian is reading and studying the Word of God, for God speaks to His people by reading His Word. Those who experience spiritual growth will have and develop a Christ-like personality (Senduk, 1987). According to Peter Wagner, spiritual growth means bringing souls who do not know Jesus Christ personally into worship with him and letting them enter a responsible church (Wagner, 1996).



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Spiritual growth, then, is a spiritual development in a believer's life that is continuous and increases in direction of truth and quality. In this case, she can be judged by the character of his life. The spiritual growth of believers is an active, dynamic and evolving process of life until it reaches the perfection of Christ.

A believer's spiritual growth can be seen in a character change as a manifestation of the fruition of the Spirit in his life. Sumiwi notes in a theological journal that the Holy Spirit filling a person's life enables them to change their character and experience spiritual growth. The working of the Holy Spirit in every believer is the character of Christ in the fruitage of the Spirit (Sumiwi, 2018).

Yesri Esau Talan said: Spiritual growth is the process by which believers become like Christ. There are stages in this process that must be passed through in a God-built relationship. These phases are; Have a correct understanding according to the truth of God's Word, be obedient in doing God's Word: be patient, be full of love, be honest, love to pray, and bear testimony of the goodness of God. Indeed, the spiritual growth of any person is difficult to measure with a spiritual growth chart, but it can be seen in their daily actions and attitudes in life. Thus, this is a good indicator to determine if a person is experiencing spiritual growth or not. Because his ideal life after salvation is to grow spiritually. New paradigms and lifestyles are becoming visible in everyday life (Talan, 2021).

Robert Schnase said that five things characterize a church that grows spiritually: being very humble and open, participating passionately in every service, growing in faith, carrying out missions in ministry, and showing generosity (Harrington & Bobby, 2018). According to Steve Gladen, a healthy and spiritually mature believer fellowships with other Christians, learns biblical principles, uses their gifts and abilities to minister to others, evangelizes, and gives their life to worship God (Gladen, 2015).

In this case there are similarities in the indicators of spiritual growth with H.L. Senduk so that researchers accept four important things as signs or indicators of spiritual growth, namely; Read and study His Word, pray, give thanks and live in the worship of God each day, bear testimony and win souls and be faithful in ministry. The disciples of Christ are described by Hendra as a model that Jesus Christ formed of believers in whom they have a close relationship with their teacher as they interact and learn to teach the Word of God. They are also endowed with power and allow their spirituality to mature (Hendra, 2015). Greg Odgen emphasizes that discipleship is the process of building responsible relationships over a short period of time with the goal of leading believers to spiritual growth in Christ (Odgen, 2014).

Steve Gladen also formulates discipleship activities that are not just about learning the Word of God, but also about practicing the truth of the Word in all aspects of the lives of Christ's disciples being taught. Discipleship is actually an activity of helping one another to discern and strengthen the spirituality of Christ's disciples (Gladen, 2015). Meanwhile, according to Edmud Chan, it is the process of getting people to experience a good and restored relationship with God and leading them to full growth in Christ according to a continuous growth plan so that they can repeat the whole process for others as well (Chan, 2014). George W. Peters argued that discipleship is more than skill, enthusiasm, and knowledge, and that the process represents a degree of spiritual maturity, which is why a disciple cannot be made in haste and on a large scale (Peters, 2002).

Based on some insights gathered by researchers, it has been established that discipleship is the process of guiding and teaching a person born again in Christ to attain spiritual maturity by using the example and imitation of Jesus Christ as the primary and Disciple Object sees only source for learning and using the Word of God as a guide to life. every day, which can ultimately do the same for other new converts.

In Matthew 28:19-20, according to Henry, the task of discipleship is given to those sent by the Lord Jesus, especially to disciples who are servants of God's Kingdom. Interpreting the word "go" in the text of Matthew 28:19, Henry explained that the apostles and their followers were to go proclaim the Gospel of salvation to all people where the gift of salvation is for all who believe (Henry, 2008). According to Johannes Verkuyl, there are three important parts in the Great Commission, namely the bestowal of power from Jesus, Jesus' continuous commands, and His promise to always be with you (Stott & Verkuyl, 2007).

According to Wallace, in interpreting the implementation of the Great Commission, the Lord Jesus gave the command to always make disciples of all nations by performing baptism and teaching it to the disciples (Wallace, 2002). The mission of the Great Commission is not limited to introducing Jesus to all unbelievers in order to become Christians, that is not the end goal. George W. Peters explained that the church must have a strong passion for spreading the gospel of Jesus Christ, a church that preaches the gospel according to the early church, so today's church that wants to grow must also have a passion for God and carry orders and issue missions (Peters, 2002). In reality, however, the discipleship process lasts only a short time, so that the discipleship process that takes place is ineffective. This results in the church being made disciples, disobeying and remaining true to the truth of God's Word that has been taught; the truth of God's word they hear is limited to knowledge only. Their lives remain the same as those of the world's people in terms of attitudes and actions in dealing with problems and making decisions. Likewise, in applying Jesus' pattern of discipleship, the pattern of discipleship must begin with the process of selecting disciples, then how to

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train students to follow Christ and become like Christ Jesus, and then how to lead the ministry of each Disciples Monitored and Trusted Again, this cannot be accomplished in the GBI Manna Bengkulu Church by sending out disciples to disciple others so that they may have the experience of multiplying disciples.

This discrepancy is caused by two factors, such as the municipality changing places of residence due to work assignments or continuing their studies in another city. Lest the church follow the discipleship process on an ongoing basis, errors sometimes occur as the discipleship process is conducted, resulting in the truth it receives being incomplete and also the pattern of Jesus' discipleship not being understood by the leaders of the cell community, so that it encounters obstacles in its implementation. The existing church is the source of the God-given initial potential to be nurtured. The church is a kind of seed that is planted. If you take care of it, give it enough food, water and sunlight to keep it healthy, it will grow naturally, even produce fruit and eventually it will produce new seeds as well. Rick Warren explained: If the members of a church are healthy, then they will experience the growth that God wants, also because the souls that God has entrusted to a church need to be nurtured and nurtured spiritually in order for them to stay healthy, so they too grow and grow bear fruit (Warren, 1995).

The Great Commission is a very important commandment in Christianity. The Great Commission focuses on evangelism and discipleship with the goal that all nations enjoy the salvation of the Lord Jesus Christ. In the New Testament Bible, He empowers those who believe through the Holy Spirit to preach the gospel (Acts 1:8). We hope that everyone who believes will have the courage to evangelize everyone who has not accepted Christ. Courage is an attitude capable of facing good or bad circumstances or situations. As Martin Luther King Jr. once said, courage is the determination to keep going, even in the face of daunting adversity and circumstances (Myra & Shelley, 2007).

The testimonies of believers will have an impact on those who do not believe in Christ because there is power in such testimonies. The testimony must be preached by people experiencing repentance in Christ and according to the truth of the Bible, so that listening people will believe in Christ. The hope is that the church will take care of the missionary programs being conducted by the church. The Church is a community in response to the *Missio Dei*, which bears witness to God's work in the world by proclaiming God's goodness in word and deed. So that the church that evangelizes unbelievers may hear the message of salvation by accepting God as Savior and being baptized. New souls being saved for Christ must continue to be taught and guided in the truth of God's Word.

The reality, however, is that the church has not carried out the preaching of the gospel, which can be seen in the growth of the church that has not experienced development, as well as the church that has not understood the missionary program and the importance of the Lord's great commission Jesus, so that this noble task was improperly performed. This gap in the preaching of the gospel is that there is fear in the church. This fear is caused by several things, including a lack of understanding of God's Word and fear of being accused of Christianizing by other groups. Likewise, there is a lack of teachings related to the great commission in the church, so the missionary program is not a priority and the congregation is less enthusiastic, so it has not experienced the evolution of souls on a large scale.

The mission program cannot be carried out optimally due to a lack of understanding of the mission. This causes the church to feel less secure about preaching the gospel or witnessing of Christ. Lack of self-confidence makes it impossible for them to witness or preach the word of God to people of higher education or higher social status. Because there is no scheduled mission week in the church, the congregation lacks a burning heart and enthusiasm for the mission of preaching the gospel. The focus of the ministry is more on pastoral care and not on outreach, so the congregation only looks inside the church and pays less attention to those outside the church environment. Churches focus only on changing and renewing their own lives without trying to save and restore others. The prayer program, which is more emphasized and prioritized than the evangelism program, is an impediment that prevents the Great Commission from working. Because of the many prayer programs in the church, the congregation focuses more on prayer than on evangelism. Prayer and evangelism, on the other hand, must be in balance for the church to feel the effects of church growth.

Based on some of the above thoughts, the researcher formulated the problem: Is there a correlation between discipleship activities and the spiritual growth of the church at GBI Manna Bengkulu? Is there a connection between fulfilling the Great Commission based on Matthew 28:19-20 and the spiritual growth of the church in GBI Manna Bengkulu? Is there a connection between discipleship activities and the implementation of the Great Commission based on Matthew 28:19-20 and the spiritual growth of the church at GBI Manna Bengkulu? Based on the formulation of the problem above, the purpose of this study is to determine the relationship between discipleship activities and the spiritual growth of the church in the GBI Manna Bengkulu to determine the relationship between the implementation of the Great Commission based on Matthew 28:19 -20 and the spiritual growth of the church at GBI Manna Bengkulu and to determine the relationship between discipleship activities and the implementation of the Great Commission based on Matthew 28:19-20 along with the spiritual growth of the church at GBI Manna

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Bengkulu.

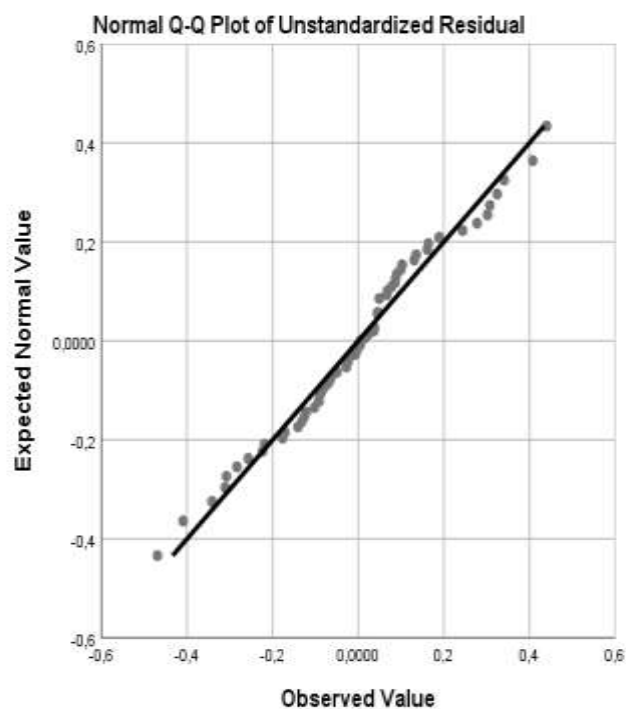
## METHODS

This research is a quantitative study using survey methods with correlation techniques. Correlation or correlation research is a study of determining the relationship and degree of relationship between two or more variables without attempting to affect those variables in a way that does not result in variable manipulation. In this study, 3 (three) variables are examined. The type of correlation research chosen in this study is multivariate correlation. The target group of this study is the community at GBI Manna Bengkulu. The total population of the community at GBI Manna Bengkulu is 80 (eighty) people. The reachable population, which serves as a sample, is calculated using the Slovin formula. When determining the number of samples, the researchers assumed an error rate of 0.5%, so that when calculating using the Slovin formula, the number of samples in this study was 67 respondents.

## RESULT AND DISCUSSION

### Normality Test

From Figure 1 of the plot below, you can see that the points spread around the line and follow the diagonal line, so the residuals in the model are normally distributed. From this it can be concluded that the residual data distribution of variable Y, variable X1 and X2 has a normal distribution as shown in the figure below:



### Correlation Test

The purpose of the correlation test is to interpret the strength of the relationship between the two variables using the following criteria:

- 0 : There is no correlation between the two variables
- > 0 – 0.25 : The correlation is very weak
- > 0.25 – 0.5 : Correlation is sufficient
- > 0.5 – 0.75 : Strong correlation
- > 0.75 – 0.99 : Very strong correlation
- 1 : Perfect correlation

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**Table 1. Correlation Test Results for Discipleship Activities and the Implementation of the Great Commission with Spiritual Growth**

		Correlations		
		PRo	AP	PAA
PRo	Pearson Correlation	1	,830**	,735**
	Sig. (2-tailed)		,000	,000
	N	67	67	67
AP	Pearson Correlation	,830**	1	,766**
	Sig. (2-tailed)	,000		,000
	N	67	67	67
PAA	Pearson Correlation	,735**	,766**	1
	Sig. (2-tailed)	,000	,000	
	N	67	67	67

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

Based on the output of SPSS Table 1, the Pearson correlation value of the Discipleship Activity variable to the Spiritual Growth variable is 0.830, which is greater than 0.5. Therefore, it can be concluded that the relationship between the two variables is very strongly correlated and the Pearson correlation value of the Great Order Implementation variable on the Spiritual Growth variable is 0.766, which is greater than 0.5. From this it can be concluded that the relationship between the two variables is a very strong correlation.

Test the correlation of the variables of discipleship activity and implementation of the Great Commission. along with the variable "Spiritual Growth". Finding the correlation of two variables at the same time with a research variable requires a calculation using multiple regression.

**Table 2. Results of Sig. Correlation Test**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5,575	2	2,788	79,538	,000 <sup>b</sup>
	Residual	2,243	64	,035		
	Total	7,819	66			

a. Dependent Variable: PRo

b. Predictors: (Constant), PAA, AP

Since Sig is less than (0.05), there is a significant association between the variables of discipleship activity and the accomplishment of the Great Commission with spiritual growth.

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**Table 3. Correlation Test Results of Discipleship Activity and Implementation of the Great Commission Variables with Spiritual Growth**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844 <sup>a</sup>	.713	.704	.18721

a. Predictors: (Constant), PAA, AP

The SPSS Table 3 output results yielded an R value of 0.844, which is greater than 0.5. From this it can be concluded that the relationship between the two variables is a very strong correlation.

Based on the research results, the normality plot shows that the data is normally distributed. The correlation test performed on each variable shows that the Disciple Making Activity Variable data has a positive and very strong relationship with the Spiritual Growth variable with a value of 0.830, the Great Commission Implementation Variable has a positive and negative relationship. Very strongly related to the variable Spiritual Growth with a score of 0.766 and the variables Discipleship Activity and Great Commission Fulfillment together have a positive and very strong relationship to the variable Spiritual Growth with a score of 0.844.

## CONCLUSION

Based on the research conducted, it can be concluded that there is a very strong and unidirectional correlation between disciple making activities and the implementation of the great commission based on Matthew 28:19-20 at GBI Manna Bengkulu, with a correlation value of 0.830 There is a very strong and unidirectional relationship between the implementation of the Great Commission and the spiritual growth of the church at GBI Manna Bengkulu, with a correlation value of 0.766, and there is a very strong and unidirectional correlation between discipleship activities and the implementation of the Great Commission based on Matthew 28 :19-20 along with the spiritual growth of the congregation at GBI Manna Bengkulu, with a correlation value of 0.844. The synergy between discipleship activities and the joint implementation of the great commission based on Matthew 28:19-20 will create a very strong connection with the spiritual growth of the congregation at GBI Manna Bengkulu.

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## Android-Based Athlete Talent Identification: Preliminary Study



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**ABSTRACT:** This study aims to find out how much the coach's knowledge is related to talent identification in the community environment. This research is descriptive research with a survey method. The data collection technique used a closed questionnaire which totaled 12 valid statements with a reliability value of 0.897. The sample in this study was 40 sports trainers in Yogyakarta, who were taken using a purposive sampling technique, with the criteria of coaches being elite coaches and having coached athletes. The results of the research on how high the trainer's knowledge is to identify android-based talent are: "very low" at 5.00%, "low" at 22.50%, "enough" at 32.50%, "high" at 32.50%, and "very high" of 7.50%.

**KEYWORDS:** Talent identification, athlete, android

### I. INTRODUCTION

In this era, the lack of national sports achievements with other Asian countries became one of the main obstacles for the country to improve its sports achievements (Anggorowati et al., 2023). The support and participation of the community for the development of sport itself is still at a low level so there has been a surge in the development of sports in sports in Indonesia which has not significantly fluctuated in a positive direction for its improvement (Islam & Deegan, 2010). The development of sports is also influenced by the introduction of the public to the types of sports they like. Talent in the new generation will be the determining factor for sporting achievements. Sports achievements have been monitored systematically in accordance with laws and regulations, especially in Indonesia because sport is a means of national dignity (Li et al., 2023). In fact, (Furukawa, 2023) defines sport as a miniature of life, penetrating the level or order of society, and "D.Mac. Arthur" as the guardian of the state. Sports are referred to as the miniature of life because all human components which include cognitive, affective, and psychomotor components work when doing sports.

The community recognizes sport as a national dignity because it involves many factors, especially achievement as a measure of success (Hardman, 2023). Until now, in achieving achievements, especially in the field of sports, there are still many sports that have not achieved optimal results and always face obstacles, one of these obstacles is the difficulty of finding talented athletes (Debois et al., 2015). These factors affect the performance of athletes because at the age of coaching the best performance is not achieved according to the talent they have. The coaching process is a continuation of the Athlete's nursery process, this is in accordance with the statement of Simply (Darroch & Hillsburg, 2017), sports nursery is an important stage in fostering sports achievement. Sports nurseries are the foundation of a sports coaching system building, especially sports achievements. Without a well-systemized nursery, the achievement stage will not be reached. The nursery system is the best way to form a strong foundation, leading to the next stage of development in a sustainable manner.

Talent scouting or talent identification process is a process of giving characteristics (characterization) to the basic ability of a person who is born from birth to be able to base sports skills (Ginés et al., 2023). Furthermore, (Turner, 2023) states that in Western countries, talent scouting or talent identification for prospective athletes is not a new concept in the field of sports, even though its implementation has not been done formally. The process of talent scouting or talent identification provides positive results for sports achievements (Romlah, 2023).

In a more modern era, if sports activists can identify a person's talent through child biometrics, then they can identify a person's athletic ability from an early age (Sweeney et al., 2023). The presence of tools/applications can provide an overview of prospective athletes to understand their talents, which will make it easier for Practitioners to find seeds and develop prospective athletes by looking at the biometric abilities of prospective athletes. Talent scouting has several impacts and benefits. Furthermore, " (Crossen et al., 2023); (Sarmiento et al., 2018) suggests that the use of scientific criteria in the talent identification process has several advantages, namely: (a) reducing the time needed to achieve high achievements by selecting

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talented athlete candidates in certain sports; (b) eliminating the high volume of work, energy, and talent for the Practitioner. Training effectiveness can be achieved, especially for prospective athletes who have high abilities; (c) increasing the competitiveness and number of athletes in achieving high levels of achievement; (d) increasing the confidence of prospective athletes, because the dynamics of achievement appear to be more dramatic compared to other athletes of the same age who have not undergone selection; and (e) indirectly facilitating the application of scientific training, because it is sports scientists who assist in identifying talent that can be motivated to continue and monitoring athlete training. because the dynamics of achievement appear to be more dramatic compared to other athletes of the same age who have not undergone selection; and (e) indirectly facilitating the application of scientific training, because it is sports scientists who assist in identifying talent that can be motivated to continue and monitoring athlete training. because the dynamics of achievement appear to be more dramatic compared to other athletes of the same age who have not undergone selection; and (e) indirectly facilitating the application of scientific training, because it is sports scientists who assist in identifying talent that can be motivated to continue and monitoring athlete training.

## II. METHODS

This type of research is quantitative descriptive research. The method used in this study is a survey and data collection techniques using a questionnaire (Likert scale). This means the coach fills out the questionnaire with 12 questions and contains components of knowledge in athlete identification, which was conducted in Yogyakarta. The research presented in the form of a graded scale has the following questionnaire grid.

**Table 1. Instrument grid**

Variable	Component	Indicator
Android-Based Athlete Talent Identification	visible	The application uses a good selection of color combinations The application presents the clarity and layout of the buttons well There has never been an application before.
	accurate	This application presents a practical display of steps The appearance of this application already presents material that is in accordance with talent identification material View the material provided in this application can be held accountable right.
	structured	The appearance of the material presented in the application is neatly arranged based on talent identification material The appearance of the material presented in the application is sorted based on talent identification material
<b>Amount</b>		<b>12</b>

This self-confidence questionnaire adopts (Nasution, 2019) and then tested for validity with the product moment correlation formula and reliability test Cronbach's alpha with a value of 0.896, which means the questionnaire is valid and reliable. The research location is in Yogyakarta, which will be held in April-June 2020. The population in this study is trainers who are determined by purposive sampling, with the criteria of trainers in Yogyakarta and are willing to be the sample. The sample in this study was 40 trainers, namely 40 trainers from Yogyakarta and Sleman. By distributing a closed questionnaire via Google form as many as 12 items were distributed to the archery trainers, then after the data was collected it was analyzed using SPSS 2021.

## III. RESEARCH RESULTS

The basis and foundation of this preliminary study aim to find out how high the level of coaches' knowledge is about identifying talented athletes based on Android in order to create an athlete talent identification tool:

**Table 2. Knowledge of Athlete Talent Identification Based on Android Visible Components**

No	intervals	Category	Frequency	%
1	51.45 < X	Very high	3	7.50%
2	47.88 < X ≤ 51.45	Tall	13	32.50%
3	44.32 < X ≤ 47.88	Enough	13	32.50%

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4	$40.75 < X \leq 44.32$	Low	9	22.50%
5	$X \leq 40.75$	Very low	2	5.00%
<b>Amount</b>			<b>40</b>	<b>100%</b>

Based on the table shows that the trainer's knowledge in Yogyakarta based on visible factors is in the category of "very low" at 5.00% (2 people), "low" at 22.50% (9 people), "adequate" at 32.50% (13 people), "high" by 32.50% (13 people), and "very high" by 7.50% (3 people). Based on the average value, which is 46.10, the trainer's knowledge of the identification of visible athlete talent is in the "sufficient" category.

**Table 3. Knowledge of Athlete Talent Identification Based on Accurate Android Components**

No	intervals	Category	Frequency	%
1	$13.82 < X$	Very high	4	10%
2	$12.11 < X \leq 13.82$	Tall	3	7.5%
3	$10.40 < X \leq 12.11$	Enough	23	57.5%
4	$8.69 < X \leq 10.40$	Low	8	20%
5	$X \leq 8.69$	Very low	2	5%
<b>Amount</b>			<b>40</b>	<b>100%</b>

Based on the table shows that the knowledge of trainers in Yogyakarta based on the accurate identification factor of athlete talent is in the "very low" category of 5.00% (2 people), "low" of 20.00% (8 people), "enough" of 57, 50% (23 people), "high" 7.50% (3 people), and "very high" 10.00% (4 people).

**Table 4. Knowledge of Structured Component Athlete Talent Identification Based on Android**

No	intervals	Category	Frequency	%
1	$13.73 < X$	Very high	3	7.5%
2	$12.53 < X \leq 13.73$	Tall	8	20%
3	$11.32 < X \leq 12.53$	Enough	17	42.5%
4	$10.12 < X \leq 11.32$	Low	7	17.5%
5	$X \leq 10.12$	Very low	5	12.5%
<b>Amount</b>			<b>40</b>	<b>100%</b>

Based on the table shows that the knowledge of coaches in Yogyakarta based on the structured factor identifying athlete talent is in the category of "very low" at 12.50% (5 people), "low" at 17.50% (7 people), "enough" at 42, 50% (17 people), "high" 20.00% (8 people), and "very high" 7.50% (3 people).

## IV. DISCUSSION

This study uses the Google form because researchers want to take advantage of existing media to more easily and quickly retrieve data. In detail, the sufficient and high categories are 13 people or 32.50%, then in the low category there are 9 people or 22.50%. In the high category accurate factor of 20.00%, in terms of knowledge trainers who have a level of knowledge are quite inclined to be improved to be good because most trainers who have sufficient knowledge already have licenses and graduate degrees, and 10% is not good enough so it must be improved to be able to improve knowledge about identifying the right athlete's talent so that it has an impact on athletes to be better at training or competition.

Trainers who have poor knowledge are mostly young and do not have licenses and experience (Patricios et al., 2023). Knowledge of new things is a component that every coach must have because the provision of methods and updates from increasingly modern tools can improve athlete performance (Schneider et al., 2023). Achievement will increase if it is supported by an optimal coach and achievement will increase if it is supported by updated tools to perfect the natural talent you have, but based on an analysis of the trainer's knowledge regarding the identification of talent there are still trainers who don't know how to identify athletes with the help of this android, there are even some This is the first time hearing the name of this tool (Mansir, 2023).



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"Talent Identification" refers to the process of recognizing current participants with the potential to excel in a particular sport. Talent identification programs are applied worldwide to better identify athletes at an early stage. Best practices in talent detection and talent identification over the past few decades can yield insights new in this field (El Bairi et al., 2023). Talent detection and identification systems cannot be applied "just like that." accurate data on morphological, physical, coordinative, and maturity characteristics (Rohmat Nurjaya et al., 2023). Talent identification is a dynamic process and must take into account maturity status and potential for development, not to exclude children at an early age.

The potential is the ability and quality that a person has but has not been used optimally (Indonesian General Dictionary) (Susanto et al., 2023). From this understanding, we have an understanding that potential is a power possessed by humans, but this power has not been used optimally (Morganti et al., 2023). Therefore, the next task for potential human beings is how to utilize this potential to achieve achievement. In the sports context, potential can be analogous to talent. Talent is a latent ability that someone has from birth (Höner et al., 2023). Talent is the innate potential of family offspring (especially from parents) and forms the basis of real ability (Ribeiro et al., 2023). The role of identifying early talent is very important in the talent scouting and coaching program of an athlete to achieve peak performance (Čular et al., 2023). This is reinforced by the main objective of scouting sports talent is to estimate how much a person's talent has the opportunity to undergo a training program so as to be able to achieve high achievements (Uceng et al., 2019). So that the success of an athlete to achieve the highest achievement can be realized if the sport that is followed is in accordance with the talent that the athlete has. Identifying talent at an early age can also shorten the time needed for an athlete to reach peak performance and be able to increase competitiveness between athletes in undergoing training programs to reach peak performance.

## V. CONCLUSIONS

Talent is a latent ability that someone has from birth. Talent is the innate potential of family descent and forms the basis of real ability. The role of identifying early talent is very important in the talent scouting and coaching program of an athlete to achieve peak performance.

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## The Influence of Knowledge, Ability and Motivation on Organizational Performance in Air Squadron 33 Sultan Hasanuddin Makasar TNI-AU Base



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**ABSTRACT:** This study explains the influence of knowledge, ability and motivation on the organizational performance of the 33rd air squadron of the Indonesian Air Force Base Sultan Hasanuddin Makasar. The results of the study show that knowledge, ability and motivation gain good perceptions and can improve the performance of members of the 33rd air squadron TNI - AU Sultan Hasanuddin Makasar Base. Knowledge, ability to increase motivation in responding quickly to instructions from leaders has a positive impact on member performance to complete work on time. Ability is the most dominant measuring symptom and has the most influence on member performance.

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**KEYWORDS:** Knowledge, Ability, Motivation, TNI-AU, Makassar.

### I. INTRODUCTION

The Sultan Hasanuddin Air Force Base is the Main Base (type A) which is in the ranks of the Indonesian Air Force Operations Command II, tasked with preparing and carrying out the operations of the air elements for which it is responsible. The success of these duties and responsibilities is greatly influenced by the level of readiness of the defense equipment, where the defense equipment that is the responsibility of the Sultan Hasanuddin Air Force Base (HND Air Force Base) is one of the Boeing 737-200 aircraft. 5th Air Squadron as a line unit. Units within the ranks of the Hasanuddin TNI-AU Base in air operations have the task of strategic aerial reconnaissance and supervision/observation of the EEZ on peaceful sea passages throughout Indonesian waters. The C-130 Hercules aircraft serves for unity, not only as a heavy transport aircraft helping natural disasters,

Apart from this, he is tasked with carrying out operational exercises by making the Rapid Response Response Force (PPRC) effective, such as war training operations, as well as assisting in accelerating the handling of natural disasters, troop shifts and other social work. In addition to the Boeing 737-200 and C-130 Hercules aircraft, there are SU-27 and 30 MK aircraft which are tasked with strategic combat actions in order to maintain the sovereignty of the Unitary State of the Republic of Indonesia.

In realizing the mission and vision of the Sultan Hasanuddin Air Force Base, it can utilize its human resources as optimally as possible, so that it can provide added value for the Sultan Hasanuddin Air Force Base. Agencies, especially the air force in the 33rd air squadron, are required to be able to make decisions in terms of the right strategy in order to compete in an increasingly tight and competitive industrial environment (Musadieg et.all, 2018: 34). The decision concerns decisions in all functional areas. One of the things that must be considered by agencies in managing their management functions is how to manage human resources in order to increase work efficiency and effectiveness.

At present the growth and development of the economy in Indonesia is increasing rapidly so that competition is also getting tougher. So that every agency is required to be able to operate as effectively and efficiently as possible, as well as increase the productivity of its human resources in order to survive against its competitors. (Roscahyo, 2013).

The rapid development of technology and the increasing complexity of business competition demands a bigger role in Human Resource Management. The demand for workers with high knowledge and skills is also increasing. This change in the business environment has led to the recognition of the importance of human resources as a source of competitive advantage for organizations. Therefore, human resources who have high knowledge and abilities are seen as able to support employee performance improvement and contribute to determining the future of the company (Robins and Judge, 2008).

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According to Sugiyono (2018: 52) that "Theory is a set of constructs (concepts), definitions, and propositions that function to view phenomena systematically through the specification of relationships between variables, so that they can be useful for explaining and predicting phenomena." Motivation will arise in a person with stimulation and encouragement from other people such as leaders or fellow employees (Amir, Syafar, and Kaseng, 2016).

In research conducted by Amir, Syafar, and Kaseng (2016) shows that motivation has a positive and significant effect on member performance. So that motivation is always the main concern of the Sultan Hasanuddin Makassar Air Force Base because motivation is closely related to the results of employee performance in an agency (Veronica et al, 2019). Work motivation is also often interpreted as a stimulant of desire and willpower that creates a person's enthusiasm to achieve a desired goal.

Winardi (2016: 11) argues that management is a distinctive process consisting of planning, organizing, actuating and controlling actions carried out to determine and achieve the goals that have been set through the use of human resources and other resources. Others, Meanwhile (T. Hani Handoko 2016: 4) put forward the notion of management as working with people to determine, interpret and achieve organizational goals by carrying out the functions of planning, organizing, personnel or organization, direction, leadership and supervision .

Performance is something that is commonly used to monitor the work productivity of human resources, whether oriented to the production of goods, services or services. According to Safrizal., Said, Musnadi., Syafruddin, Chan. (2014), the factors that influence performance are role clarity, employee knowledge, work environment, value systems, preferences and rewards.

An organization, agency or company is closely related to the human resources in it. Where human resources play an important role for all aspects of the organization. According to Hani Handoko (2001) in (M. Devita, 2017), human resources is a process of planning, organizing, directing and supervising the activities of procuring, developing, maintaining, and deploying human resources in order to achieve various individual, organizational and public. According to Sadili Samsudin (2006) in (M. Devita, 2017), human resource management is a management activity that includes utilization, development, research, provision of service limits for humans as individual organizations or business companies. Furthermore, human resources according to Hasibuan (2003) in (Nawa & Kempa,

According to Sidanti, (2015), states that the notion of performance is the willingness of a person or group of people to carry out an activity and perfect it in accordance with responsibilities with the expected results. According to Marifa N, (2018), performance is a real behavior displayed by everyone as work performance produced by employees according to their role in the company. Performance according to Marifa N, (2018), is the result of work that has a strong relationship with the organization's strategic goals, satisfaction, consumers, by contributing to the economy. From the expert opinion, it can be concluded that performance is a result or achievement of someone who has done it with predetermined standards.

The ability to work for an employee is absolutely owned by employees so that the activity or work that is their responsibility can be completed properly in accordance with predetermined conditions. Employee work ability is determined by knowledge ability, skills ability and attitude ability. Several indications of the work ability of employees by themselves can indicate the existence of overall work ability, where the ability possessed by an employee can indicate the level of work ability possessed. With the work ability possessed by employees, it can automatically reflect the performance that will be produced by employees. The ability possessed by an employee is very important for every employee so that he is able to adjust and adapt to the environment in his company. The work ability of employees is considered important because leaders need to understand the characteristics of the organization, through this effort a more appropriate work atmosphere can be created for efforts to improve organizational performance.

### **II. THEORY BASIS**

According to Lijan Poltak Sinambela, et al (2018: 480) employee performance is the ability of employees to do certain skills. Casio in Lijan Poltak Sinambela (2018: 481) performance refers to achieving employee goals for the tasks assigned to them. Stephen Robbins in Lijan Poltak Sinambela (2018: 480) that performance is defined as the result of an evaluation of the work done by individuals compared to the criteria that have been set together.

According to Mangkunegara (2017) The definition of performance (work achievement) is the result of work in quality and quantity achieved by an employee in carrying out tasks that are in accordance with the responsibilities given to him. According to Mangkunegara (2016: 67) the term performance comes from the word job performance or actual performance (work achievement or actual achievement achieved by a person). The definition of performance is the result of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him Mangkunegara (2016: 67).

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Performance is the result of a process that refers to and is measured over a certain period of time based on predetermined conditions or agreements (Edison, 2016: 190). According to Mangkunegara (2016:

According to Priansa (2017) performance is the success rate of employees in completing their work. Employee performance is one of the success factors in determining the achievement of tasks for individuals which can lead to determining the organizational performance of Rivai and Basri in Sinambela's book (2017: 478). According to Edison (2016) performance is the result of a process that refers to and is measured over a certain period of time based on predetermined conditions or agreements. Setyowati and Haryani (2016) also argued that the term performance comes from the word job performance or actual performance (work achievement or actual achievement), namely work results.

According to Sutrisno (2016: 151) explains that, "performance is the result of work that has been achieved by a person from his work behavior in carrying out work activities. Performance itself refers to the level of achievement of tasks that make up an employee's work. According to Sutrisno (2016), performance is a person's success in carrying out tasks, work results that can be achieved by a person or group of people in an organization in accordance with their respective authorities and responsibilities or about how a person is expected to function and behave according to the tasks that have been assigned. charged to him as well as the quantity, quality and time used in carrying out the task.

According to Wibowo (2016) performance is important for organizations because an organization is formed to achieve a certain goal. Achievement of organizational goals shows the work or work performance of the organization and shows it as organizational performance. Organizational work results are obtained from a series of activities carried out by the organization. Organizational activities can be in the form of managing organizational resources or the process of implementing work needed to achieve organizational goals. Torang (2016) says "Performance is the quantity and or quality of the work of individuals or groups within the organization in carrying out basic tasks and functions that are guided by norms, standard operating procedures, criteria and measures that have been set or that apply in the organization".

Based on the definition above, it can be concluded that performance is a factor in the success of achieving a task or the result of one's work in terms of the quality and quantity of the target to be achieved or the task to be carried out within a certain period of time, both in quality and quantity.

Anwar Prabu Mangkunegara (2016) states that: "Factors that influence performance achievement are ability factors and motivational factors. Meanwhile, according to Keith Davis in Anwar prabu Mangkunegara (2016) it is formulated that the factors that can affect performance are:

*Human Performance = Ability + Motivation*

*Motivation = Attitude + Situation*

*Ability = Knowledge + Skill*

Measuring the results of work on tasks that have been given to employees must have an assessment of these employees. Anwar Prabu Mangkunegara quoted by Lijan Poltak Sinambela (2018:527) is as follows:

- Work quality
- Working quantity
- Responsibility
- Cooperation
- initiative

Indicators for measuring performance according to Hersey, Blacnchard, and Johnson in Wibowo (2016, p.86) there are seven performance indicators, namely:

- Objective
- Standard
- Feedback
- Tools or Means
- Knowledge
- Motive
- Opportunity

## **The Influence of Knowledge, Ability and Motivation on Organizational Performance in Air Squadron 33 Sultan Hasanuddin Makasar TNI-AU Base**

Knowledge is a result of curiosity through sensory processes, especially in the eyes and ears for certain objects. Knowledge is an important domain in the formation of open behavior or open behavior (Donsu, 2017). Knowledge is a result of knowledge from humans on the combination or cooperation between a subject who knows and an object that is known. Everything that is known about a particular object (Suriasumantri in Nurroh, 2017).

According to Notoatmodjo in Yuliana 2017, Knowledge is the result of human sensing, or the result of knowing someone about an object through the senses they have (eyes, nose, ears, and so on). So knowledge is a variety of things that a person gets through the five senses. Science is knowledge that aims to achieve scientific truth about a particular object that is obtained through a particular approach or perspective, method (method), and system. According to Sutrisno (2014) said that knowledge (knowledge) is awareness in the cognitive field. For example, an employee knows how to do learning identification, and how to do good learning according to the needs of the company.

Knowledge according to Sutrisno (2014: 207) is information that someone has for a particular field. Knowledge is complex knowledge and is a very important domain in shaping one's actions (Overt behavior). Yuniarsih and Suwatno (2013) say that knowledge is information that someone has, especially in a specific field. Bagia (2015: 27) argues that knowledge is information that has meaning that a person has in a particular field of study According to Prasetyo in Maspriyadi (2019) knowledge is everything that is in our heads, we can know something based on the experiences we have .

Knowledge is an important factor for organizations to develop their capabilities and competitiveness. To optimally utilize knowledge, it is necessary to carry out optimal knowledge management. However, there are indications of weakness, many managers manage knowledge in organizations (Wibowo, 2016: 71). According to Fitriani in Yuliana (2017), the factors that influence knowledge are as follows:

- Education
- Mass media/information sources Information
- Socio-cultural and Economic
- Environment
- Experience
- Age

The dimensions and indicators used in this study adapt the theory expressed by Yuniarsih and Suwatno (2008: 23) which are divided into dimensions and indicators as follows:

- Education
- Experience
- Interest

The indicators used by the author with the reason the author chose this indicator is because the indicators chosen are in accordance with the concepts and phenomena that occur in the field. So in this selected Knowledge Indicator, namely the Knowledge Indicator according to Notoatmodjo (in Albunsyary 2020) is as follows:

- know
- Understanding (comprehension)
- Applications
- Analysis (analysis)
- Synthesis (synthesis)
- Evaluation

The importance of ability because ability is the thing that causes, distributes, and supports employee performance, so that they want to work hard and enthusiastically achieve optimal results. Capability is increasingly important because managers give jobs to their subordinates to do well and integrate towards the desired goals. To give each employee the ability, managers must know the motives and abilities desired by employees. People want to work is to be able to meet needs, both conscious needs and unconscious needs, in the form of material or non-material, both physical and spiritual needs.

According to Thoha (2013) ability is one of the elements in maturity related to knowledge or skills that can be obtained from education, and an experience. According to Blanchard and Hersey's theory in quotes by Kristiani et al, (2013) Work ability is a condition that exists in workers who are truly efficient and effective in working according to their field of work.

Ability is a current assessment of what a person can do. According to Blanchard and Hersey's theory in quotes by Kristiani et al, (2013) Work ability is a condition that exists in workers who are truly efficient and effective in working according to their field of

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work. While ability according to Robbin (2013: 52): "Ability is the capacity of an individual to perform various tasks in a job. Robbin further stated that ability is an up-to-date assessment of what a person can do.

Work ability (WA) can be seen as a balance between work demands and individual resources. Work ability is also defined as the extent to which the person can work (Haitze et al, 2012). Work ability (WA) is a dynamic aspect, a determination to build, as well as an individual characteristic that has been systematically and negatively correlated with age, and also systematically positively correlated with quality of work life, quality of life, productivity and general well-being (Fernandes et al, 2007).

Robbins and Judge (in Suhartini, 2015) argue that ability is the capacity of employees to perform various tasks in a job. According to Jufrizen (2020) Capability is one of the things that affects the quality of health services. According to I Budiarti (2016) Ability is a trait that is born or learned that allows someone to complete his work, both mentally and physically. Employees in an organization, although well motivated, not all have the ability to work well. Abilities and skills play a major role in individual behavior and performance.

Work ability is also defined as the extent to which the person can work (Harlie, M., 2012). Blanchard and Hersey (2013) state that work ability is a condition that exists in workers who are truly efficient and effective in working according to their field of work. Based on the above understanding, it can be concluded that a person's abilities will be reflected in the knowledge and skills they have supported by their physical and psychological conditions. Therefore, it is not enough to carry out a job if you only have knowledge and skills, but you must also be supported by a strong ability to carry out the job.

Handoko in Binardi (2013: 12) explains that there are factors that determine a person's work ability, namely:

- Formal education factor
- Capability Factor
- work experience factor

In the research of Raharjo, Paramita & Warso (2016) indicators of work ability include:

- Knowledge
- Ability (training)
- Experience
- Skills
- ability to work

In this study, the ability indicators were focused on the theory put forward by Winardi (2002) which consisted of the following dimensions:

- Skills
- Knowledge
- Work Experience

To inspire someone to work, an individual or a group in the best possible way, we need to unlock their own personal motivations. The art of motivating people begins with studying how to influence individual behavior. If we understand, we may get the desired benefits of both the organization and its employees. The following are some definitions of performance according to experts:

Robbins, 1999 (in Widodo, 2016: 322) states motivation as a process that causes intensity, direction and individual continuous effort towards achieving goals. Intensity shows how hard a person is trying. But high intensity is unlikely to lead to good performance results, unless the effort is made in a direction that benefits the organization. Because it must be considered the quality of effort and intensity. Motivation has a dimension of continuous effort. Motivation is a measure of how long a person can keep their efforts. Motivated individuals will carry out tasks long enough to achieve their goals.

Meanwhile, Green and Baron (2003) (in Wibowo, 2016: 322) argue that motivation is a series of processes that generate, direct and maintain human behavior towards achieving goals. Arousing has to do with the drive or energy behind the action. Motivation is also concerned with the choices people make and the direction of their behavior. Meanwhile, the behavior of maintaining or maintaining how long people will continue to try to achieve goals.

According to Terry in 2002 (in Hasibuan, 2017: 145) Motivation is the desire that exists in an individual that stimulates him to take actions. According to Widodo (2015: 187) Motivation is the power that exists within a person, which encourages his behavior to take action. The magnitude of the power incentive in a person to perform a task or achieve a goal shows the extent to which the level of motivation is.

Then Edy Sutrisno (2016: 110) states that motivation is "something that gives rise to work motivation." From some of the meanings above, it can be concluded that motivation is an impulse that moves a person to participate in achieving the goals set by the company.

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The several factors that influence motivation include intrinsic motivation factors, namely factors that come from within the individual and extrinsic motivation factors, namely factors that come from outside the individual. Motivation is influenced by several factors that can be distinguished on internal factors and external factors from a person according to Sutrisno (in Wardani, 2009: 124) including:

- Internal factors
- External factors

Human motivation that has been developed by Maslow through the explanation that motivation is triggered by human efforts to meet the needs of Mathis and Jackson (2001) in Harry Murti (2013: 3) In this theory, Maslow classifies human needs which are sorted into five categories. Maslow's hierarchy of needs consists of:

- Physiological
- Security
- Social
- Award
- Self-actualization

According to Hasibuan (2017: 145), that employee motivation is influenced by the need for achievement, the need for affiliation, the need for knowledge and the need for power. Indicators of Work Motivation according to Anwar Prabu Mangkunegara (2009:93) in Bayu Fadillah, et all (2013:5) as follows:

- Responsibility Having a high personal responsibility for his work
- Job Achievement Doing something / work as well as possible
- Opportunity For Advancement Desire to get fair wages according to work
- Recognition of Performance Desire to earn higher wages than usual
- Challenging work Willingness to learn to master his work in his field

### **III. RESEARCH METHOD**

The research design is quantitative research, namely research that has a hypothesis, which requires statistical tools to prove the hypothesis. This type of research is causal comparative using two independent variables and one dependent variable. The results of the influence between the variables studied will be explained in more depth so that this type of research is *isexplanatory/* explanation.

The scope of this research is in the field of Human Resource Management (HRM) with a focus on knowing the effect of knowledge, ability and motivation both simultaneously and partially have a significant effect on organizational performance in Squadron 33 TNI-AU Base Sultan Hasanuddin Makasar.

Location This research was conducted at Air Force Squadron 33 Sultan Hasanuddin Makasar Air Force Base. The choice of location for this research is based on the field of research Human Resources in serving the community which is satisfying if the 33rd Air Squadron of the Sultan Hasanuddin Makasar Air Force Base has high knowledge, ability and motivation and has responsibility for high organizational performance in the Commander's programs and policies Air Force Squadron 33 Sultan Hasanuddin Makasar Air Force Base.

### **IV. RESEARCH RESULTS AND DISCUSSION**

Sultan Hasanudin Air Base in its journey has undergone several changes which were previously named Mandai Airport. In 1958 it was changed to Lanud Hasanudin in accordance with the decision of the Kasau Number: Kep/167?V/1958 dated 17 May 1958. This was an effort to honor and remember the services of a hero from South Sulawesi, namely; Sultan Hasanuddin, And then perfected through the Kasau regulation Number: Perkasau/68/IX/2008 dated 17 September 2008 concerning Changing the name of the Hasanuddin TNI-AU Base (HND) to the Sultan Hasanuddin TNI-AU Base (HND), hence officially the name Hasanuddin air base changed to Sultan Hasanuddin air base.

Description of Respondents This study was grouped according to gender, age, education and length of work at the Sultan Hasanuddin Makassar Air Force Base. To measure the variables of knowledge, ability, motivation and work performance of members at the Sultan Hasanuddin Makassar Air Force Base.



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**Table 1. Distribution of Respondents by Gender**

No	Gender	Amount	Percentage
1	Man	28	93,3
2	Woman	2	6,7
	Amount	30	100

Source: Data processed in 2023

From table 1 above it is known that the working respondents consisted of 28 men (93.3%) and 2 women (6.7%). For the distribution of the number of members is more dominant male, because this field of work requires more energy and time.

The results of the tabulation by age for members at the Sultan Hasanuddin Makassar air base are presented in the table below:

**Table 2. Distribution of Respondents by Age**

No	Age	Amount	Percentage
1	< 25 years	-	-
2	25-35 years	13	43,3
3	> 35 years	17	56,7
	Amount	30	100

Source: Data processed in 2023

From table 2 above, it is known that there were 1 person (2.9%) working in the age group under 25 years, 13 people (43.3%) aged 25-35 years and 17 people over 35 years old ( 56.7%). For the age distribution of members, it is more dominant in the age range > 35 years because this age is the productive age of members at work.

The results of the education tabulation for members at Sultan Hasanuddin Makassar Air Force Base are presented in the table below:

**Table 3. Distribution of Respondents Based on Education Level**

No	Age	Amount	Percentage
1	Senior High School	-	-
2	D3	19	63,3
3	S1-S2	11	36,7
	Amount	30	100

Source: Data processed in 2023

From table 3 above, it is known that 0 people or 0% of respondents worked based on high school education level, 19 people or 63.3% D3 or S1 - S2 and 11 people or 36.7%. The distribution of members based on education is more dominant at the D3 level because this field of work requires a good level of accuracy and skills.

The results of the tabulation by length of service for members at Sultan Hasanuddin Makassar Air Force Base are presented in the table below:

**Table 4. Distribution of Respondents Based on Years of Service**

No	Years of service	Amount	Percentage
1	6-10 years	0	0
2	11- 20 years	11	36,7
3	>20 years	19	63,3
4	Amount	30	100

Source: Data processed in 2023

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From table 4 above, it is known that 0 people or 0% worked based on 0 years of service, 11 people or 36.7% of 11-20 years of service and 19 or 63.3% of  $\geq$ 20 years of service. For the distribution of members based on years of service between more than  $\geq$ 20 years. This illustrates that members have a good level of experience in carrying out daily tasks.

Knowledge of members of the air squadron of three-three TNI-AU bases Sultan Hasanuddin Makasar. five indicators are measured, namely education, employment, age, environmental and socio-cultural factors.

For education indicators, most respondents tend to strongly agree on the choice. The level of education you have achieved will affect your performance. The higher the level of education you have achieved, the better the performance you will produce. This shows that in the air squadron of three TNI-AU bases Sultan Hasanuddin Makasar. The results of the description analysis show that most members have Diploma three education which shows a good level of understanding in overcoming work problems.

For work indicators, most respondents tend to strongly agree on my choice of carrying out tasks according to time. This shows that in the air squadron of 33 TNI-AU base Sultan Hasanuddin Makasar that most members are able to carry out their duties according to the allotted time. The age indicator of most respondents tends to strongly agree on the choice. Age level is very influential on the work I handle. This shows that the longer the members work, the more able to understand the work. Indicators of environmental factors most respondents tend to strongly agree on the choice I feel comfortable with the work atmosphere that exists in the company. This shows that most of the three-three air squadron members are working in good condition and comfortable. For socio-cultural indicators, most respondents tend to strongly agree on the choice. Always be firm when it is correct in carrying out the tasks and obligations given. This shows that members dare to be assertive in making decisions in completing work.

### V. CONCLUSIONS

This study explains the effect of knowledge, ability and motivation on the organizational performance of the 33 air squadron of the Sultan Hasanuddin Makassar Air Force Base, where the conclusions and research suggestions are presented below:

1. Knowledge, ability and motivation to gain good perceptions and can improve the performance of members of the 33 air squadron TNI - AU Sultan Hasanuddin Makasar Base.
2. The results of the study show that knowledge, ability and motivation can affect the performance of members of the 33rd air squadron of the TNI - AU Sultan Hasanuddin Makasar Base. Knowledge, ability to increase motivation in responding quickly to instructions from leaders has a positive impact on member performance to complete work on time.
3. Ability is the most dominant measuring symptom and has the most influence on member performance. Thus the increase in member performance is influenced by the knowledge, abilities and motivation of members.

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## Student Assessment of Service Quality in the Organization of Foreign Language Exams and Certification at the University of Labor and Social Affairs



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**ABSTRACT:** The article has provided an overview of the regulations on foreign language output standards of the Ministry of Education and Training, English output standards and supporting activities in organizing English exams and certificates at the University of Labor and Social Affairs. To accomplish the set research objectives, the authors used quantitative research methods with a sample size of 385 students who participated in the exam and received English certificates. The survey data were included in statistical analysis and multivariate regression. The analysis results show that the service activities in the organization of exams and certification of output standards are highly appreciated by students. All observed variables with the following contents: Exam organization plan, certification; Organize for students to register for the exam; Informing students about the exam schedule and time of the exam; Announcement of exam results and issuance of certificates to students both have a positive, positive impact on students' perceived quality. Especially, the activity of issuing certificates to students who meet the English output standards has the strongest impact. From the analysis results, we also found that the factors included in this study could only explain 27.6% of the dependent factors, which is perceived quality. Therefore, in future studies, we need to pay more attention to and evaluate factors that have the potential to influence such as gender, major, and number of years of schooling of students to better assess perceived quality.

**KEYWORDS:** Foreign language certificate, Student, Service quality, University of Labor and Social Affairs

### 1. INTRODUCTION

Economic integration has helped Vietnam receive a huge source of FDI. Established FDI enterprises have developed rapidly, continuously appearing in many fields and industries. With the development of import and export, enterprises have increased their search for foreign partners to develop their products' production, business and consumption. This economic development has increased the need to recruit high-quality human resources for import-export and foreign-invested enterprises. One of the factors assessing the quality of human resources of enterprises is good foreign language skills. The foreign language output standards for university training are compulsory regulations of the Ministry of Education and Training of Vietnam. Regulations on criteria for reaching the threshold The English output standard is different at educational institutions and depends on the training industry and the quality of the training program. The University of Labor and Social Affairs promulgates regulatory documents on English output standards in accordance with regulations and assessment standards in accordance with regulations. The school has organized exams and provided English output standards for many training courses. This activity has become a regular activity of the University. Assessing the quality of staff's perception of service activities in the organization of English exams and certification at the University of Labor and Social Affairs after a period of implementation is essential for us to see what activities are not working and which service activities need to be improved or changed in methods to improve service quality, thereby enhancing student satisfaction. With that goal in mind, we have conducted a study on the content "Student Assessment of service quality in the Organization of foreign language exams and Certification at the University of Labor and Social Affairs".

### 2. LITERATURE REVIEW

**2.1. Regulations on foreign language output standards** According to Decision No. 1982/QĐ-TTg of the Prime Minister: Approving the Vietnam National Qualifications Framework issued on October 18, 2016, for Level 6 for university diplomas, the output

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standard for graduates of the training course must have "Foreign language ability level 3/6 Vietnam's Foreign Language Competency Framework". This foreign language requirement of the university training level corresponds to the B1 level according to the European Framework. Currently, Vietnamese universities are allowed to choose one of many languages to build output standards in foreign languages for their units such as English, Chinese, Korean, and Russian ... but some schools only specify one type of Foreign Language Output Standard and English. There are two ways for students to meet the Foreign Language Output Standards, such as taking an exam at the Foreign Language Output Standards Examination Council organized by the school or using prestigious foreign language certificates following the requirements of the school to apply for the achievement of the Foreign Language Output Standards. As we mentioned, B1 is a level equivalent to level 3/6, so B1 is the minimum level used by most universities to consider Foreign Language Output Standards. Some specific fields of study and some universities have foreign language-related majors, high-quality majors, and associate programs often require a higher score on the Foreign Language Output Standards. In addition to using foreign language proficiency standards according to the 6-level competency framework and B1, many schools accept (via conversion) international English certificates such as IELTS, TOEIC, TOEFL, and APTIS. Universities determine the score range from 5.5 to 6.0 on the IELTS and the score for the TOEIC test is between 450-550 points. Many schools such as RMIT University, National Economics University, Faculty of Foreign Languages - Thai Nguyen University, Faculty of International Relations - Vietnam National University, Hanoi (Hanoi) also require students to have IELTS scores between 6.5 and 7.0 to be qualified to graduate. Some schools have average requirements such as the University of Technology - Hanoi National University requires IELTS 5.5, University of Electricity requires IELTS 5.0 - 5.5, Hanoi University of Pharmacy requires IELTS 5.0 - 5.5, FPT University requires IELTS 6.0 and Vietnam Maritime University is IELTS 4.0 (CLC: IELTS 5.0, Foreign Language Department IELTS 6.0+).

**Table 1: National Economics University foreign language output standards**

Industry/Training Program	Vietnam Foreign Language Competency Framework	International Certificate in English			
		IELTS	TOEFL IBT	TOEFL ITP	TOEIC
English language	Level 5	6,5	79	x	x
Advanced program	Level 5	6,5	79	x	X
High-Quality Programs, POHE and English Language Programs	Level 4	6,0	60	543	730
Regular Program (Learning in Vietnamese)	Level 4	5,5	46	500	600

**Source:** National Economics University Website, Hanoi, Vietnam

### 2.2. Regulations on English output standards at the University of Labor and Social Affairs

University of Labor and Social Affairs is one of the universities that train highly qualified human resources in the application-oriented direction with strengths in the fields of Human Resource Management, Social Work, Insurance, Accounting and Business Administration; is a center for scientific research, technology transfer, international cooperation in the field of economy - labor - society to meet the development requirements of the industry, the country and international integration. In order to carry out the mission of training high-quality human resources for the social economy, the University of Labor and Social Affairs has issued regulations on foreign language output standards as prescribed by the Ministry of Education & Training. In 2021, before a number of new points in the Higher Education Law, the Ministry of Education & Training issues Circular No. 08/2021/TT-BGGDDT dated March 18, 2021, of the Minister of Education and Training on the Regulation on training at university level. The University of Labor and Social Affairs has issued a new Regulation on training at the university level according to this circular. Before the change in the Regulation on training at the university level, the University implemented the rebuilding of regulations on foreign language output standards. Therefore, Decision No. 1838/QĐ-DHLĐXH dated October 27, 2021, of the Rector of the University of Labour and Social Affairs on promulgating regulations on English output standards, assessment and recognition of English output standards for full-time undergraduate students of the University of Labor and Social Affairs, replacing the old decision and taking effect for graduates in English in 2021. Graduates of the University of Labor and Social Affairs need to achieve the English language output standard equivalent to the TOEIC score of  $\geq 450$  for majors in the Faculty of Business Administration and  $\geq 400$  for the remaining majors. The decision also stipulates the organization of the assessment of English proficiency standards in Article 3 of this decision. The school continuously organizes assessments of English language proficiency for regular university students. Students have the right to register and take the assessment many times to achieve the output standard before graduation. After students participate in the evaluations organized by the University and achieve the points specified in Article 2 mentioned above, they will be recognized by the school as meeting the output standards of English proficiency. The regulations also specify the part

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that considers transferring scores of English certificates that students already have in order to exempt these students from taking the exam. Accordingly, when students have English certificates issued by IIG organizations that are representatives of the American Educational Testing Service (ETS), the British Council, the IDP organization of Australia and the ESOL organization of the University of Cambridge (UK). Students who have one of the international English certificates converted to TOEIC scores that meet the requirements in Article 2 will be exempt from assessment and will be recognized as meeting the output standards of English proficiency. The University of Labor and Social Affairs stipulates that English is the only language that considers the foreign language output standards for students. The form of consideration includes the organization of direct exams for students at the school and the form of conversion from the certificates specified in this decision. The University of Labor and Social Affairs' foreign language output benchmark is in the average group, ensuring the threshold of the Ministry of Education & Training. The school does not have high regulations because we have not trained high-quality subjects and specific training disciplines. However, in the near future, we need to have some changes in the Foreign Language Outcomes Standards for English Language majors to be enrolled starting in 2022.

**Table 2: Converting TOEFL and IELTS scores to TOEIC scores**

TOEIC	TOEFL PBT	TOEFL CBT	TOEFL IBT	IELTS
400	400	120	40	4
450	450	133	45	4,5

Source: University of Labor and Social Affairs

### 2.3. Supporting activities in organizing English exams and certificates at the University of Labor and Social Affairs

Service is assessed by attitude, behavior, communication ability, skill level, education level, health status, appearance, and age ... Serviceability includes the capacity and service quality of student support staff. According to Decision No. 65/2007/QĐ-BGDĐT of the Minister of Education & Training on the Promulgation of Regulations on university quality assessment standards and a set of quality accreditation standards in Higher Education, the service factor is assessed through a team of technicians and staff with sufficient numbers, professional capacity and periodic professional training, effective service for learning and research. But in Circular No. 12/2017/TT-BGDĐT dated May 19, 2017, of the Ministry of Education & Training promulgating regulations on accreditation of higher education institutions to replace Decision No. 65/2007/QĐ-BGDĐT, the activities serving learners are specified more specifically and clearly in Article 20 of this circular. Accordingly, activities to serve and support learners must perform well the following contents: Plan to implement activities to serve and support learners as well as a student monitoring system. Student service and support activities as well as learner monitoring systems are implemented to meet the needs of stakeholders. Student service and support activities as well as learner monitoring systems are reviewed. The student service and support activities as well as the learner monitoring system are improved to meet the needs and satisfaction of the stakeholders. Referring to the standards The activities to serve and support learners are specified in this circular, the organization of the exam and the issuance of the English output standard certificate must ensure the following contents: There is a plan to organize the exam and issue the English output standard certificate for students; Organize for students to register for the English output standard exam; Inform students of the exam schedule and time of the exam before the exam takes place; Notify exam results to students; Issue certificates to students who meet the English output standards. The above are some of the service contents of the training support block in organizing exams and granting certificates of English output standards for students. The activities in service of marking exams, assisting students in reviewing exam results and organizing examination exemptions are not mentioned in this article.

### 3. METHODS

The study used both general and quantitative research methods. In the review study, the authors conducted an understanding of Vietnam's university training regulations and regulations on competency frameworks. From these documents, the authors have provided a theoretical basis for the regulation of foreign language output standards in Vietnam. Next, the research team reviewed the regulations issued on foreign language output standards at universities across the country to get an overview of the current assessment of foreign language output standards for students such as: organization, calculation and conversion of points from prestigious foreign language certificates. With the research space conducted at the University of Labor and Social Affairs, the authors also reviewed university training regulations and decided on the schools English output standards. From the regulations of the University of Labor and Social Affairs, the authors analyze and compare this activity with other universities, recognizing the point that needs to be changed in the regulations on English output standards at the University of Labor and Social Affairs. Based

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on the set of educational quality assessment standards issued by the Ministry of Education & Training, the research team assesses the requirements for student service and support activities specified in this set of evaluation criteria and identifies service activities in the organization of exams and issuance of English output standards at the University. Based on the provided service criteria, the research team used the quantitative research method and conducted a survey of students who took the exam and received the English Output Standard certificate to know how the student's evaluation of the service quality in the organization of the English exam and certification at the University of Labor and Social Affairs is today. Collected data is included in statistical analysis by the author's team to identify the students' choice of assessment options and see which factors are assessed as weak. Next, the authors used multivariate regression analysis to assess the impact of service activities on the perceived quality of students in this activity. The independent variables are the activities to serve and support the learners, the perceived quality is the dependent variable. The hypothesis for regression analysis is that student service activities in the organization of exams and certification of English output standards have a positive relationship with the perceived quality of students.

### 4. RESULTS

The study sample included 385 students who took the English Outcomes Standard exam and received the University of Labor and Social Affairs English Outcomes Standard certificate. The sampling method is the specified method. This sampling method is not recommended for use in investigation and evaluation activities. However, it is suitable for supporting the resolution of the objective set forth in this study. Survey participants will be interviewed directly and data about personal information will not be made public. The survey consists of 6 brief questions for students to assess service quality. The results of the evaluation of the activities for the organization of the certification exam and the perception of the quality of the students are presented in the following section.

#### 4.1. Descriptive statistical results on observed variables of service and perceived quality

##### *Plan to organize exams and issue certificates of English output standards*

The question used for the survey was "The school always plans to organize exams and issue certificates of English output standards for students". This independent observation variable we denote as SER1. The analysis results of SER 1 show that the number of votes Agree and Totally Agree is 314 selections, accounting for more than 80%. The group of students who chose to hesitate was 48 times, accounting for 12.4%. The lowest is the two options. Strongly disagree and disagree with only 23 choices and account for 6% of the total opinions of students participating in the survey. From this result, we see that students agree and believe that the University always plans to organize exams and issue certificates of English output standards for students. We know, the school plans to organize the English output test for students twice per month and continuously throughout the year. Thus, students can base themselves on their plans and the school's exam organization plan to choose for themselves the appropriate exam time. In addition, exchanging with many students also commented that "The process from planning to organizing the English output test for students is always correct", so they do not worry about their intentions. However, in the survey we still have 6% of the votes disagree and strongly disagree. Discussing to find out the reason, these students thought that they did not receive the plans and were passive in their registration for the English output standard exam.

**Table 3. Analysis results on the plan to organize the exam and issue**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very mush disagreement	5	1,3	1,3	1,3
	Disagree	18	4,7	4,7	6,0
	Hesitate	48	12,5	12,5	18,4
	Agree	182	47,3	47,3	65,7
	Totally agree	132	34,3	34,3	100,0
	Total	385	100,0	100,0	

**Source:** Processing of survey data of the research team

##### *Organize registration for the English Output standard exam*

We use the question "The head of the organization allows students to register for the English output test easily and quickly". This independent observation variable is denoted SER2. The results from the survey and analysis showed that only 1 vote chose the option strongly disagree and 9 times chose the option Disagree. This group of students said that it is not easy to register for the English test. The reason given by these students is that registration for the exam is required to register directly at the Training Management office, but not online. To explain this question, we have discussed it with the registration service staff, we know that

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the continuous organization of the exam and the students taking the exam of many different courses, the continuous opening of online registration will cause an increase in operating costs, leading to an increase in the exam costs of students. Thus, there is no form of registration for the online English output test because the University wants to reduce the cost of taking the exam for students. The remaining opinions all chose to agree and strongly agree, although a large number of students hesitated, the reasons were the same as the group of students who chose not to agree.

**Table 4: Results of analysis of activities of organizations registering to participate in the English Output standard exam**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very mush disagreement	1	,3	,3	,3
	Disagree	9	2,3	2,3	2,6
	Hesitate	120	31,2	31,2	33,8
	Agree	157	40,8	40,8	74,5
	Totally agree	98	25,5	25,5	100,0
	Total	385	100,0	100,0	

Source: Processing of survey data of the research team

### Notice of exam schedule and exam time

To find out about this issue, we use the survey question "The school always fully informs students about the exam schedule and exam time before the exam takes place". The symbol of this question is SER3, the analysis results show that the majority of students choose the option Agree and Totally agree with a total of 285 turns, accounting for 74%. Students who chose the salary option had 96 times, accounting for 24.7%. The number of times choosing the option Strongly disagree and Disagree accounts for a very small percentage of 1.3%. When talking with students, we noticed that they thought that the school's service in the announcement of exam schedule and exam time was done very well. The information about the exam schedule, exam room, registration number and list of students taking the exam is specific to each test location, exam date, and exam and this information is sent to each student's account before the exam date.

**Table 5: Analytical results of notification activities about exam schedule and time of exam organization**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very mush disagreement	1	,3	,3	,3
	Disagree	3	,8	,8	1,0
	Hesitate	96	24,9	24,9	26,0
	Agree	175	45,5	45,5	71,4
	Totally agree	110	28,6	28,6	100,0
	Total	385	100,0	100,0	

Source: Processing of survey data of the research team

### Notify students of exam results

We use the question "The school always informs students of exam results at a suitable time" and denoted SER4. The results of the investigation and data analysis showed that none of the students chose the option Strongly disagree. The number of students choosing the option Disagree was 7 times, accounting for 1.8%. The Hesitating option had 92 turns of students choosing, accounting for 23.9%. Selecting the option Yes, there were 113 turns of students with a rate of 29.4%. With a rate of nearly 50%, it belonged to the Totally Agree option. Thus, the majority of students think that the school's job of announcing exam results for students has been done very well. Students said that after taking the test for about 10 days, the results of the English output standard exam will be published on the school's website and on each student's personal information page. Time to pay test scores quickly helps student's self-control their study plans and retake the exam if they do not pass.

**Table 6: Analytical results of student notification of exam results**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	7	1,8	1,8	1,8
	Hesitate	92	23,9	23,9	25,7
	Agree	113	29,4	29,4	55,1

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	Totally agree	173	44,9	44,9	100,0
	Total	385	100,0	100,0	

Source: Processing of survey data of the research team

### Issuing certificates for students

The question included in the survey was "The school issues certificates to students who meet the convenient and easy English output standards" denoted SER5. The results of data analysis showed that more than 300 surveyed students chose the option Agree and completely agree with a total rate of 81.8%. The option Strongly Disagree with 4 choices, accounting for 1%, the option Disagree with 3 choices, accounting for 1.8%, the option hesitantly has 63 choices, accounting for 16.4%. These students also feel that the awarding of certificates is only done on one day of the week, making them feel uncomfortable. When discussing this issue with the Certificate Authority, it is known that the certificate is only awarded to students who have needs and need to register first. In addition, the school's training management department does a lot of work such as organizing learning, organizing exams, and organizing enrollment, so there are not enough human resources for assigning officers to pay certificates every day.

**Table 7: Analysis of survey data on certification activities**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very mush disagreement	4	1,0	1,0	1,0
	Disagree	3	,8	,8	1,8
	Hesitate	63	16,4	16,4	18,2
	Agree	148	38,4	38,4	56,6
	Totally agree	167	43,4	43,4	100,0
	Total	385	100,0	100,0	

Source: Processing of survey data of the research team

### Quality of service for exam organization and certification

This is the last question in our survey. The purpose of this question is to determine the students' perception of quality with the University of Labor and Social Affairs' Quality of Examination and Certification Service. This result will show whether the school's service in training has been appreciated or not, the symbol of this dependent observable variable is QLT. The survey results show that there are 4 students choosing the option completely disagree, accounting for 1%, 7 students choosing the option Disagree, accounting for 1.9%, 50 students choosing the option Hesitating, accounting for 13%, 165 students choosing the option Agree, accounting for 42.9%, 159 students choosing the option totally agree, accounting for 41.3%. The results presented in Table 8 show that students perceive the service quality of the examination and certification activities very well.

**Table 8: Perceived analysis results on the quality of examination and certification activities**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very mush disagreement	4	1,0	1,0	1,0
	Disagree	7	1,8	1,8	2,9
	Hesitate	50	13,0	13,0	15,8
	Agree	165	42,9	42,9	58,7
	Totally agree	159	41,3	41,3	100,0
	Total	385	100,0	100,0	

Source: Processing of survey data of the research team

### 4.3. Multivariate regression analysis

The purpose of the research team when performing this analysis is to clarify how the impact of service factors affects the perceived quality of students and how much these factors explain the perceived quality. The analysis results show that R Square = 0.276, which indicates that the factors serving exam organization and certification can explain 27.6% of student's satisfaction with the perceived quality, and the factors that have not been mentioned in this study play the role of explaining the rest of the students' perceived quality. The results of the ANOVA test also show that the research group's hypothesis is accepted. It means that student service activities in the organization of exams and certification of English output standards have a positive relationship and a positive impact on the perceived quality of students. The table of multivariable regression results shows the influence of each factor. Accordingly, the strongest impact on students' perceived quality of quality is the SER5 factor, the second is the SER2 factor.



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The remaining factors are SER1 ranked 3rd, SER 3 ranked fourth and finally SER 4, these three factors have the lowest influence on the perceived quality of students.

**Table 9: Results of multivariable regression analysis**

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta				Tolerance	VIF
1 (Constant)	,873	,305			2,857	,005		
SER1	,128	,043	,137		3,000	,003	,912	1,097
SER2	,179	,045	,180		3,999	,000	,946	1,057
SER3	,095	,051	,090		1,886	,060	,839	1,192
SER4	,054	,045	,057		1,203	,230	,849	1,178
SER5	,359	,046	,362		7,841	,000	,898	1,113

a. Dependent Variable: QLT

Source: Processing of survey data of the research team

### 5. CONCLUSION

The analysis results for each observed variable presented in the above section show that students rate the service quality of the school in organizing exams and granting certificates of English output standards very high. Combined with the results from descriptive statistical analysis for all survey variables, we have more and more grounds to confirm that the school's service activities have been very successful. The average value of the variables is almost above level 4. For example, the observed variables SER4 and SER5 with Mean = 4.22, observed variables SER1 and SER3 have an average value above 4, and the lowest level is the variable SER2 with 3.89. Multivariate regression analysis showed that all independent observed variables have a positive and positive influence on the independent variable. However, the largest degree of influence belongs to the observed variable SER5, which tells us that in order to improve the perceived quality of students, it is necessary to focus on improving the quality of service for issuing standard output certificates for students. In addition, the article also points out the causes and reasons leading to the mixed opinions of students, making their perceived quality very low. Although the University creates all conditions to reduce exam costs for students, we do not clearly inform students, which has led to frustration for students. Strengthening the dissemination of this information in an official way to students is the solution that needs to be taken to solve the above problems.

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## Representing Queer in Popular Literature: Reader Analysis on Casey McQuiston's *Red, White & Royal Blue*



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**ABSTRACT:** Following the increasing public awareness of gender issues nowadays, this also has an impact on the increasing frequency of topics that arise regarding gender in popular literary works, one of which is the queer representations in the LGBTQ+ community as shown in Casey McQuiston's *Red, White & Royal Blue*. How the queer community presented in this novel is also related to how the reader ultimately forms perceptions about the people in the community itself. This study aim to see how readers respond based on their interpretation and judgement of queer representations that appear in the main characters of the novel *Red, White & Royal Blue*. This study uses a qualitative approach, main data source in this study are in the form of readers' comments on the novel *Red, White & Royal Blue* taken from the Goodreads website. Specifically, this study uses the Encoding-Decoding reception theory model by Stuart Hall to see how readers respond to queer representations that appear in the novel, and what aspects attract readers that have an impact on the popularity of the novel. From the analysis conducted, it was concluded that (1) readers of Casey McQuiston's *Red, White & Royal Blue* regarding their response to queer representations that appear in the novel, are divided into 3 groups namely the dominant-hegemonic position, the negotiated position, and the oppositional position, (2) the queer representation that appears in the two main characters of this novel is the main factor that makes this novel so popular, besides that there are several aspects that are criticized by readers, but these do not really have an impact on the popularity of the novel.

**KEYWORDS:** Queer representation, popular literature, reader response

### INTRODUCTION

Movement and struggles voiced by the LGBTQ+ community are topics that have been well known in society, responded with pros and cons, yet members of the community continue to fight for their existence to be acknowledged and visible. Then, gradually the efforts made by the LGBTQ+ community resulted justice they aspired for, several countries have been legalized same-sex marriage and laws for their rights and protection as citizens. Currently, the situation in society being more welcomed LGTBQ+ community's existence that leads opportunities for queers to work and prove their quality. Then, one of the spheres develops along with the acceptance of LGBTQ+ is literature.

Stated by Byrdsong, "according to sales numbers obtained from NPD Group, queer book sales this year have surpassed those of 2021 to the tune of 39%. This indicates a change in generational attitudes towards the genre, which could be attributed to Gen Z attitudes towards the LGBTQ community" (2022). Data sales of queer books have increased, it proves that people, especially generation Z are increasingly awake towards the LGBTQ+ community, acceptance of this community increases sales and recognition to queer writers, that their work being recognized and accepted as a book option. Brydsong also added if there is an additional sale of 1.3 million units for queer books in the Young Adult genre, it indicates that more publishers are investing in queer writers who write about queer stories in that genre.

Market demands and enthusiasm expressed by readers who adore queer books, reveals that Young Adult novels with queer stories are the instance of popular literature. There are several aspects that determine that a work is popular literature, including the theme, the way of presenting language techniques, and the author following a general pattern that is being

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favored by the public, then it becomes popular throughout the world (Adi, 2016: 20). Thus, there are various types of popular literature, which can be in the form of writing such as essays, and in the form of fiction such as novels or films (Adi, 2016: 19). The instance of popular literature Young Adult genre novel with queer representation is Red, White & Royal Blue, published in 2019, this novel was written by a queer writer, Casey McQuiston, who is a non-binary. The novel is about US president's son named Alex who did not like the existence of British prince named Harry, but they were forced by circumstances to be friends in order to avoid the media spotlight and diplomatic crisis protecting Alex's mother position in the next presidential election. As their relationship grew closer, Alex and Henry began to open up and accept their sexuality, and in the end of the story it was explained that they had decided to come out to their families, and were accepted. Then, this novel is the epitome of queer novels that are on demand in the market and become a popular topic around book readers, it also has seven printings with 100,000 copies in circulation (Leach, 2019). These large numbers of sales also led to McQuiston entering the list of New York Times Bestseller writers in June 2019, and the novel selling would surely keep increasing.

Therefore, the discussion of literature work's popularity, especially in queer books, would not be separated from how readers perspective on queer representations in the work. Through these perspectives it could be seen the response given by the reader to the novel. Furthermore, this study would discuss how readers respond to the novel Red, White & Royal Blue through reception analysis with Stuart Hall's Encoding-Decoding model.

As stated by Rahima, reception theory is concerned to reader responses that emerged after the reader interpret and judge a literary work (2017:1), The quote means that reception is a theory that not only interprets messages contained in the text, but also the audience as producers who are active in responding to the results of a mass media, such as a novel. Then, according to Hall (1980), there are three forms of meaning between the writer and the reader, and how the message is read between the two: First, dominant-hegemonic position, a code or message that is generally accepted. Second, negotiated position, a code or message conveyed by the producer, then the message would be generally accepted, but there is still a process of interpreting or selecting again for the code or role. Third, the opposite position, the meaning of the code or message that occurs when consumers understand and signify in a different way the code or pose conveyed by the producer, through the ideology and conceptual framework that has been created.

Previously, there have been several researches discussing and applying same approach to different novels. The first research is Respon Penonton terhadap Drama Serial My Lecturer My Husband Karya Gitlicious by Steanie Putri Widya, Syafrial, and Elmustian. This research focuses on audiences' response to drama My Lecturer My Husband by Gitlicious. The conclusion of this research is from 80 data that conducted by the researchers, it divided into 15 transparent, 14 referential, 23 mediation, and 28 discursive. From the four types of responses, the most dominant response obtained by the researchers through audience comments on social media Instagram is discursive, signifies the audience gets messages from the drama. The second research is Resepsi Pembaca Terhadap Cerpen Hashire Merosu Karya Dazai Osamu by Fajria Noviana. This research aims to find readers' response on Dazai Osamu's short story Hashire Merosu. Therefore, the conclusion of this research is from the 8 questions of resracher's questionnaire, there are only 2 questions that the respondents gave the same answers, meanwhile the other 6 questions were answered differently, it can be concluded even though the respondents might have different levels of interest in literature work and literary research, but they have the same level of understanding theory and simplify analytical methods of a literature work. The third research is Estetika Resepsi dalam Novel Cantik Itu Luka Karya Eka Kurniawan: Kajian Hans Robert Jauss. This research focuses on describing the response of readers and reader reception aesthetic of Cantik Itu Luka by Eka Kurniawan. Thus, the conclusion of this research is the highest criterion lies in the criteria for emotional involvement with a standard deviation of 0.999. While the very lowest criterion lies in the criteria for universality with a standard deviation of 0.685. The total standard deviation is 15.742 and the overall standard deviation is 0.787. The criteria of excitement, characteristics, character, imagination/image, believability, plot, conflict, simplicity and narrative technique are in the high categories assessed by the readers. Ironic criteria, interest, understandability, structure, style of language, new perspectives, advanced interest in moderate category. The criteria that are rated low are the main ideas/themes based on the aesthetic assessment of the reception, the previous readers (diachronic readers) and present readers (synchronous readers) were found. Therefore, the novel Cantik Itu Luka by Eka Kurniawan that readers' assessment, meaning and understanding have different responses. Based on the previous studies, beside Red, White & Royal Blue has never been studied before, especially using reception, researcher has also not found study that attempts to see how readers response in queer representation in a literary work and how it attracts readers' interest to gain its popularity. Furthermore, this research aims to (1) How the readers response to queer representation on Casey McQuiston's Red, White & Royal Blue? and (2) What aspects attract the readers that effect on Red, White & Royal Blue popularity?

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### METHOD

In order to reveal how the readers perspective on queer representation conveyed in the novel, the researcher applied qualitative method. Therefore, the primary source of this research is comments given by readers to *Red, White & Royal Blue* obtained from Goodreads, this platform was chosen by the researcher because they accommodate reviews related to a literary work directly from the readers. Furthermore, the researcher applied the theory of reception from Stuart Hall's Encoding-Decoding to find the results for three viewers' positions of decoding: the dominant-hegemonic position, the negotiated position, and the oppositional position on the queer representation portrayed in the novel.

### ANALYSIS

#### *Readers Response to Queer Representation on Red, White & Royal Blue*

*Red, White & Royal Blue* is the instance of a queer book written by a queer author, and presents the predominance of LGBTQ+ characters in the story, it indicates this novel is supposed to meet the readers' expectations towards queer representation in a literary work. There is even a movement called "Own Voices" around Young Adult readers and writers, as explained by Kheraj the concept of this movement is simple, rather than majority group authors, such as cisgender, male, straight, white, and abled to write about marginalized group, it is better if the people in the groups writing their own perspective to encourage the publication of diverse characters written by authors from the same diverse group (2018). The statement clearly states the importance for queer writers to dominate the production process of queer literary works so that the book would have appropriate perspective and representation of the LGBTQ+ community, because it is often to see if queer literary works written or produced by cisgender and straight writers would leave negative impression because the misleading images of queer and sometimes only focused on oversexualizing the queer characters. In the fact that *Red, White & Royal Blue* was written by queer writers and represents those queer characters in the story, yet the researcher still finds that the opinions on *Red, White & Royal Blue* are divided in response to queer representation, it would be discussed further in this section.

#### *a. The Dominant-Hegemonic Position*

As stated by Hall, the dominant-hegemonic position is a situation where "the viewer is operating inside the dominant code" (1999: 515). It means the readers are able to decode message as it was decoded by the procedure. In *Red, White & Royal Blue* presents the representation of LGBTQ+ as the main characters, it mostly becomes topic of discussion among readers who have their own impressions regarding how queer characters are presented and how their stories are developed. These reviews below are taken from the Goodreads page, it manifests readers' impression of queer representation that is able to see intended message by the producer.

i just read a review where someone said they didn't like this because it was too idealistic and happy. and like...honestly isn't that what the world kind of needs? this book dares to dream of an america that could have and should have been after the 2016 election. this is the kind of story this world needs more of, not less of, because it shows that this kind of love story - one where two men can fall in love and still be world leaders and changers- doesn't have to be tragic. part of what makes this book so important is that it dares to dream that dream boldly. it dares to look in the face of staunch tradition and say, "yes, you can change. and i will accept nothing less." i read this in one sitting. i meant to just start it before bed but then ended up just...not going to bed lol. it's adorable and fun and i'm very happy i picked it up.

(Goodreads, Monica Kim, May 16, 2019)

Reader on the above alludes to comments from other readers who criticize story ideas that are considered too 'idealistic' and 'happy' indicating that stories about queer couples like what happened in this novel most likely could not happen in real life, but according to the reader, this kind of story needed more to be written, because it is important to convey message that this kind of queer representation doesn't always have to end tragically. In addition of the story idea, readers are also able to reflect on how the individual representation of queer characters in this novel is presented. It can be seen in the following review.

Alex you bisexual icon. Truly an inspiration. The timing of me reading this when I was having my own bisexual panic is so comforting.

This is one of those books that leaves you hopeful while at the same time has you wishing that someone could send you love letters that represent the overarching themes of your romance. The characters are complex and vulnerable, and the world represented within is one that at times can seem removed, but all together possible. I can say, without a doubt, that this is the first contemporary romance I've read that shows all the different sides of getting to know, and ultimately falling for another person. That love is a conscious choice we make everyday in who we choose for a life partner. Casey McQuiston ties all this up in a rivals-to-lovers story between First Son Alexander Claremont-Diaz and Henry, the Prince of England. A story that encompasses personal growth, reevaluating one's initial impressions, and the legacies we leave behind. I can't even begin to thank Casey

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McQuiston for putting this story forth into the world. It has meant so much to me as a queer individual, and I know others in the lgbt+ community feel the same. A true beacon of light. Now if we could just bring letter writing back as a form of romantic correspondence that would be great.

(Goodreads, Robin, May 14, 2021)

From the reader's review above, it stated that the reader feels represented and understood by the presence of the character Alex as a bisexual character who goes through the same experience as the reader. As the same goes to what happened to Alex who should learn the fact that he is actually a bisexual and accept his sexuality, the reader feels related at a certain stage that how the representation of queer in the novel could help him to face his struggle and be the safe zone for the minority. This statement is supported by Professor Janet Alsup's writing in *The Critical Merits of Young Adult Literature*, "increasingly complex narrative depictions of emotional, social, and cognitive change in teen protagonists can help teenage readers better understand themselves in a fast, turbulent world" (2014). Therefore, this novel can be an inspiring reading and bring comfort to readers who should face the same circumstances such sexuality or gender nonconformity through the personal identity in today's queer books.

Based on the reviews discussed in this section, it can be concluded that readers who are in the dominant-hegemonic position agree that this novel succeeds in presenting queer representations by highlighting queer characters or figures that are relatable within the LGBTQ+ community.

### **b. The Negotiated Position**

Therefore, the negotiated position is a circumstance where "the negotiated version contains a mixture of adaptive and oppositional elements" (Hall, 1999: 516). Readers who are in the negotiated position have two kinds of views in addressing the queer representation shown in this novel, that consists of; there are aspects that they agree with, and at the same time there are aspects that they feel do not represent the queer community. The reviews in this analysis were chosen because they meet the criteria of readers in the negotiated position that stated the strengths and weaknesses of this novel in relation to queer representation.

Things I Liked:

The first 100-150 pages of this book were great: I honestly thought this was going to be a 5 star read. In the beginning of the novel, Alex, the protagonist, realises he's actually bisexual and not straight as he always assumed to be, despite having done things that don't really fit in with that sexual orientation (I know I'm being quite vague here, but I'm trying to keep this review as spoiler-free as possible). I have to say that I've never, never related so much to a character before. For the first time, I felt truly represented in a book and this is the main reason why it didn't get a lower rating. I'll give props to Casey McQuiston for the spot on representation.

Things I Disliked:

I've seen a lot of people say that this was a slow-burn romance, but I'll have to disagree. For me, it seemed as they got together rather quickly, even though I'm pretty sure it took a few weeks in the actual storyline.

In my opinion, the plot became very dull as their relationship seemed to just be them having sex every time they were together. Don't get me wrong, I don't mind smut, I even enjoy it most of the time, but I just got bored of them having sex every godamn time they saw each other and it was like that was all their relationship was.

(Goodreads, Susana July 6, 2019)

Susana's review clearly praised the portrayal of Alex characters as a bisexual who becomes a 'spot-on representation', the reader feels represented by the presence of his character, and feels relatable to what Alex experienced in the novel. Aside from that, this comment also criticizes the portrayal of the two main protagonists' sex intercourse scenes is presented. According to readers, sexual intercourse is brought up too often in their relationship, as if this is the main aspect of their relationship. Other comments also allude to the excessive focus on aspects of sexuality in this novel, as in the following reader's review.

It has LGTBQ + rep and lots of diversity which was explored in a fun but touching way too me. I also loved the friendship this book focuses on and that it focuses on family relationships also this book is so Smutty like wow what. I didn't expect it be too smutty.

(Goodreads, Krista April, 27 2021)

Similar to the previous review, the reader agrees with the representation of LGBTQ+ and diversity offered by this novel, yet at the same time deplore the relationship between the main characters who are described as 'too smutty'.

Then, it can be concluded that the readers who are in the negotiated position already agree with the accuracy of queer representation shown in the novel, such as stories that connect queer characters with readers' experience and reflection of

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diversity in LGBTQ+ community, yet on the other hand they also criticize how the author depicted main characters' sexual intercourse oftentimes, this aspect is considered excessive for the reader.

### c. The Oppositional Position

According to Hall the oppositional position is "the point when events which are normally signified and decoded in a negotiated way begin to be given an oppositional reading" (1999: 517). The statement can be interpreted if he categorized the readers who disagree to the idea within the novel in the oppositional position, that there is possibility for the readers to reject the idea, and decode the message in a contrary way it was encoded. Furthermore, these reviews were chosen by the researcher because they vividly show their opposition.

Felt like I was reading tumblr fanfic from 2014 written by a straight woman who thinks she knows what gay sex is. I know a lot of people liked it but I was just cringing the entire time.

(Goodreads, Ellis Hyman, February 8, 2021)

Similar to what the researchers found in the review of the negotiated position, the majority of the oppositional position also disagreed on the same thing, it is how the execution of the queer man relationship seemed bland and did not have a good chemistry depiction, as if the novel was written by a straight woman author. Ellis expressed her opinion on the representation of queer in the novel *Red, White & Royal Blue* which seems banal and shallow.

I wish m\m fiction written by gay men got as much of a push and hype as m\m fiction written by non gay men. Many times in this book it felt like all the author did was change the pronouns to make it gay. The intimacy scenes were not how men are together. I am so over m\m books written for women.

(Goodreads, Shawn, April 19, 2021)

Then, the explanation from Shawn described further about the chemistry that exists in the two main characters in the novel which seems forced. The reader expresses his opinion that the intimate scene that occurs between Alex and Henry is such a misrepresentation of queer man, from this review reader opposed the novel because it is inappropriately presenting an unrealistic queer man relationship.

Another thing that irked me was how the characters were in a constant state of...to put it lightly, horny. Like okay once or twice some sort of smut scene in a closet during a public is fine, I guess. But their relationship felt very oversexualized and it was a bit disappointing. This seems to happen to a lot of m\m relationships in media which is something that needs to be toned down.

I also thought that Alex's bisexuality was approached in a very straight way. Like it seemed to be catered less to queer readers and more to straight readers, especially with the way he talked about it as he was coming to terms with his identity. There could have been a lot to explore there but it felt a bit flat.

(Goodreads, Ariel Mehmeti, December 2, 2022)

Thus, Sabrina's review provides an instance of inappropriate queer man representation in the novel, the characters of Alex and Henry do not show their emotions like other couples who are falling in love, the relationship that exists between them seems blatantly only to satisfy lust and have sexual intercourse. It appears from the given review that this novel gives a misleading depiction of queer romance, especially for queer men couples. Then, this statement is supported by Kaur that said, "Representation is a nuanced topic, not just because diversity is difficult to depict, but also because different forms of representation can achieve very different outcomes" (2021). From the reviews, reader seems deplore about the queer depiction because there are still many aspects that can be explored in queer romance in queer books, such as the process of the characters struggle in embracing and accepting their sexuality, or realistic romance progress between two queer men, which it would differentiates them from queer books that written by straight cisgender authors.

Based on the explanation that has been presented, it can be concluded that readers in the oppositional position think that the writer has misinterpreted the representation of queer. There is a tendency that writer only highlight the intercourse between Alex and Harry, rather than focusing on building a romance story with emotion. This is considered a misleading depiction of queer, and it feels shallow.

### ***The Aspects Attract the Readers that Effect on Red, White & Royal Blue Popularity***

In this part, through reviews written by readers, researchers would look for aspects that influence the reader's attractiveness to the novel *Red, White & Royal Blue* because it affects the popularity that the novel gains. As quoted from the dictionary website, "A review is a report on a book, short story, poem, movie, play, piece of music or art, or exhibition. The purpose of a review is to introduce the reader to the piece, express the reviewer's opinion about it, and finally persuade the reader that the piece is (or is not) worth reading, seeing, or hearing" (2023). Then, the researcher would present several reviews given by readers on the novel that explain aspects related to the novel. From the aspect that is credited through the comments that the reviewers provide, we can take it as our reference for giving comments or expectations of a novel.

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### **a. *The Dominant-Hegemonic Position***

Furthermore, these reviews below were written by the readers on the dominant-hegemonic position.

I loved challenging, poignant, sincere story-telling and of course the characterization is so good than I expected. I don't know which hero I loved the most. But I think Alex stole my heart from the first pages.

Well done Casey McQuiston! The author honestly knows how to create a soul brushing, heart stealing harmony! It was fantastic debut journey! Cannot wait to read more from the author's work!

(Goodreads, Nilufer Ozmekik, June 23, 2022).

According to Ozmekik, *Red, White & Royal Blue* is an instance of a queer book that has good story telling and characterization writing. Intrinsically, Ozmekik gives a positive assessment of this novel, even though it is Casey McQuiston's debut novel, yet they are able to present queer stories the same as readers' interest

On top of that, I've never read about a main character questioning their sexuality in their 20s in a way so similar to my own experience. I will honestly admit, this had me in tears reading it, because it made me feel so seen.

Aside from this representation, this book has a lot of seemingly effortless diversity. And it's a hilarious read as well. Overall, this book had me laughing and crying and loving these characters so fucking much.

(Goodreads, Anniek, November 27, 2022)

Almost the same as what was reviewed by Ozmekik, Anniek enjoyed the characterizations in the novel, he even thought that he felt relate to one of the characters in the novel. Beside this novel presents the representation of queer that readers expect, it also raises race diversity topic in the LGBTQ+ community which is an additional point that supports *Red, White & Royal Blue*'s popularity. In addition, the storyline contained in the novel is also able to make the readers feel the emotion of the story.

Therefore, it can be concluded that readers in the dominant-hegemonic position besides savoring the queer representation in the story, they also favor the way the story is built up and the characterization built by the author. This causes the readers to feel represented by the characters, and the addition of diversity topic in the LGBTQ+ community which captivate the reader's interest more.

### **b. *The Negotiated Position***

In this section, the researcher would present a review written by the readers in the negotiated position.

To be honest, I wasn't expecting to love *Red, White & Royal Blue*. I mean, this Casey McQuiston's first book. And it's written in present tense (ugh), but love it I did. I loved it HARD.

*Red, White & Royal Blue* was everything I was looking for and more. My reading experience was simply me laughing, crying, or swooning in a continuous cycle. Sometimes all three at once. It's been a long, long time since I've wanted to melt into a puddle of goo on the floor because the romance!!! Holy god, this story was the romancey-romance of your dreams.

(Goodreads, Heather K, June 22, 2021)

As stated by Heather, she formerly felt skeptical about *Red, White & Royal Blue* because this novel is McQuiston's debut, and the writer also made grammatical mistake in writing the novel because they used present tense. However, Heather added that this novel provides a reading experience that she likes, just like what the reviewer said on the dominant-hegemonic position, she savors the storytelling and plot of this novel. Heather said that *Red, White & Royal Blue* has met the expectations of readers of romance in queer novel.

Is this worth the hype...? No. Are there better romances out there...? Definitely. Did I end up shipping Henry and Alex so hard that my heart burst...? Maybe. What I will say is that I have little to no interest in American politics, and I found the British characters to largely be caricatures of English stereotypes. But the relationship between Henry and Alex feels sweet and quite genuine, and it develops nicely. The added tension from keeping their relationship a secret also

Helped ramp up the entertainment. And the more, er, secy scenes were also pretty steamy.

In conclusion. It was alright. Could have done without all the election stuff though.

(Goodreads, Sara, June 25, 2020)

Therefore, Sara's review revealed that the romance between Alex and Harry's relationship was not fit her interests, as well as the political aspects between the US and the British in the novel were not interesting, then she highlights the stereotyping of English characterization is also an aspect that is not adored by her. Regardless of the aspects of the novel that were criticized by Sara, she considers *Red, White & Royal Blue*'s story development of Alex and Harry's relationship is good, this novel is considered entertaining for readers.

Then, it can be inferred that the readers in the negotiated position, firstly felt skeptical because the novel is McQuiston's debut, then the grammatical mistake and the political aspects between Britain and US negatively effect on readers'

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reading experience. However, the readers could still enjoy the novel because of the plot, especially the story of Alex and Harry's relationship is developed well and entertains the reader.

### c. *The Oppositional Position*

Then, the review that would be explained below is written by the reader in the oppositional position. This review explains detail aspects of the novel that readers opposed.

This book was such a disappointment for me and honestly I don't see the appeal. I felt like it was someone's political ideals disguised as a romance. I felt like this book was a bit of a "soap-box" there was so many political digs thrown at the reader. And this is a personal observation, I really don't like politics so obviously this is going to annoy me. The story follows a romance between the first son of the United States and the Prince of England. I had went into the book thinking that it would be charming and cute. I can't really say that it was either.

Nearly every person in the story is just a caricature with no character development. I had no connection to Henry (the Prince) and did not care what happened to him at all. Alex (the first son) I liked a bit more but I still couldn't care less about him either. (Goodreads, Theo M, May 14,2019)

Theo said that behind the romance between Alex and Henry which becomes the main idea of this novel, yet he found political agenda included by the author that did not necessary to be explored, Theo felt that it bothers him in relishing the story. Then, he also said that almost all of the characters in the novel have no significant development. Same as what was conveyed by some other reviews from readers that have been discussed before.

Book is too long for what it is too much politic talk and not enough romance. (Goodreads, Bookity, April 24 ,2022)

According to Bookity, who also agrees that the political aspects in the story make this novel seem tedious. She complained that the writer telling the story with immoderate number of political narrations, and forgetting that the novel is about romance.

From the explanation above, it can be inferred that the readers in the oppositional position almost the same opinion as the readers in the negotiated position on the minus aspects in this novel, they state that the political agenda in this novel is considered unimportant and causes boredom. Then, the reader feels that the characters in this novel have no significant development.

## CONCLUSION

As stated in the previous section, popular literature is literature that follows theme, the way of presenting language techniques, and general pattern that is being favored by public, then it becomes globally popular, and one of them is the representation of the LGBTQ+ community. *White Red & Royal Blue* by Casey McQuiston is one of the popular queer literary works, their debut book is success that sold up to 100,000 copies and became frequently discussed topic, in fact that this novel still creates different opinions among its readers. In general, using the concept of Encoding-Decoding by Stuart Hall, readers' responses regarding queer representation in *White Red & Royal Blue* can be divided into three groups. The first group, The Dominant Hegemonic Position feels represented by the depiction of queer representation in the main characters and side characters of this novel. The series of events experienced by the characters and how they react to it, succeeds in appealing readers' emotion, especially if they experience the same as those characters. Slightly different from the first group about the queer representation in the novel, The Negotiated Position added their disillusionment towards the main characters' relationship, it is explained that the writers oversexualized the romance, as if the novel assures with stereotypes of same-sex relationship is dominated by sexual intercourse. The last is the Oppositional Position, strongly opposes and considers *White Red & Royal Blue* do not represent LGBTQ+ community or particularly queer relationship, this novel makes impression of a fantasy that was constructed by majority group authors, who do not understand the essence of queer relationship.

*White Red & Royal Blue* mainly focuses on the relationship development of Alex and Henry, who are identified as bisexual and gay respectively. The queer representation in the two main characters also appears to be the main factor that makes this novel popular among its readers. Apart from that aspect, on the research through Hall's Encoding-Decoding, this novel has several aspects that attract readers' attention, such as the dynamics between the two main characters which are considered refreshing and entertaining, the light storyline, the characterization of the character Alex who initially has difficulty identifying his sexual orientation that considered familiar to reader's experience, and the diversity of LGBTQ+ community that appear throughout the story. In addition to the aspects that have been mentioned as the biggest attractions for readers that make this novel popular, there are also several aspects that criticized by the readers, such as the description of political activities which is considered immoderate and unnecessary. Other readers also highlighted the development of several characters who



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were considered stagnant and did not experience significant changes until the end of the story. The extrinsic aspect of this novel cannot be separated from the highlight, which can be found some readers who criticize the grammatical structure errors that cause discomfort. However, besides the flaws in the novel, yet White Red & Royal Blue's readers savor and feel represented by the presence of queer representation that attracts numerous readers that popularize the novel. Even though there are several aspects criticized by readers, but it still does not affect on the popularity of White Red & Royal Blue as a whole.

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## Tradition Values of "Posintuwu" Tradition in Uniting Local Communities in Poso Regency, Indonesia



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**ABSTRACT:** Poso regency in Indonesia is well-known as a regency with rich traditional culture. One of famous traditional culture is Posintuwu tradition which has been use a medium to unite local communities. The aim of this study is to examine the functional of Posintuwu tradition in building unity among local communities. This study used qualitative approach and the data was gathered through field observation, in-depth interviews, and written document analysis. The results of this study show that the local communities in Poso regency understand the meaning and purpose of the Posintuwu tradition, while what is posintuwu is in the form of material and non-material. Besides, there are two forms of Posintuwu applied, namely sintuwu tuwu and sintuwu mate, because the Posintuwu tradition is a social oasis. The existence of the Posintuwu tradition among the community is still very much felt and seen to be implemented, both Muslims and non-Muslims, because they are aware of the positive values contained in this tradition, and people with the majority of posintuwu do not expect rewards so it can be said that the Posintuwu tradition is social sensitivity.

**KEYWORDS:** Tradition, Posintuwu, local wisdom, unity, local communities, Poso regency

### I. INTRODUCTION

Poso is one of the areas in the province of Central Sulawesi, which has a variety of cultures or traditions that can be sure to have various kinds of differences. This impacts the assimilation of different ethnic groups living in the area. Various ethnic groups will trigger multiple problems, including cultural issues or the tradition itself. In addition, the Poso Regency area also has different kinds of religions that are adhered to by the community, where the differences in beliefs that are complied with can also be sure to have a social impact on society. Religious competition was found as one of the triggering factors for the conflict that occurred in Poso (Aspinall, 2008; Schulze, 2018).

Poso Regency also has a dynamic social plurality and an excellent social system based on its motto, "*Sintuwu Maroso*," which means united firmly. This motto is one of the guidelines for the people of Poso Regency to be able to work together in developing and maintaining the security of their area because it is impossible for an area to progress and be safe if the community does not participate, even though they have different religions, ethnicities, customs or traditions.

Tradition is a habit made by the local community to be implemented in everyday life by anyone who lives in the place or area where the tradition was born (Halimah, Hidayah, Heryani, Trihastuti, & Arpanudin, 2022; Sund, 2016). Traditions born in a community are usually motivated by the conditions or desires of the local community, which are expected to become part of the community's identity. The birth of a tradition sometimes has religious nuances, habits, or outside influences. Although sometimes the problem of the birth of a tradition is challenging to determine along with the more prominent historical nuances. Suppose referring to the understanding of tradition is the transfer or continued transmission of customs, norms, and habits from one generation to the following (Krygier, 2010). Tradition is something that is transmitted from the past to the present (Beckstein, 2017). Shows that tradition has been done by people who lived before our time and then passed on from generation to generation. So that from a historical aspect, it is difficult to determine the initial period of the birth of a tradition.

The Posintuwu tradition is also a cooperative effort of residents to help carry out an activity by the community, and the assistance is in the form of food ingredients, money, and so on. Initially, the Posintuwu community only carried out the local tradition to help people who carry out weddings. Still, over time this tradition has become widespread, such as when the community holds a Posintuwu event, it will definitely continue to be maintained because everyone who has been given a

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posintuwu must repay it at a later date to the giver (if the giver is married then it can be passed on to the giver's children, grandchildren). Even though it looks like this is an imposition at first glance, it is perfect to implement because it contains the value of *ta'awun* (help).

The practice of the Posintuwu tradition does look good and gives a positive value to life together; however, with the conflict events as described by Dave, showing the resilience and allure of the Posintuwu tradition raises questions about its role in uniting the community, even though when the community makes activities of helping behavior, cooperation and allowing which aim to establish harmonious relationships disappear. That's why the Posintuwu tradition can be assessed as not an influence to strengthen the order of living together in this multicultural society.

The Posintuwu tradition is part of the culture that grows and develops in the Poso community. Suppose it is understood the meaning of culture, which is a mirror of society and cannot be separated from the behavior of the supporting community. Attitudes and configurations that exist in the conduct of certain people can be understood by understanding the wisdom in certain areas. Therefore, understanding the culture of the various supporting communities becomes a bridge to understanding the essence of that tradition and culture.

This cultural heritage needs to be preserved and developed to remain a complete wealth for the culture of the Poso Regency (Santoso, Nurdin, & Pettalongi, 2022). The Posintuwu tradition is one of the local wisdom, which is the wealth of the Poso people. This tradition has local wisdom values, which are essential to know and apply in the daily life of society. Local wisdom has important roles and functions, including: (1) for conservation and preservation of natural resources, (2) the development of human resources, (3) the development of culture and knowledge, (4) as a source of advice/belief/literature and abstinence, (5) as a means of forming and building communal integration, (6) as a basis for ethics and morals, and (7) a political function.

Suppose local wisdom is one way of developing science and culture. In that case, tradition and culture cannot be separated from education. The posintuwu tradition needs to be studied so that its values can be known and implemented. This study, therefore, focus on understanding the values of Posintuwu tradition in uniting local communities. The results of this study might sight light on how a local wisdom can used to unite a hetoregen communities.

## II. LITERATURE REVIEW

### A. Traditional Values

Above has been explained the meaning of tradition, namely the action and behavior of a group of people in the form of an object or behavior as an element of culture which is poured through thoughts and imagination and passed on from one generation to the next, which contains norms, values, hopes, and ideals without any time limit. Hence the traditional concept was born.

Traditional is a mental attitude in responding to various problems in society (Monteiro & Balogun, 2014). It contains a methodology or way of thinking and acting that always adheres to or is guided by the values and norms that apply in the community. Every action in solving problems is based on tradition. Someone will feel confident that an action is right and good if he acts or makes decisions following the values and norms that apply. Conversely, he will think that his actions are wrong or will not be appreciated by society if he acts outside the traditions or customs of his community. In addition, based on experience or habits, he will know exactly what is profitable and what is not.

Traditional attitudes are the most essential part of the system of transformation of cultural values. Tradition means the habit of living from generation to generation, which characterizes the uniqueness of a society from one society to another. Traditional values, in general, include a) the establishment of close bonds of feelings in the form of affection, loyalty, and intimacy in social interactions, which are manifested in the form of helping each other without particular strings attached; b) there is a collective orientation (collectivity), so there are rarely differences of opinion.

The types of values contained in tradition, if you follow the traditions of each community group, there will be diversity because the background of the emergence or birth of a tradition is different. However, referring to the global values of tradition, we can describe some of the general values that exist in tradition. Value can be a measure of the quality of something against everything. Something is considered valuable if something is intrinsically of grade or quality.

Value is also a belief or identity in general, the elaboration of which is in the form of formulas, rules, or provisions for its implementation, called norms. So norms are the values of tradition whose development is in the form of rules or guidelines for social life. In the Dictionary of Sociology and Related Sciences, as quoted by Kaelan, it was found that value is the ability believed to exist in an object to satisfy humans—the nature of a thing that causes interest in a person or group. So the value is essentially the nature or quality attached to an object, not the object itself. So that value is a reality "hidden" behind other facts.

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Islam considers that tradition can be used as a source of interaction. This means that its existence is recognized and accepted as long as it does not violate and conflict with the values of Islamic teachings. There are many kinds of traditions or customs; some relate to mu'amalat, or other societal aspects. Tradition or custom at the beginning of the development of humankind became the basis for all aspects of people's life, so it is a principle in matters of religion, mu'amalah, and morals.

Traditional values in Islam are inclusive, following the breadth of Islamic religious teaching material (Makmur, Nurdin, & Pettalongi, 2022). The scope of teaching material is still carried out by kaffah. Therefore, the understanding of the values or elements contained in the Islamic religion, which in this dissertation study relates to Islamic education, its followers are a form of manifestation of the ideals of Islamic life to preserve, transfer and transform Islamic values to the personal successor (Santoso et al., 2022). Thus, a Muslim's personality must contain values based on or inspired by faith and piety to Allah SWT as an absolute source that must be obeyed. Obedience to the absolute power of Allah SWT implies total submission to Him. If humans have entirely devoted themselves to Allah, it means that they are already in the dimension of life that can prosper life in this world and life in the hereafter (Pratama, Pettalongi, & Nurdin, 2022).

Traditional values can be seen from several perspectives: the source aspect and, as previously explained, the orientation aspect. Values in terms of their sources can be classified into two types: 1) Divine values based on the Qur'an and hadith. This value in the study of theology will never experience change and does not tend to change or follow the tastes of human desires because the primary source is directly to Allah SWT; 2) Insaniyah values, values that grow and develop based on human agreement, so that they will continue to develop in a more advanced and higher direction. The basis and principle of its birth come from ra'yu, customs, and natural facts.

While the value, when viewed from its orientation, can be categorized into four forms, namely: 1) Ethical values; ethical value is the value that underlies its orientation on good and bad measures; 2) Pragmatic Value; pragmatic value is the value that underlies its orientation on success or failure; 3) Sensory effect value: sensory effect value is the value that underlies its orientation on things that are pleasant or sad; 4) Religious values: religious values are values that underlie their orientation to sin and reward, halal and haram.

Various viewpoints for classifying traditional values, it can be concluded that traditional values have two parts: a) Formal values, values that have no form but have shapes, signs, and symbols. This value is divided into two kinds: self-value and derived value; b) Material values: tangible values in the reality of spiritual and physical experiences. This value is also divided into two kinds, namely: spiritual values consisting of logical values, aesthetic values, ethical values, and religious values, the second is physical values consisting of use values, life values, and ni'mat values.

### **B. Symbols of Unifying Society**

The symbols that can be used as a unifying symbol of society include:

#### a. Religion

In the Big Indonesian Dictionary, religion is a system or principle of belief in God, or it is also called a god or another name with the teachings of devotion and obligations related to that belief. Religion has many definitions or meanings from various religious figures and practitioners. From here, we will describe religion according to language and then terms. Religion in language: 1. Religion comes from Sanskrit, defined by directions, rules, ways, or worship of God. 2. Religion consists of two words: "A" means not, and "Gama" means chaotic and disorderly. Meanwhile, according to the terms, religion is a teaching or system that regulates the system of faith (belief) of worship to God Almighty and the rules relating to human interaction with humans and their environment. Religion as symbol systems, beliefs, values, and symbolized behavior all centered on the most meaningful issues.

Religion is a system of belief in God that a group of people embraces by continuously interacting with Him. The main issue discussed in religion is the existence of God. God and human relationship with Him is an aspect of metaphysics, while humans as creatures and part of natural objects are included in the physics category (Mashuri, Pettalongi, Nurdin, Paozia, & Yusran, 2022). Thus, philosophy discusses religion in terms of metaphysics and physics. However, the emphasis on examining the philosophy of religion is more focused on its metaphysical aspects than its physical aspects. The physical element will be more clearly explained in the natural sciences, such as biology, psychology, and anthropology.

#### b. Pancasila

Etymologically the term "Pancasila" comes from Sanskrit. According to Muhammad Yamin, in Sanskrit, Pancasila has two kinds of meanings lexically, namely: panca means "five," short syila vowel i means "stone joints," syiila long vowel i means "rules of good behavior, which are important or indecent." Etymologically, Pancasila comes from Sanskrit, which means Pancasila means five, and sila means the foundation stone, base, and foundation. Pancasila has the meaning of five principles, while the precepts

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themselves are often interpreted as conformity or rules of good behavior. Nature exists in a person or something that must exist within oneself.

These words are then absorbed into the Indonesian language, namely "Susila," which is related to morality. Because this is etymologically interpreted as "Panca Syila," which means five joints or "a foundation that has five elements." Based on the explanation above, etymologically, Pancasila can be interpreted as the basis/foundation of life, which amounts to five elements or has five parts, namely the one and only God, just and civilized humanity, Indonesian unity, democracy led by wisdom in representative deliberations and justice for all Indonesian people.

### c. Culture

Tradition in Latin is *traditio*, which means forwarded in language, is a habit that develops in society into customs assimilated with traditional and religious rituals. According to the Indonesian Dictionary, tradition is a custom passed down from generation to generation (from ancestors) still carried out in society. Tradition in Arabic is called *'urf*, which means a provision regarding how people have been accustomed to a specific place and time, for which there is no explicit provision in the Qur'an and Sunnah. Etymologically, tradition means something (such as customs, beliefs, habits, teachings, and so on) that has been passed down from our ancestors.

According to Mohammad Nur Hakim, tradition is everything attached to life in a society carried out continuously, such as customs, culture, habits, and beliefs. Meanwhile, according to Hasan Hanafi, Tradition is all past heritage that enters us and enters the culture currently in effect. Thus, for Hanafi, tradition is not only a matter of historical heritage but also a matter of present-day contributions at various levels.

Tradition is everything channeled or inherited from the past to the present. In a narrower sense, tradition only means those parts of the particular social heritage that meet the requirements, that is, those that survive in the present. Traditions are shared material objects and ideas that come from the past but are still there today and have yet to be destroyed. Tradition can be interpreted as a true heritage or heritage from the past. However, repeated traditions are not carried out by chance or on purpose.

## III. METHODOLOGY

This study uses a qualitative method (Nurdin, Stockdale, & Scheepers, 2013) to investigate the values of Islamic education in Sintuwu Maroso culture in Poso regency Indonesia (Achdiyaradzan, Nurdin, & Alhabsyi, 2022; Makmur et al., 2022; Santoso et al., 2022) Data were collected through direct observation in the case field and in-depth interviews with selected local citizens, local figures, and leaders (Jumahir, Nurdin, & Syahid, 2022; Mashuri et al., 2022). Written materials were also analyzed to understand the Islamic education values within Sintuwu Maroso culture context. Data analysis consists of several procedures, which include reduction and verification techniques with various data sources (Zaid, Pettalongi, & Nurdin, 2022). The reduced data is then analyzed, reflecting on the theoretical concepts used in this study. Finally, the results were presented based on thematic issues found in the data (Nurdin & Pettalongi, 2022; Nurdin, Scheepers, & Stockdale, 2022), which show the study's insight relating to the revelation the values of Posintuwu tradition within Poso regency context.

## IV. RESULTS AND DISCUSSION

### A. Posintuwu Means Togetherness

The meaning of *Posintuwu* is jointly carrying out activities so that these activities can be carried out properly according to mutual expectations. *Posintuwu* is also interpreted as a community habit in carrying out activities with both joy and sorrow; even *Posintuwu* can be interpreted as a donation given to brothers and sisters in need both Muslims and those who are not Muslim, one example is if neighbors in village A carry out an activity or a pilgrimage, then neighbors around the house, or those in the village sometimes even from neighboring towns come to help, especially if there is a wedding party, circumcision, aqiqah, thanksgiving for hajj, mauled and isra' Mi'raj. Likewise, if one of our relatives is grieving, other neighbors spontaneously come with whatever they have to help the grieving relative. This means that the Poso people in Poso Regency understand the meaning and benefits of the *Posintuwu* tradition.

The form of Posintuwu contribution varies according to what people have. It can be in the form of logistical goods it can also be in the form of direct money, it can also just be energy or thoughts because the Posintuwu form is only sometimes in the form of material (Haryanto, Nurdin, & Ubadah, 2022). As I said earlier, at that time, we did not exist. Still, it is our habit to come to help even though there is no material while there is work that I can help with Posintuwu. Still, because we intend to help so, we come to that place to help do some work both in the form of energy and thought, especially if the neighbors who make the celebration are sure to understand our situation, so we just come to help, what can we help our relatives who have a hajat. The point is that in carrying out Posintuwu, it needs to be determined what can be in Posintuwukan or what kind of assistance can

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be given to our brothers and sisters. It is permissible as long as it is valuable or helpful in carrying out activities that will be carried out by those who wish joy and sorrow. The whole community understands this tradition because they can apply it.

The Posintuwu tradition has the meaning of togetherness in various positive ways, meaning that the people of Poso Regency, in every implementation of activities, are always together and always help one another because the Posintuwu tradition has become a habit of the people of Poso Regency and has positive values in living life in this world because this tradition leads people to understand each other's circumstances so that later people can help each other in various aspects of life without choosing and looking at ethnicity, religion, and race. But more on how people can become agents of social change. This way, all people will benefit each other. Apart from that, Posintuwu communities are different according to the circumstances and abilities of each. One informant said the following:

*In my opinion, Posintuwu is togetherness; for example, several people go to a meeting. During the meeting, several things will be given to both Muslim and non-Muslims, brothers and sisters in need, such as if one of our relatives is going to have a wedding, circumcision, or birthday party. , then the existing neighbors gather at the house that will carry out the hajat or at a predetermined place to discuss the needs that must be prepared in facing and carrying out the event. In addition, if one of our relatives is grieving, other neighbors gather at a particular place to discuss anything that can help grieving relatives. They can also spontaneously come up with whatever they have to help grieving relatives, two words, Mosintuwu and Posintuwu, cannot be separated, and this is what the people of Poso Regency have been applying. This ensures that the people of Poso Regency understand the meaning of the posintuwu tradition.*

The community interprets Posintuwu as being together; for example, the community goes to a meeting at the house of the person having the hajat, there they discuss something that is needed by the person having the hajat, for example, there are neighbors who are going to carry out a wedding party, the neighbors around it even have people from outside the village gather at home who will carry out the hajat and discuss the needs that must be prepared in the implementation of the party that our relatives will hold. Likewise, if one of our relatives is grieving, other neighbors gather at a particular place to discuss what can be given to those who are grieving. They can also come spontaneously with whatever they have to help grieving people.

A Posintuwu contribution from that person is only sometimes in the form of logistical goods. There is no material while there is work that people can help with Posintuwu, not later with goods if at that time we are empty. Still, because we intend to help, we come to that place to help do some work both in the form of energy and mind, especially if the neighbors who make the celebration must understand our situation, so we just come to help. What can we help our relatives who have the hajat indicates that the community understands this tradition because they can apply it.

### **C. Local Communities Understanding Towards Posintuwu Culture**

The people of the Poso Regency understand and even practice the *Posintuwu* tradition, which is a form of *Kasintuwu* in their dictionary. At the same time, *Mosintuwu* is an object or material in *Posintuwukan*. The community has carried out the history of the *Posintuwu* tradition, especially the indigenous people who are called the *Pamona* tribe since the *Pamona* tribe has lived in the Poso Regency area, the Pamona brothers, so this culture or tradition has existed since ancient times and currently, this tradition is applied by all levels of society regardless of their status, religion, and culture, so Posintuwu is generally performed on *Sintuwu Mate* and *Sintuwu Tuwu*, like if you have a relative who conducts a wedding ceremony, circumcision, or birthday, that's *Sintuwu Tuwu*. Or if there are people who are grieving without being notified, they will definitely come. Both those with strong and weak economies, especially if they live close by, will participate in the mourning activities if *Sintuwu Tuwu* is the same as them giving something. This is also an activity based on the philosophy of the Pamona people, that is, *Sintuwu Maroso*, the implementation of which is *Posintuwu* in terms of sorrow and *Posintuwu* in terms of joy, such as *Sintuwu Maroso*.

The entire community of Poso Regency understands the Posintuwu tradition, meaning that the people of Poso Regency in every activity are always together and always help one another regardless of ethnicity, religion, and class, because the Posintuwu tradition has become a habit of the people of Poso Regency and has positive values in living life in this world so that people can help each other in various aspects of life so that all people will mutually benefit each other.

The people of Poso Regency understand the meaning of Posintuwu to practice the Posintuwu tradition. Posintuwu is an object or material given to those in need. Indigenous people have carried out the Posintuwu tradition called the Pamona tribe since the Pamona tribe settled in the Pamona Brothers section of the Poso Regency, so this tradition has existed before. Now this tradition is applied by all levels of society regardless of status, religion, and culture, so Posintuwu is generally held at *Sintuwu Mate* and *Sintuwu Tuwu*, like having a relative having a wedding celebration. Or if people are grieving without being notified, they will come. Both those with strong and weak economies, especially if they live close by, will participate in the mourning activities of *Sintuwu Tuwu* the same as them giving something.

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Based on this, it can be understood that all the people of the Poso Regency understand the Posintuwu tradition, meaning that the people of the Poso Regency are always together in activities and always help each other regardless of ethnicity, religion, and class. Regarding the community's understanding of the *Posintuwu* tradition, the whole community, immigrants and locals, understand and even practice the Posintuwu tradition, which in their dictionary language is a form of *Kasintuwu*. At the same time, *Mosintuwu* is an object or material in *Posintuwu*.

### V. CONCLUSION

The people of Poso Regency, both the Pamona and non-Pamona tribes, understand the meaning and purpose of the Posintuwu tradition, while what is *posintuwu* is in the form of material and non-material. Besides, there are two forms of *Posintuwu* applied, namely *sintuwu tuwu* and *sintuwu mate*, because the *Posintuwu* tradition is a social oasis. The existence of the Posintuwu tradition among the community is still very much felt and seen to be implemented, both Muslims and non-Muslims, because they are aware of the positive values contained in this tradition, and people with the majority of *posintuwu* do not expect rewards so it can be said that the Posintuwu tradition is social sensitivity.

Islam views Posintuwu is an Islamic tradition because Posintuwu and Islamic teachings are not contradictory but complement and strengthen each other. In addition, there are many instructions in the Qur'an and Hadith about the importance of having Posintuwu among people, so it can be said that this tradition is social piety and the Islamic social system. In addition, these traditions are the grace of life, roots of life, life program, the vessel of livelihood, source of happiness, glasses of life, the principle of life, the field of joy, social magnet, life energy, social bond, and souvenirs are objects that are considered as symbols of memories of events and events that have been experienced. Conjunctions are words or expressions connecting words and phrases between clauses and sentences.

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## Relationship Servant Leadership Based on Matthew 20:26-28 and Enthusiasm to Serve with Faith Growth of Online Worship Congregation at the Prayer Towers of All Nations Ministry



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**ABSTRACT:** The Research aims to determine the relationship between servant leadership Mat. 20:26-28, and the spirit of service with the growth of faith in the online worship All Nations Prayer Tower Jakarta. Leaders who have the heart of a servant are a must and absolute when carrying out activities for the benefit of the people and the spirit of service will greatly support church leadership to reach congregations for online worship so that they play a greater role in creating faith growth and maintaining Christianity in the church. Research method used is descriptive quantitative with correlational techniques. The results of the study show a very strong one-way correlation of 0.903 between servant leadership and faith growth in online congregations. Enthusiasm to serve has a correlation of 0.771 with the growth of faith in online worship congregations. Even when these two variables are combined, there is a stronger one-way correlation of 0.905 for the spiritual development of the Jakarta All Nations Prayer Tower online congregation. The conclusion from the research is that servant leadership and service spirit are closely related and specifically needed for the growth of the faith of the Jakarta All Nations Prayer Tower Online Congregation, especially in their enthusiasm for carrying out their daily lives. Online worship. This means that church leaders must be able to have the heart of a servant for the benefit of the people in advancing the spiritual development of the congregation for online worship, the Jakarta All Nations Prayer Tower.

**KEYWORDS:** Servant Leadership, Enthusiasm to Serve, Faith Growth, Gospel of Matthew 20

### INTRODUCTION

It is interesting to examine the faith gains of the churches during the coronavirus pandemic as the Church of God has had to move from face-to-face meetings to virtual worship meetings for the first time in history. This, of course, affects the spiritual growth of the church, which directly affects the growth of the church's faith. Especially for prayer tower congregations of all nations, whose numbers have skyrocketed during the corona virus pandemic and many congregations have been forced to switch to virtual congregations. In this case, religious people, especially Christians, can freely choose any church that also switches to virtual worship.

Many churches have now switched to virtual services, which also allows congregations to select or even attend multiple virtual services from multiple churches at the same time. After the post-coronavirus pandemic, congregations can resume worship as normal without reducing online worship. Hope from the growth of faith so that the church will bear spiritual fruit, read the Word consistently, bear witness, bring forth new souls, pray for the sick with love and patience. God for their participation in prayer tower activities and every church in ministry is expected to share in leading prayer tower activities for all nations to become doers of the Word, to increase in faith growth and witness many people.

Servant leadership puts the leader in the role of servant and uses the principle of compassion to focus on the needs of followers and empower them to become more self-reliant, knowledgeable, and helpful. Serving or serving leadership is serving leadership (Paulus, 2021). Not being a ruler, but willing to be a doormat (trampled) to take those around him to a higher stage in his life journey with God (to ministry). In this world, those who rule and wield power are considered great. Jesus said that greatness in the kingdom of God is not measured by dominion over other people, but by sincere service (Bilo, 2002). Servant Leadership emphasizes that leaders must listen to the needs of their followers, empower them, and help them reach their full potential. Servant leadership makes a conscious decision to serve first in order to put the interests of the followers ahead of the leader. Starting from many examples of Christian leadership, such as the leadership of Moses, the leadership of Joshua, and the leadership

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of David, so that the current concept of understanding can be applicable to examples of leadership that are consistent with the truth of God's word to mankind stand. Although Jesus is God, he is a true leader who does not teach his students, especially believers in general, in an authoritarian way. The serving heart forms the basis for the concept of authentic Christian leadership through the process of behavior formation (Zaluchu, 2011). What is worse is the fact that some administrators and communities in the ministry are not competent and have not shown good character in the ministry. This becomes particularly clear in the reality of his life, in the differences that everyone emphasizes, feels more important than the other and has more qualified talents. Every service plan shows that in reality it is often chosen in such a way that disputes and conflicts of interest often arise and ultimately hinder the preparation for online worship.

The Spirit of Worship refers to how well prepared the congregation in ministry is for worship. This, of course, shows how the parish sees itself and God as worship. How important it is in the spiritual life of a church to worship God with longing and joy and to be willing to meet other people even if you are not late. Therefore, all church workers must be included in the daily online worship service.

As the world changes with the development of digital technology, the church needs to change its worship model and shift to online worship. Congregational enthusiasm for virtual worship can also reach everyone without being limited to specific areas. Evangelism can be conducted virtually, as can other worship services that require prayer preparation prior to daily online worship activities. The researcher notes that not all of them attend or participate in worship every day, so virtual worship should not make the congregation any less enthusiastic, since the worship serves as a tribute or strengthens fellowship with God, but in fact there are congregations that are less committed to worship service.

Another reality is that not all pastoral care administrators can keep up, making the All Nations Prayer Tower Ministry congregation less enthusiastic about attending virtual worship services. The busy activities of the congregation has caused some congregations to forget to attend virtual worship services, which are actually accessible in all areas and without time limits. Fourth, the majority of the congregation participating in the virtual service consists of spectators, which turns out to be non-participative (celebratory and respectful). Fifth, the congregation participating in virtual worship is not focused or lacks concentration because they are simultaneously engaged in other activities while participating in virtual worship (dual or dual devices).

Based on the description and information above, the researchers framed the problem in this study as follows: Is there a correlation between servant leadership based on Matthew 20:26-28 and the growth of faith in the online worship church in the All Nations Prayer Tower? , Ministry of Jakarta? Is there a correlation between the enthusiasm of service and the growth in faith of the online worship congregation at All Nations Prayer Tower, Ministry of Jakarta? At the same time, is there a connection between ministerial leadership based on Matthew 20:26-28 and the excitement of ministering with the faith growth of the online worship congregation in the Jakarta Ministry of All Nations Prayer Tower? The current research aims to determine the relationship between servant leadership based on Matthew 20:26-28 and growth of faith in All Nations Prayer Tower, Ministry of Jakarta to determine the relationship between enthusiasm for service and the To determine faith growth in the online worship community at All Nations Prayer Tower, Ministry of Jakarta, and to explore the relationship between ministerial leadership based on Matthew 20:26-28 and enthusiasm for service concurrent with the faith growth of the Congregation for Online Worship in All Nations Prayer Tower to determine Ministry of Jakarta.

Several previous studies, such as a research conducted by Tri Subekti entitled "The Role of the Pastor as a Teacher in Congregational Faith Growth" in 2021. The similarity of previous research lies in the Faith Growth (Y) variable used. The difference is that the X1 variable was chosen by the researcher, namely Servant Leadership, and in previous research only 1 Research conducted by Paulus Kunto Baskoro was entitled A Theological Review of Servant-Hearted Leadership for the Formation of Congregational Characters". The similarity to previous research lies in the variable used, Servant-Hearted Leadership (X1). The difference lies in the variables Y and X2 chosen by the researcher, namely growth in faith and enthusiasm for service. In previous research, only one variable was used by Adelius Waruwu, Junior Natan Silalahi, Haposan Siahaan, Abraham Johannis entitled Correlation of Expository Sermons and Congregational Enthusiasm in Worship at GBI Mawar Sharon Cileungsi in 2020. The similarities of previous studies lie in the enthusiastic Variable serving the community (X2). . The difference is that the belief growth variable becomes the Y variable for researchers, and previous research uses X1 and Y variables that are different from the researchers.

### **METHODS**

This research was conducted at the All Nations Prayer Tower of the Jakarta Ministry of Online Worship Congregations. Researchers will conduct this research for six months beginning January 2023 to June 2023. The research methodology used in this research is descriptive quantitative with correlation techniques. According to Ariknt, the correlation method is a form of research that aims

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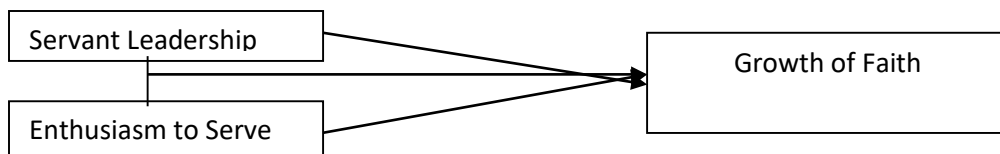
to determine whether there is an association between two or more variables (Arikunto, 2010). This study has two independent variables and one dependent variable, namely: servant leadership, enthusiasm for service, and the growth of the church's faith. The All Nations Prayer Tower, Ministry of Jakarta online worship community, including its staff, is the current research population. The population with church criteria including active online workers who are present every day is 52 people. The population is known to be 52 people. So the sample size used is:

$$n = \frac{52}{1+(52 \times (0.05)^2)}$$

n = 46,02 people rounded up to 46 people.

The population reachable by the researchers is 46 people, so the total population is used as the number of samples. The researchers assume an error rate of 0.5%. Data collection in questionnaires on ministerial leadership, enthusiasm for service and faith growth in the church with criteria present and active in online worship every day.

Model Research:



Information:

Y = Growth of Faith

X1 = Servant Leadership

X2 = Enthusiasm to Serve

## RESULT

### Exegesis of Matthew 20: 26-28

#### Background and purpose of writing

The book of Matthew can certainly provide answers to questions that Jewish believers ask themselves. Matthew's scriptures are aimed at believers who have descended from Judaism, with the theme of Jesus, the Messianic King. Some of the reasons why this book was written for the Jews are as follows: 1) Writing the title Jesus son of David several times as in Matthew 1:1, Matthew 9:27 and Matthew 12:23, 2) Describes the descent from Jesus from Abraham to Matthew 1:1-17, 3) Evidence of the Messiahship of Jesus long awaited by the Jews based on statements, promises and prophecies in the Old Testament. 4) Use of the term Kingdom of Heaven/God as a Jewish attribute is used multiple times.

The teachings or commandments of the Lord Jesus that explain that the gospel is for everyone (Matt 2:1-12 and Matt 13:38) were written for Jewish believers, but there are also verses that explain the universality of the gospel. So the format of the writing is why the book of Matthew is intended for Jewish believers. Thus the Lord Jesus revealed himself and the purpose of his coming and caused the disciples to follow what he was doing. Therefore, from the discussion above, it can be concluded that there is a connection between the subject of the powertrain and the term. According to Matthew 20:26-28, the attitude of a servant of God is that of a spiritual leader and not that of a government or official ruling with an iron fist and dictatorial power, ready to serve and sacrifice.

#### Interpretation of the Verse Matthew 20:26-28

Peniel Maiaweng said the story in Matthew 20:26-28 begins with the background of the students arguing about who is the eldest (Maiaweng, 2017). The conflict revolves around who has the right to be the highest human being in the world, particularly in the system of government. Their battle began with the mother's desire of John and James, and then when they were already in heaven, Jesus was willing to place them on either side of Him (verse 21). This request goes without saying. For it is consistent with Jesus' promise that whoever believes in the Son will believe in the Father, and whoever abides in the Son will abide in the Father. When the son went to the father's house, all the believers went and lived there (John. 14:1-14).

Jesus revealed that Asi Vasudeva Reddy and others believed that a leader's greatness did not lie in his power or position, which is explained by his understanding of standing to the left and right of the king, but in his humility in the world during his ministry (Kamesh, 2016). Regarding world leadership (v. 25). Jesus said that world leadership operates under an iron fist system in which rulers use their power to govern those they control. So this is in stark contrast to servant leadership, where a ruler's goal is not to rule over those he governs, but to serve all he commands. This is the fundamental difference between mastery and service. Matthew 20:26-28, Jesus the supreme leader is a servant. Something that satisfies the needs of someone in need. One who

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sacrifices his wealth or interests for the benefit of others is concerned for the welfare of others without regard to his own welfare. Maiaweng said that a good person is a servant, someone who refrains from serving others, has no authority over himself, obeys, follows rules and wants to be obeyed (Maiaweng, 2017). Servant leaders are people who forget their own interests and live for the good of others (Nuhamara, 2017). Servant leaders are essentially pragmatic global leaders. Thus, the form of leadership that Jesus developed was based on his life as a servant and minister (Tomatala, 2010).

### **Expert Views on Faith Growth**

According to Gilbert Lumoindong, faith growth occurs when a person relies on God in their life through reading and studying God's Word. By believing in God, Christians can enjoy extraordinary powers in their daily lives, such as praying always, thanking and worshipping God, winning souls, and changing behavior (Lumoindong, 2016).

According to John Arnott, faith growth occurs when a person has applied God's word in their life, believes God's word in the future, quietly reads and meditates, believes in God and follows God's teachings, and Christians bring goodness, mercy, and obedience to others, and blessings are brought into him follow his life wherever he goes e.g. B. giving thanks, praying and worshipping God, witnessing and changing behavior, and as the basis of the Christian life (Arnott, 2019). God's Word is a guide to doing things that please God. Christians can be assured that God's Word is truly authentic and that what it says applies to all believers.

Ronald Leigh said a believer must obey the Word of God and engage in other spiritual activities, praying, thanking and always worshipping God so that he can witness to many people and experience changes in behavior so that growth can come in different ways but in all species show the same basic attitude. from a believer. This means that he must obey God and apply God's word in his life (Leigh, 2007). The core of the three expert opinions and general facts about faith growth relate to principles such as studying the Word of God through knowing God, living a prayer life, giving thanks and worshipping God, and behavior changes and testimonies intended to serve as indicators of faith growth.

### **Faith Growth in the Old Testament**

In Hebrews 11:17-18, the Bible says that Abraham, like Christians today, experienced many conflicts of faith. But look at one. It is about the long interval between Abraham's acceptance of God's promise and the fulfillment of that promise with the birth of Isaac. On this long journey of faith, Abraham experienced many ups and downs, which is one of the reasons Abraham is called the father of believers. Abraham's exceptional form of faith enabled him through his faith to be loyal and obedient to God and to believe that all of God's plans were for his good.

In another story at Daniel 6:6-13, Daniel is an example of a godly man. God's Word says that Daniel knelt and prayed three times a day to praise God. In fact, Daniel's life has not been smooth sailing. Daniel's faith is tested. His faith and belief in God were used as a pretext by some wicked people to accuse Daniel of violating the laws of the kingdom. Officials and rulers tried to overthrow Daniel. Tempted by the king, he issues an arrest warrant for Daniel. In order to defend his faith, the innocent Daniel must face wild lions. God protected Daniel by covering the lion's mouth from his face. Because Christians believe that God will protect Christians even in difficult times.

### **Faith Growth in the New Testament**

The story of Stephen in Acts 6:5-7 showed that a believer who is so passionate about God's work still has a very unkind experience. Not only was Stephen rejected, he became the subject of lies from those who disliked him. In fact, the slander that Stephen was accused of was crucial as it relates to the existence of the Temple, the image of Moses and God. Stephen's story proves that the level of faith, determination, and seriousness that goes into God's work is not a ticket to escape from all of life's challenges and struggles. In fact, it is the intimacy of the relationship that people form with God that allows them to continue to overcome these various inconveniences and difficulties. That is, it is really not right for a believer in God to take a selfish attitude when he believes in Him because he wants to be freed from life's troubles.

Hebrews 11:1 says, "Faith is the substance of things hoped for, the evidence of things not seen." Faith contains both divine and human elements. Faith is a human act and a gift from God. The foundation of faith is the Word of God (Rom. 4:20-21). In Daniel Nuhamara and Thomas H. Groom argue that Christianity as a practical experience has three fundamental aspects (Groome, 2010):

- 1) Confidence / loyalty;
- 2) Confidence;
- 3) A life lived with love.

The essence of the New Testament regarding faith growth relates to such principles as: studying the Word of God through knowing God, living a life of prayer, thanking and worshipping God, and changing behavior and testimony as indicators of faith growth.

### **Expert Opinions on Servant Leadership**

According to Robert Borrong, in the context of Christian leadership, a servant leader is a shepherd and servant. These two words are the key to understanding the mystery of Christian leadership. Borrong says: In the Bible, humility is the ideal of servant

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leadership and the judgment of servant leadership (Borrong, 2003). In the midst of developing leadership theory, Robert Greenleaf proposed the idea of a servant being a leader around 1970. According to Greenleaf, his book on servant leadership is written with the hope and intent that leaders will learn to serve others or followers with understanding, skill, and passion. Greenleaf formulated the concept of servant leadership as a person who is a servant first and has a humble attitude towards service. But more consciously driven to lead by putting the needs of others or followers first and helping followers achieve common goals (Greenleaf, 1998). In summary, the movement is not from leading to serving, but from serving to leading (Crowther, 2011).

LC Spears explained that there are ten characteristics of servant leadership that can be identified. The ten characteristics include: humble listening, self-sacrifice for others, the concept of serving as a shepherd or servant, healing ministries, awareness and belief, conceptualization and foresight, responsibility and commitment to human growth. These ten concepts were discovered after a research process and developed to be used with good progress as part of servant leadership. This model can be applied as a form of effective leadership (Spears, 2016). The core of the three expert opinions and the general nature of servant leadership relate to principles such as having a servant heart, focusing on sacrifice for the benefit of others, and exhibiting humble behavior that can serve as indicators of servant leadership.

### **Servant Leadership in the Old Testament**

The example in Genesis 39 tells of a leader who worked hard and had a servant's heart, namely Joseph, wherever Joseph was placed, whether in Potiphar's house, in prison or in the palace, Joseph always worked hard and worked for the benefit of others. The results of his work Joseph was able to save a nation of Israel. Joshua is God's servant (Josh. 24:29). The word servant in this text is used the word "ebeth" and this word in the Old Testament is used 750 times in the sense of the lowest servant, slave, servants who help. The word "ebeth" is used as the title of the Messiah in the book of Isaiah 49:1-7, where the Messiah is willing in His suffering.

Another story is recorded in Exodus 18:19 where humble leadership was found in Moses. This was evident when Moses' in-laws visited him. Jethro gave advice to Moses, the great leader of the Israelites: a great leader, appointed by God himself, who is willing to listen to the advice of others, is a humble man who is ready to accept suggestions and criticism from others to accept.

Lot should have given Abraham a choice. Because Abraham had no right to. But out of love for wealth, he violated his uncle's rights without feeling guilty. Because of the money Lot chose, he had to lose his children and grandchildren. The essence of the Old Testament about servant leadership relates to such principles as: the heart of a servant, a focus on sacrifice for the sake of others, and humble behavior, which serve as indicators of servant leadership.

### **Servant leadership in the New Testament**

John 13:120 places great emphasis on humility as one of the qualities that people, including leaders, should have, which is indeed found when Jesus washed the disciples' feet. As a teacher, Jesus did not ask his disciples to wash his feet. This message is contained in the Gospel of John about the meaning of the event when Jesus washed the feet of the disciples, starting with love, followed by humble service, teaching and example, full of the power of liberation and resurrection and sacrifice/death. This is voluntary will. The cross has always been the "highest" standard of Christian leadership, no matter when or where. Study the pattern of Christian leadership in John 13:1-20 from Jesus. Jesus clearly taught that the Christian understanding of leadership is the opposite of what world leaders usually understand.

The Lord Jesus, while on earth, taught the concept of leadership more clearly than ever before. The serving leadership model as the most perfect model of all time. The main concept that God teaches is the attitude of serving from a leader. Leaders are people who have initiative and influence. Leighton Ford understands that leaders need to lead and that more people need to follow. This shows that leaders are very critical in setting policies that affect the development of society as a whole. Allen B. Graves said, as Layton Ford said, the church can be systematically defined as having members, leaders, and relationships within the church. It states that church leaders need to be recognized by their confidence in their behavior and that they need to be well connected and trust everyone when it comes to leadership (Graves, 2017). The essence of the New Testament regarding servant leadership relates to such principles as: the heart of a servant, a focus on sacrifice for the sake of others, and humble behavior, which are meant to serve as indicators of servant leadership.

### **Expert Opinions on Enthusiasm for Service Christian**

Schwartz explains that a passionate spiritual desire is an important pillar of church growth. The thirst for spirituality is reflected in the attitude of people who are constantly seeking God, making sacrifices for spiritual things, and longing for fellowship with God (Schwartz, 2005). When one experiences true conversion or personal encounter with God, the believer feels a thirst and an overflowing spirituality that allows spirituality to develop spontaneously and without external constraints.

According to Penile Maiaweng explains that "enthusiasm means having a strong passion, burning desire or interest in a cause or problem", a feeling of extraordinary joy in getting things done, that is someone who has passion or passion in his heart. Here,

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service means giving to those who are strong enough to provide assistance to those in need. This means those who are willing to sacrifice themselves to own, serve and meet the needs of others (Maiaweng, 2004).

Luther Tarlim Samara said that a servant who serves "with zeal" is like a servant who has God within him. God is the One and Only God with unlimited power and energy, so that when humans feel excited, they will serve and work with extraordinary enthusiasm and energy and carry out activities with seemingly endless energy (Samara, 2013). The core of the three expert opinions and the general nature of enthusiasm for service relate to principles such as: burning to serve God, making sacrifices to serve others and meeting their needs, and a desire to seek God as an indicator full of enthusiasm for service.

### Enthusiasm for Old Testament

In the beginning was personal worship or sacrifice to God (Gen. 4:4), Abel offering sacrifices to God (Ex. 24:26). In essence, it is said that worship is an inward expression of acknowledgment of the supremacy, power, and goodness of God. Serving in worship means expressing one's spiritual greatness through praise and thanksgiving to God. Low zeal is a spiritual danger and if it persists the soul loses her zeal and there is no more integrity to seek and enjoy before God. God wants His people to always worship, give thanks, and respond through worship to His grace and salvation. For the election of the Lord Jesus Christ for salvation is the greatest work of a believer's life.

Several figures in the Old Testament Bible who are so enthusiastic in God include (Samara, 2013):

1. Jacob (Gen. 32). He wanted to return to his homeland and make peace with his brother Esau, whom he had betrayed. But then he hesitated. Once he wrestled with an angel of the Lord, and the angel struck him in the groin and paralyzed him. Jacob asked God to bless all his efforts. He named a place Peniel. His enthusiasm for making peace with Esau was revived when he was sure that God would bless him. Esau accepted. Eventually they were reconciled to God.
2. Gideon the judge (Judg. 7-8) was commissioned by God to fight the Midianites. Following God's will, Gideon led an army of just 300 men against at least 120,000 Midianites. Why is Gideon brave? This is because he is passionate for God. He believes that God is with him and will always help him. In the end, Gideon and his army won.
3. David, when faced with Goliath from the Philistine army, Goliath was armed with spears, swords and armor, while David only brought a sling full of stones or something like that. Why was David brave? This is because he is passionate for God. David said, "Come to me with sword and spear; go, and today the Lord will give you into my hand, and I will strike you and cut off your head" (1 Samuel 17:45-46). Finally, David defeats the giant Goliath.

The essence of the Old Testament about enthusiasm for serving refers to principles such as: burning to serve God, sacrificing for the sake of serving and meeting the needs of others and the desire to seek God to be used as an indicator of enthusiasm for serving.

### Enthusiasm to serve in the New Testament (Matthew 20:26-28)

Acts chapter 2 describes the origins of the church and how the early church lived (Acts 2:41-45). The author pays special attention to Acts 2:46-47. The story tells how the early Church insisted on temples and families. Christians can experience the beginning of church history from the book of Acts, which describes the life of the early church in a harmonious, joyful and happy atmosphere. The essence of the New Testament on enthusiasm for service relates to such principles as: burning to serve God, making sacrifices to serve and meeting the needs of others, and a desire to seek God as indicators of enthusiasm for service.

## RESULT

### Deskriptive Statistic Analysis

#### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Servant_Leadership	46	12,00	50,00	44,8478	6,47720
Enthusiasm to Serve	46	18,00	45,00	39,3043	5,63666
Faith_Growth	46	15,00	55,00	50,4565	6,56153
Valid N (listwise)	46				

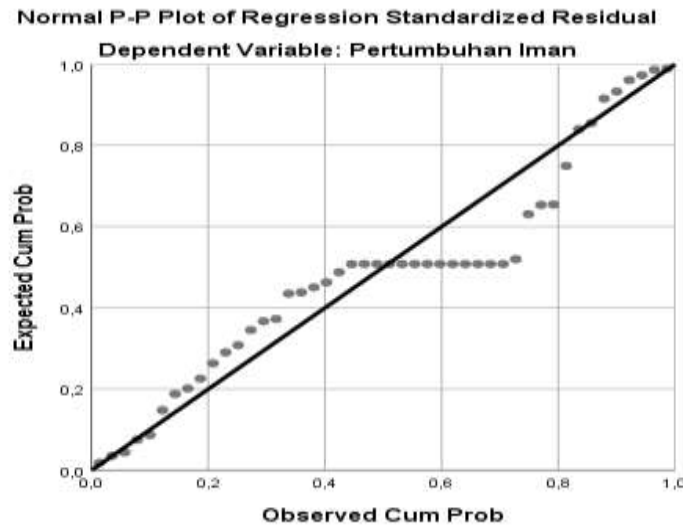
Source : December 2022

Highest Servant Leadership is 50 and lowest is 12, Highest Service Enthusiasm is 45 and lowest is 18, and Highest Faith Growth is 55 and lowest is 15, indicating normal data movement.

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## Normality Testing

From the graph below, you can see that the points spread around the line and follow the diagonal line, so the residuals in the model are normally distributed. From this it can be concluded that the residual data distribution of the variables X1, X2 and the variable Y has a normal distribution as shown in the figure below:



## FINDINGS

The statistical t-test was used to determine whether, in part, holy living and worship have a significant association with spiritual growth. The criteria for testing the t-statistic are  $t\text{-count} > t\text{-table}$  and a significance value  $< \alpha 0.05$ .

**Table 1. Partial Multiple Regression Test Results Coeffici.**

Mdel	Unstan. Coeffici.		Stan. Coeffici.	t	Sig.	
	B	std. Err.	Betas			
1	(Cons.)	10,076	3,083		3,268	0.002
	Servant Leadership	1,016	0,139	1,003	7,294	0.001
	Enthusiasm To Serve	0,632	0.199	0.721	6,233	0.002

The independent variable servant leadership and enthusiasm to serve have a significance value below 0.05, which means Hypothesis 1 and 2 answers that  $H_0$  is accepted and  $H_a$  is rejected.

## Pearson's Correlation Test

Interpret the strength of the relationship between the two variables using the following criteria: 0: there is no correlation between the two variables  $> 0$  0.25: the correlation is very weak  $> 0.25$  0.5: the correlation is sufficient  $> 0,5$  0.75: Strong correlation  $> 0.75$  0.99: Very strong correlation 1: Perfect correlation.

Based on the SPSS output results, the Pearson correlation value of the Servant Leadership variable with Faith Growth variable is 0.903, which is greater than 0.5, and the value of the Enthusiasm to serve variable with Faith Growth variable is 0.771 is greater than 0.5, so it can be concluded that the relationship between the two independent variables and the dependent variable is very strong.

F-test is used to calculations based on the Sig results are required.

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**Table 2. Pearson’s Correlation Test. Correlations**

		Servant Leadership	Enthusiasm to Serve	Faith Growth
Servant Leadership	Pearson Correlation	1	.881**	.903**
	Sig. (2-tailed)		.000	.000
	N	46	46	46
Enthusiasm to Serve	Pearson Correlation	.881**	1	.771**
	Sig. (2-tailed)	.000		.000
	N	46	46	46
Faith Growth	Pearson Correlation	.903**	.771**	1
	Sig. (2-tailed)	.000	.000	
	N	46	46	46

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 3. Simultaneous Multiple Regre ANOVAa**

Mdel		Sum Sqs.	df	MeanSqu.	F	Sig.
1	Regression	1585,732	2	792,866	96,944	.000b
	residual	351,681	43	8,179		
	Total	1937,413	45			

a. Dependent Variable: Faith Growth

b. Predictors: (Constant), Servant Leadership, Enthusiasm to serve

Simultaneous correlation test or F-test, a significance value of 0.000, which is less than alpha 0.05, so there is a significant association between servant leadership and enthusiasm to serve with faith growth at the same time.

**Table 4. Coefficient of determination R<sup>2</sup>Summary mdels**

Mdel	R	R Sqre	Adjted RSqre	std. Err. of Estim.
1	.905a	0.818	0.810	2,85983

a. Predictors: (Constant), Holy Life, Worship Praise

Correlation test results of the Servant Leadership and Enthusiasm to serve with Faith Growth variable show R-value of 0.905, meaning correlation between Servant Leadership and Enthusiasm to serve with Faith Growth rate is 0.905, proving that there is a close relationship since it is close to 1. The R-number square shows the percentage contribution of the independent variable to the dependent variable. The R-squared is 0.818, which means that the percentage contribution of the independent variable to the dependent variable is 81.8%, with the rest being influenced by other variables not considered in this study.

## DISCUSSION

Based on the research results from the data from the questionnaire results, it can be explained that the correlation test performed for each variable shows the following data: the Servant Leadership variable has a positive and very strong relationship with the Faith Growth variable with a value of 0.903, the Enthusiasm Serving variable has a positive and strong relationship with the Faith Growth variable with a value of 0.771, and the Servant Leadership and Enthusiasm variables together have a positive and very strong relationship with the Faith Growth variable with a value of 0.905.

### Servant Leadership on Faith Growth

Leaders are people who have initiative and influence. Leighton Ford understands that leaders need to lead and that more people need to follow. This shows that leaders are very critical in setting policies that affect the development of society as a whole.



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Therefore, a healthy organization needs leaders who have personal passion and sensitivity for the necessary changes and ensure sustainability (Simanjuntak, 2019).

Tri Subekti define leadership as a dynamic and collaborative social process. There, individuals and members of organizations empower themselves and others to interact in ways to experience new forms of knowledge and social meaning. This perspective encourages church members to be authoritative and independent in their faith-based social interactions through superior knowledge and understanding of the Bible, and enables leaders to engage through God's vision for a higher purpose (Subekti, 2020).

### Enthusiasm to Serve on Faith Growth

Individual and corporate growth in faith is a gift from God to his people. This means that the development of faith is the harmony of human action with God's mission and obedience to His commandments (Psalm). That means he did it. God also instituted a church that emphasizes enthusiasm to minister in fellowship with brothers and sisters in the word and faith of God. Pratt said the main goal is for believers to be enthusiastic about doing the good deeds that God has prepared for us in the presence of God (Pratt, 2002).

### Servant Leadership and Enthusiasm to Serve on Faith Growth

Ronald Leigh said that a believer needs to obey the Word of God and engage in other spiritual activities by praying, giving thanks and always worshiping God so that they can witness to many people and experience changes in behavior so that growth can take place in different ways, but all show the same basic attitude of a believer. This means believers must have servant leadership and enthusiasm to serve unselfishly, obey God, and apply God's Word in their lives (Leigh, 2017).

## CONCLUSION

Based on the research conducted, it can be concluded that there is a very strong and unidirectional relationship between Servant Leadership based on Matthew 20:26-28 and Faith Growth based on the Prayer Tower of All Nations Ministry with a correlation value of 0.903, that there is a strong and unidirectional relationship between Enthusiasm Serving with Faith Growth online worship churches in the All Nations Ministry Prayer Tower with a correlation value of 0.771 and that there is a very strong and one-way relational interaction between Servant Leaders gives Schiff based on Matthew 20:26-28 and Enthusiasm to Serve along with the spiritual growth of the online worship community in the Prayer Tower of All Nations Ministry with a correlation score of 0.905. The synergy between servant leadership based on Matthew 20:26-28 and enthusiasm for common service will make a very strong connection with the growth of the church's faith in the All Nations Prayer Tower.

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## The Effect of Combination of Plyometric Exercises on Normal Smash Skills in the Review of Leg Muscle Strength



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**ABSTRACT:** The aim of this study to find out the effect of the combination of plyometric exercises on normal smash skills in terms of leg muscle strength. The method in this study using the experimental method uses a 2 x 2 factorial design. This method is validation, namely testing the effect of one or more variables on other variables. The number of samples in this study were 60 people divided into 2 groups by ordinal pairing and each got 20 athletes with high limbs, 20 athletes with low muscles and 20 athletes without treatment. And the jump height was measured in each group before and after being given the plyometric depth jump exercise treatment. Based on the results of the study, it shows the effect of a combination of plyometric exercises on normal smash skills in terms of leg muscle strength. The average jump height in the group (Plyometric jump and high jump Depth) increased from 52.20 to 61.60 in the A1B1 group, in the A2B1 group from 155.85 to 170.25. While the average jump height in (Plyometric jump and low depth jump groups) also increased from 32.50 to 45.00 in the A1B2 group, in the A2B2 group it also increased from 113.05 to 131.64. The results of the effect test in the treatment group and the control group showed a significant value ( $P < 0.005$ ). The results of the different effect test showed that there was a different effect between the treatment group and the control group in increasing jumps. There is a significant effect between Plyometric exercises (box jumps and depth jumps) and leg muscle strength (high and low) on the increase in leg muscles in athletes. The results showed that the box jump training method was a more effective method used for athletes who had low leg muscle strength and depth jump training was used for athletes who had high leg muscle strength.

**KEYWORDS:** Plyometrics, Volleyball, Leg Muscle Strength

### I. INTRODUCTION

Volleyball is a sport played by two opposing teams, each with six players. According to Mulyadi, & Pratiwi (2020: 1) Volleyball is a sport that is known by all levels of society, both men and women, young, adults and old, as well as between villages and the world, because in volleyball there are many competitions. It turns out that this volleyball game is a combination of several big ball games which are combined into one, namely basketball, baseball and handball.

As a result of the Covid-19 pandemic, the quality of service for all supporting training venues such as public facilities, stations, sports fields, running tracks and swimming pools cannot be used for training. (Yildi z, K., Polat, E. and Güzel, p. 2018). Especially in this era of increasingly fierce competition, everyone is increasingly aware of the importance of loyalty in continuing current operations. When training is carried out, there is a strong and positive relationship between the quality of service facilities and athlete loyalty, the quality of service facilities at training venues affects athlete satisfaction. (Napitupulu, D., Rahim, R., Abdullah, D., Setiawan, M. I., Abdi Ilah, L. A., Ahmar, A. S & Pranolo, A. 2018).

Complex learning is a popular learning method that is widely used in practical situations and has been tested in several studies. Although most sports scientists and coaches agree that resistance training and plyometric training should be included in an athlete's training to increase muscle strength, data on the effectiveness of complex exercises as appropriate training methods are conflicting. Prior literature on compound training has shown increased athletic performance, although the opposite has been reported. A possible explanation for these conflicting results could be the role of variables such as the size and shape of the exercise with the initial weight, the rest interval between resistances, and the plyometric component of compound exercises. In addition, a participant's gender, fitness, age, and fitness level can also affect the benefits of holistic practice. (Annadurai, R., & Kalarani, A., 2021).

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To achieve high muscle strength and explosive power, plyometric training must be done quickly. Plyometrics trains the muscles to pre-stretch before jumping. This stretching causes the muscle to store potential energy, which helps it jump higher. For example, if an opponent's movement causes you to jump early, elastic energy is stored in the soleus and medial gastrocnemius muscles. This exercise trains fast-twitch muscle fibers and activates nerves and reflexes, making it one of the most important tools for increasing strength and speed. In the plyometric method, each exercise or activity is designed to increase the player's explosive response through vigorous muscle contraction, an increase in response occurring as a result of a rapidly eccentric contraction. (Harmandeep, S., Satinder, K., Amita, R., & Anupriya, S., 2015).

The leg strength needed to perform the smash technique plays an important role in the success of the kick. According to Hamonangan, M., & Wellis, W. (2020) The long jump exercise significantly increases the explosive power of the leg and hip muscles, especially the glutes, gastrocnemius, biceps femoris, glutes, brevis soleus, extensors, and abdomen at high speed and full of energy.

The strength of a person's limbs is influenced by the strength of the leg muscles. Strength is the ability of a muscle or muscle group to perform a single maximal contraction under pressure or load. It is this muscle strength that strengthens athletes to perform movements in any sport (Suchomel, T. J., Nimphius, S., Bellon, C. R., & Stone, M. H., 2018).

### II. METHODOLOGY

The type of research used is an experiment using a 2 x 2 factorial design. This method is validation, namely testing the effect of one or more variables on other variables. Payadnya, I. P. A. A., & Jayantika, I. G. A. N. T. (2018). The experimental method is aimed at examining causal relationships by manipulating one or more variables in one (or more) experimental group and comparing the results with the control group which did not experience manipulation. . In this research design, there were 2 groups that received different treatment, namely the administration of Plyometric box jumps and depth jumps. This research will be conducted at UPT SMK Negeri 1 Selayar, Selayar Islands Regency, South Sulawesi Province and will be carried out for 6 weeks with 3 exercises a week from February to March. The population in this study were volleyball athletes at UPT SMK Negeri 1 Selayar who joined and practiced actively, totaling around 60 athletes. The sampling technique in this study used a random sampling technique where the samples were taken randomly. The sample size in this study was 57 people divided into 2 groups by way of ordinal pairing and each got 20 athletes with high limbs, 20 athletes with low muscles and 20 athletes without treatment. The manipulative independent variables in this study were Plyometric Box Jump and Depth Jump while some of the attributive independent variables were leg muscles. Then the dependent variable is leg strength.

### III. RESULTS AND DISCUSSION

#### 1. Description of Research Data

Table 1 shows the results of the Descriptive Statistics of the Pretest and Posttest of the Leg Muscles. In the first stage, the Pretest was carried out to obtain initial data for assessing leg muscle strength in February 2023. The second stage of this research was to carry out the treatment, this study lasted 1 month and 2 weeks.

**Table 1. Description of Research Data**

Group	N	Minimun	Maxsimum	Mean	Standar Deviasi
Pretest A1B1	20	35	68	52.20	9.908
Posttest A1B1	20	48	79	61.60	9.870
Pretest A2B1	20	130	198	155.85	18.689
Posttest A2B1	20	142	210	170.25	17.956
Pretest A1B2	20	23	45	32.50	7.156
Posttest A1B2	20	30	62	45.00	9.984
Pretest A2B2	20	95	129	113.05	10.180
Posttest A2B2	20	108	160	131.65	15.551

Based on the table above, it shows that the leg muscle strength of the A1B1 group had an average pretest of 52.20 and experienced an increase in the posttest of 61.60, the A2B1 group had an average pretest of 155.85 and experienced an increase in the posttest of 170.25. The A1B2 group had an average pretest of 32.50 and experienced an increase in the posttest of 45.00, the A2B2 group had an average of 113.05 and experienced an increase in the posttest of 131.64.

#### 2. Normality Test

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The data normality test in this study used the Shapiro - Wilk method. The results of the data normality test carried out in each analysis group were carried out with the SPSS version 22.0 for windows software program with a significant level of 5%.

**Table 2. Normality Test**

Kelompok	P	Signifikan	Keterangan
Pretest A1B1	0.197	0.05	Normal
Posttest A1B1	0.149		Normal
Pretest A2B1	0.186		Normal
Posttest A2B1	0.565		Normal
Pretest A1B2	0.128		Normal
Posttest A1B2	0.318		Normal
Pretest A2B2	0.206		Normal
Posttest A2B2	0.240		Normal

Based on the statistical analysis of the normality test that was carried out with the Shapiro - Wilk test, on all pretest and posttest data on leg muscles, the results for Group P were significant. Posttest A1B2 0.318 Normal Pretest A2B2 0.206 Normal Posttest A2B2 0.240 Normal 0.05 Table 8. Summary of Normality Test Results 94 normality test data significance value  $p > 0.05$ , which means the data is normally distributed.

### 3. Homogeneity Test

The homogeneity test was carried out to test the similarities of several samples, namely homogeneous or not. The homogeneity test is intended to test the similarity of the variants between the Pretest and Posttest. Based on the statistical analysis of the homogeneity test which was carried out using the Levene Tests. The calculation results obtained a significance value of  $0.492 \geq 0.05$ . This means that the data group has homogeneous variants. Thus the population has the same variance or homogeneity.

**Table 3. Homogeneity Test**

F	df1	df2	Sig.
0.736	3	156	0.392

From the results of the study, three groups of conclusions were analyzed, namely (1) the difference in the effect of Plyometric box jumps and depth jumps on increasing leg muscles; Based on the hypothesis testing, it is known that there is a significant difference in the effect of Plyometric box jump and depth jump exercises on increasing leg muscle strength in athletes. The box jump training group was lower compared to the depth jump group on increasing leg strength, (2) The difference in the effect between athletes who had high and low leg muscle strength on increasing leg muscle strength in athletes; The results of the analysis show that there is a significant difference in the effect of athletes who have high and low leg muscle strength on the increase in athlete's leg muscle strength. Athletes who have high leg muscle strength are higher (good) compared to athletes who have low leg muscle strength in terms of increasing leg muscle strength. (3) The effect of Plyometric exercises (box jumps and depth jumps) and leg muscle strength (high and low) on increasing leg muscle strength in athletes; Based on the results that have been put forward in the results of this study that there is a significant effect between Plyometric exercises (box jumps and depth jumps) and leg muscle strength (high and low) on increasing leg muscle strength in athletes. The results showed that the box jump training method is a more effective method for athletes who have low leg muscle strength and depth jump training is more effective for athletes who have high leg muscle strength. From the results of the influence form it appears that the main factors of the study in the form of two factors show a significant influence. In the results of this study influence which means that each cell or group has a different effect on each group that is paired.

Athletes who have high leg muscle strength are better than low leg muscle strength on leg muscle strength. Muscle strength can be influenced by two components, namely strength and speed, both the speed of nerve stimulation and the speed of muscle contraction. The explosive muscle power generated by the leg muscle strength has an effect on the transfer of horizontal to vertical momentum. This will affect the thrust generated from the change in momentum, because the characteristic of the jump is that the repulsive movement must be carried out by directing the explosive power of the muscles. Explosive power is the product of the two components of the physical condition, namely strength and speed which are formulated;  $\text{power} = \text{force (strength)} \times \text{Velocity (speed)}$ . From this formula it can be concluded that explosive power cannot be separated from explosive power, namely strength and speed, so the main factors for explosive power are strength and speed, where all the factors that affect the two components of the physical condition mentioned above. Explosion power. (Widiastuti, 2015:60).

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### IV. CONCLUSIONS

Based on the research results and the results of data analysis that has been done, the following conclusions are obtained

1. There is a significant difference in the effect of Plyometric box jump and depth jump exercises on increasing leg muscle strength in athletes. The box jump exercise group was lower compared to the depth jump exercise group in terms of increasing leg muscle strength.
2. There is a significant difference in the effect of athletes who have high and low leg muscle strength on increasing leg muscle strength in athletes. Athletes who have higher leg muscle strength (good) compared to athletes who have low leg muscle strength increase in leg muscle strength.
3. There is a significant effect between Plyometric exercises (box jumps and depth jumps) and leg muscle strength (high and low) on the increase in leg muscles in athletes. The results of the study show that the box jump training method is a more effective method used for athletes who have low leg muscle strength and depth jump exercises are used for athletes who have high leg muscle strength

### RECOMMENDATION

Based on the results of the research, the trainers and other researchers were given the following suggestions:

1. Trainer Based on the results of the research that has been done, it proves that the box jump training method is more effective than the depth jump. it is suggested to the coach, to use the box jump method to increase leg muscle strength.
2. For further researchers
  - a. Based on the results of this study, it is proven that the box jump training method is a more effective method for athletes who have low leg muscle strength and depth jump training is more effective for athletes who have high leg muscle strength. This is an empirical study that can be used by researchers in innovating to improve leg muscles.
  - b. For researchers who intend to continue or replicate this research, it is recommended to exercise tighter controls in the entire series of experiments. These controls are carried out to avoid threats from validity and internal

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## Effectiveness of Self-Talk Training to Improve Self-Confidence, Achievement Motivation, and Performance of Venus Angels Futsal Athletes Semarang



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### ABSTRACT:

**Purpose:** This study aims to determine the Effectiveness of Self-Talk Training to Improve Self-Confidence, Achievement Motivation, and Performance of Venus Angels Futsal Athletes Semarang.

**Materials and Methods:** The type of research used in this study is a type of quantitative research using pre-experimental methods. The design in this study used a one group pretest-posttest. The normality test uses the Kolmogorov Smirnov Normality Test with the rule that if the value (p) > 0.05 then it is normally distributed. Meanwhile, if the value (p) < 0.05 then the data is abnormally distributed. This normality test is analyzed using the help of the computer program SPSS for windows version 25. The homogeneity test uses the Levene's Test, aiming to determine the variation of the initial sample data, with the rule that if the value of (p) > 0.05 then the data group has a homogeneous variant, on the contrary if the value of (p) < 0.05 then the data group has a heterogeneous variant. This homogeneity test is analyzed using the help of the SPSS for windows version 25 computer program. Test the hypothesis was carried out using the T-test and the Wilcoxon Signed Rank Test.

**Results:** Based on the results of the research that has been done and looking at the statistical descriptive data, it shows that there is an increase in the average before and after being given the Self Talk Training treatment of each variable, namely self-confidence, achievement motivation and athlete performance. The results of the research data from the results of the pretest and posttest of confidence with a sample of 16 athletes, obtained an average pretest data of 52.3125 with a standard deviation of 3.85951 and an average posttest data of 59.0625 with a standard deviation of 3.51129. The achievement motivation variable shows the results of the research data from the pretest and posttest results with a sample of 16 athletes, obtained an average pretest data of 29.6250 with a standard deviation of 2.65518 and a posttest average data of 34.5000 with a standard deviation of 2, 47656. The performance variable shows the results of research data from the pretest and posttest results with a sample of 16 female athletes, obtained an average pretest data of 72.7500 with a standard deviation of 6.45497 and a posttest average data of 76.3125 with a standard deviation of 2, 47656.

**Conclusions:** Based on the results of the research and the results of the data analysis conducted, it shows that there was a significant increase before and after being given the Self Talk Training treatment of each variable, namely self-confidence, achievement motivation and athlete performance. After being analyzed with the T-test and Wilcoxon signed rank test, it was concluded that Self-Talk Training was effective in increasing self-confidence, achievement motivation, and performance of futsal athletes of Venus Angels Semarang. Participants before and after being given the intervention. The tests above prove that Self-Talk Training is effective in increasing self-confidence, achievement motivation, and performance of futsal athletes of Venus Angels Semarang.

**KEYWORDS:** Effectiveness, Self-Talk Training, Self-Confidence, Motivation, Performance, Futsal

### INTRODUCTION

Futsal is one of the most popular games that is currently in great demand by the people of Indonesia (Sari, 2016). Futsal is a sport that is played indoors which is similar or similar to football, each team consists of five core players and is different from soccer which has 11 players (Aguss & Yuliandra, 2021). The size of the futsal field is 20x40m, different from the size of a football field.

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Venus Angels is one of the women's futsal clubs in the city of Semarang. It has a secretariat located on Jalan Prof. Suharso Sendang Mulyo Semarang. Venus Angels Semarang was formed on February 20 2015 with director Andri Surya Putra, head coach Paulus Chandra O, assistant coach Fikie Saputra, S.Pd, and goalkeeping coach Mulky Mughty. Many players from various schools, colleges and locales have joined the Venus Angels club. The existence of the Venus Angels Semarang futsal club is believed to be able to advance women's futsal in Central Java, especially the city of Semarang.

Venus Angels Semarang is also a place to develop futsal skills, this is evidenced by the practice every Monday and Wednesday at the Venus Sendangmulyo futsal field in Tembalang. In relation to coaching to increase the capacity of athletes, especially futsal players, training is needed. According to (Suriani & Lesmana, 2019) Good training is a systematically planned activity by following the different game attributes, time accessibility, and the athletes to be coached. The harmonious development of athletes between physically and mentally is very necessary to achieve maximum performance (Jamalong, 2014). Increasing physical, technical and tactical abilities without mental coaching will result in negative results because mentality is the driving force and driving force to strengthen physical, technical and tactical abilities in sports performance.

Confidence and achievement motivation is one thing that is very important and needed to achieve maximum performance, if an athlete has low self-confidence and achievement motivation it will greatly affect the athlete's performance during competition (Walid et al., 2019). Self-confidence and achievement motivation are very serious problems for Venus Angels players in the several tournaments they have participated. In the official tournament organized by the provincial futsal association (AFP), Venus Angels has never won first place.

Sports confidence is confidence applied to sporting situations (Apriansyah et al., 2017). Self-confidence has always been considered a very important factor affecting sports performance (Nisa & Jannah, 2021). People who are confident in sports refer to those who have the confidence to be able to acquire the physical abilities and sports skills appropriate to the tasks required for sports (Sakti & Rozali, 2015).

Motivation is an individual's actions, thoughts and feelings that arise by emphasizing something in him (Muhammad, 2017). Motivation comes from the Greek word: "movere" means "to move" which means to push and move (Masni, 2015). Regarding the objectives a player wants to accomplish in order to perform at their best and reach their goals, futsal players truly need motivation (Effendi, 2016).

(Rohaeni, 2016) have the opinion that motivation can be interpreted as a driving force and strength to be able to do certain things. In line with this opinion, whether or not the target of a goal is achieved is a very strong role of motivation itself (Sri Murniyanti, 2020). Motivation is also a psychological energy whose form is abstract and can only be understood and observed in how individuals behave (Fadillah, 2013). Motivation is a psychological process of reflection on the strength of the interaction between experience and cognition (Nopiyanto & Dimiyati, 2018).

Self talk training has not been used in the training process for the Venus Angels team, which causes negative self talk among the Venus Angels players. (Fitria, 2018) found that self-talk is a mental training program proposed by sports psychologists with the hope of regulating emotions, cognition, behavior and performance. An athlete who has positive self-talk can play with confidence and achievement motivation from every athlete in facing a competition is also very important to be able to support his performance on the field (Putra & Jannah, 2017). Training on the effectiveness of self-talk focuses more on one of the most important mental trainings in futsal, because futsal matches are clean for 20 minutes in each round, and 2 rounds in each match do not only rely on physical strength alone, a good mentality is wrong. one thing is very important to be able to play optimally and win matches (Marhani et al., 2018).

Great performance determines the achievement of an athlete in a match. Performance is a non-verbal correspondence, and is something that is important to be prepared for, proper performance must be compatible with physical and emotional health (Rahmansyah et al., 2021). Execution in sport has been the subject of mental examination for over a hundred years, providing results on motivation, perception, stress, self-confidence, mental organization, and group elements.

(Gustian, 2016) explains that the athlete's appearance is something that is seen or displayed by athletes on the field. Performance or appearance is a condition that athletes have when carrying out all forms of sports activities when competing (Ulfah, 2006). Appearance is a very important aspect to review, both when an athlete loses or wins (Wan Norina Wan Hamat, Zaharah Hussin, Ahmad Fakrudin Mohamed Yusoff, 2013). Victory can be obtained due to the luck factor, and an athlete who is lulled in his victory, will make the athlete pay less attention to his appearance.

Based on the description of the factors mentioned above, it is known that the self-talk method is one of the training methods that can be chosen to increase self-confidence, achievement motivation, and performance of futsal athletes. However, it is not yet known how effective the self-talk method is in increasing self-confidence, achievement motivation, and the performance of futsal athletes. To know for sure, it is necessary to conduct research by providing self-talk methods to increase



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self-confidence, achievement motivation, and performance of futsal athletes. Based on the background of the problems that have been described, the researcher will conduct a study entitled "Effectiveness of Self Talk Training to Increase Self-Confidence, Achievement Motivation, and Performance of Futsal Venus Angels Semarang Athletes".

## METHOD

The type of research used in this study is a type of quantitative research using pre-experimental methods. The design in this study used a one group pretest-posttest. (Andrini & Pratama, 2021) explained that the one group pretest-posttest design is a research activity that gives an initial test (pretest) before being given treatment, after being given treatment then gives a final test (posttest). This one group pretest-posttest design consists of one predetermined group. In this design, the test was carried out twice, namely before being given the treatment is called the pre-test and after the treatment is called the post-test. As for the research pattern of the one group pretest-posttest design according to (Sugiyono, 2019) as follows:

**Table 1. Research Design**

Pre Test	Treatment	Post Test
z1	x	z2

Information:

z1 : Pre test confidence, achievement motivation, and performance.

z2 : Post test confidence, achievement motivation, and performance.

X : The use of self-talk exercises to increase self-confidence, achievement motivation, and performance.

The normality test uses the Kolmogorov Smirnov Normality Test with the rule that if the value (p) > 0.05 then it is normally distributed. Meanwhile, if the value (p) < 0.05 then the data is abnormally distributed. This normality test is analyzed using the help of the computer program SPSS for windows version 25. The homogeneity test uses the Levene's Test, aiming to determine the variation of the initial sample data, with the rule that if the value of (p) > 0.05 then the data group has a homogeneous variant, on the contrary if the value of (p) < 0.05 then the data group has a heterogeneous variant. This homogeneity test is analyzed using the help of the SPSS for windows version 25 computer program. Test the hypothesis was carried out using the T-test and the Wilcoxon Signed Rank Test.

## RESULT

**Table 2. Data Description**

	N	Mean	Std. Deviation	Minimum	Maximum
GPB	16	72,7500	6,45497	64,00	85,00
GPA	16	76,3125	5,51022	68,00	88,00
MotB	16	29,6250	2,65518	26,00	36,00
MotA	16	34,5000	2,47656	32,00	40,00
KepB	16	52,3125	3,85951	47,00	60,00
KepA	16	59,0625	3,51129	54,00	66,00

Based on the results of the research data from the pretest and posttest results of self-confidence with a sample of 16 female athletes Venus Angels, the pretest average data was 52.3125 with a standard deviation of 3.85951 and the posttest average data was 59.0625 with a standard deviation 3.51129. The highest self-confidence pretest score is 60.00 and the lowest score is 47.00 while the highest self-confidence posttest score is 66.00 and the lowest score is 54.00.

Based on the results of the research data from the pretest and posttest results of achievement motivation with a sample of 16 Venus Angels female athletes, the pretest average data was 29.6250 with a standard deviation of 2.65518 and the posttest average data was 34.5000 with a standard deviation 2.47656. The highest pretest score for achievement motivation was 26.00 and the lowest score was 36.00 while the highest posttest score for achievement motivation was 32.00 and the lowest score was 40.00.

Based on the results of the research data from the pretest and posttest performance results with a sample of 16 Venus Angels female athletes, the pretest average data was 72.7500 with a standard deviation of 6.45497 and the posttest average data

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was 76.3125 with a standard deviation of 2,47656. The highest pretest performance score is 85.00 and the lowest score is 64.00 while the highest posttest performance score is 88.00 and the lowest score is 68.00.

**Table 3. Kolmogorov Smirnov Normality Test**

		GPB	GPA	MotB	MotA	KepB	KepA
N		16	16	16	16	16	16
Normal Parameters <sup>a,b</sup>	Mean	72,7500	76,3125	29,6250	34,5000	52,3125	59,0625
	Std. Deviation	6,45497	5,51022	2,65518	2,47656	3,85951	3,51129
Most Extreme Differences	Absolute	0,169	0,200	0,292	0,267	0,118	0,119
	Positive	0,169	0,200	0,292	0,267	0,118	0,119
	Negative	-0,088	-0,105	-0,208	-0,156	-0,084	-0,108
Test Statistic		0,169	0,200	0,292	0,267	0,118	0,119
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>	.086 <sup>c</sup>	.001 <sup>c</sup>	.003 <sup>c</sup>	.200 <sup>c,d</sup>	.200 <sup>c,d</sup>

The results of the one sample normality test Kolmogorov-Smirnov test using the SPSS application show the Asymp value. Sig (2-tailed) for the performance and self-confidence variables is greater than 0.05 ( $p > 0.05$ ), then the data is said to be normally distributed while the achievement motivation variable has an Asymp value. Sig (2-tailed) is smaller than 0.05 ( $p < 0.05$ ) so the data is said to be not normally distributed. From the results of the normality test, for data that is normally distributed using the t-test and for data that is not normally distributed using the Wilcoxon signed ranks test..

**Table 4. T-test results**

		Paired Samples Test						
Group	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
				Lower	Upper			
KepB - KepA	-6,75000	1,69312	0,42328	-7,65220	-5,84780	-15,947	15	0,000
GPB - GPA	-3,56250	2,27944	0,56986	-4,77713	-2,34787	-6,252	15	0,000

In the aspect of self-confidence, there is a significant difference in the participants before and after being given the intervention with a value of  $t = -15.947$  &  $p$ -value = 0.000 (mean  $\pm$  SD = 6.75  $\pm$  1.69, Confidence Interval -7.65 to -5,84). In terms of performance, there was a significant difference between the participants before and after being given the intervention with a value of  $t = -6.252$  &  $p$ -value = 0.000 (mean  $\pm$  SD = 3.56  $\pm$  2.27, Confidence Interval -4.77 to -2, 34).

**Table 5. Wilcoxon Signed Ranks Test Results**

Test Statistics	
	MotA - MotB
Z	-3.601 <sup>b</sup>
Asymp. Sig. (2-tailed)	0,000

In the aspect of achievement motivation, there is a significant difference in the participants before and after being given the intervention with a Z value of -3.601 with a p value (Asymp. Sig 2 tailed) of 0.000.

## DISCUSSION

Self-confidence and achievement motivation are very important things and are needed to achieve maximum performance (Ferdy Irawan & Limanto, 2021). If an athlete has low self-confidence and achievement motivation, it will greatly affect the athlete's performance during competition (Wimala et al., 2019). Psychological factors play an important role in player performance to achieve the desired achievements, 80% of the winning factors for professional athletes are controlled by psychological factors (Grushkoa et al., 2019). Futsal is a very difficult game that relies on difficult tactics and plans in addition to physical challenges (Wijayanti & Kushartanti, 2014). The futsal field, which is relatively small, forces players to think fast and act smart, understanding the strategy and tactics of the coach is something that is not easy, especially to apply it in a match because it is related to the

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mentality that is influenced by the player's anxiety (Aguss & Yuliandra, 2021). The inability of athletes to understand and develop their capacities can affect their performance when playing (Eubank et al., 2017).

Nevertheless, another factor that made the performance of the players not optimal was the lack of achievement motivation from the Venus Angels players. In the several tournaments that he participated in, there was still no achievement motivation from the players. High achievement motivation will try every troublesome test and game. Athletes who have high motivation within themselves like difficulties in competing, don't give up easily against good opponents and are always optimistic in competing because they want to achieve results like champions in competing (Supriyanto, 2017). Athletes who are confident always think positively to show their best state and increase their confidence in their ability to do so, so they always do this (Abdillah & Ashadi, 2018).

Mental strength has an impact on the appearance of athletes when competing. In sports, confidence is very strong in the appearance of athletes (Prastyo et al., 2017). For athletes, competing is not only a matter of winning and beating the opponent, but also the ability to overcome the fear within themselves. Athletes who are confident always think positively to show their best state and increase their confidence in their ability to do so, so they always do this. The lack of confidence of the Venus Angels players can be seen when they meet difficult opponents. It is very visible that there is still a lack of confidence in the players to win the game and if you have left behind before the goal, it will be difficult to turn things around.

Based on the results of the research that has been done and looking at the statistical descriptive data, it shows that there is an increase in the average before and after being given the Self Talk Training treatment of each variable, namely self-confidence, achievement motivation and athlete performance. The results of the research data from the results of the pretest and posttest of confidence with a sample of 16 athletes, obtained an average pretest data of 52.3125 with a standard deviation of 3.85951 and an average posttest data of 59.0625 with a standard deviation of 3.51129. The achievement motivation variable shows the results of the research data from the pretest and posttest results with a sample of 16 athletes, obtained an average pretest data of 29.6250 with a standard deviation of 2.65518 and a posttest average data of 34.5000 with a standard deviation of 2, 47656. The performance variable shows the results of research data from the pretest and posttest results with a sample of 16 female athletes, obtained an average pretest data of 72.7500 with a standard deviation of 6.45497 and a posttest average data of 76.3125 with a standard deviation of 2, 47656. From these results a hypothesis test was carried out using the T-test and the Wilcoxon Signed Rank Test.

### CONCLUSION

Based on the results of the research and the results of the data analysis conducted, it shows that there was a significant increase before and after being given the Self Talk Training treatment of each variable, namely self-confidence, achievement motivation and athlete performance. After being analyzed with the T-test and Wilcoxon signed rank test, it was concluded that Self-Talk Training was effective in increasing self-confidence, achievement motivation, and performance of futsal athletes of Venus Angels Semarang. Participants before and after being given the intervention. The tests above prove that Self-Talk Training is effective in increasing self-confidence, achievement motivation, and performance of futsal athletes of Venus Angels Semarang.

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## The Role of Customer Loyalty on Customer Retention in Retail Companies



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**ABSTRACT:** Retail can be seen from two sides, namely traditional retail such as grocery stores and community businesses, most of which do not use professional management and modern retail which can be seen as stores with professional management. Emerging competition makes companies have to carefully set strategies and manage companies so that companies are able to remain competitive and survive. Maintaining customer loyalty is one of the company's strategies to survive with the existing competitive conditions. This research uses a qualitative descriptive method, which describes the data collected and analyzed. The subject of this research is the role of consumer loyalty on customer retention in retail companies using literature review of secondary data. Based on the results of the study, it can be explained that the role of consumer loyalty on customer retention in retail companies that are developing in the form of department stores in Indonesia, namely with this loyalty, a retail company can compete with other retail businesses. Loyalty definitely has an impact on customer retention, and consumers choose retail businesses for their daily needs. Similar forms of competition between modern retail companies include segmented market competition, service system competition, price competition, product quality competition and so on.

**KEYWORDS:** Loyalty, Consumer, Customer Retention, Retail.

### INTRODUCTION

In modern times and the influence of globalization is very strong like today, the development of retail businesses in Indonesia is triggered by the rapid competition in the end consumer market and social factors. Changes in lifestyle and shopping patterns and habits of the Indonesian people also affect the development of retail businesses, especially in urban areas where the tendency of consumers to choose to shop in modern markets reaches 41%. Retail businesses are divided into four categories, namely based on sales volume, type of products sold, form of business ownership and based on the operating methods used. The classification of retail businesses based on sales volume can be divided into large, medium and small-scale retail. Large-scale retail formats such as department stores, chain stores, warehouse stores and supermarkets can be grouped more specifically based on the types of products sold that are food-oriented. (Sulistiyowati & Indrian, 2020).

The world of retail is a world that is always actively growing and developing. Etymologically, retail means breaking down goods and services in accordance with consumer needs (Utami, 2010: 5). Retail can be seen from two sides, namely traditional retail such as grocery stores and community businesses that mostly do not use professional management and modern retail which can be seen as stores with professional management. The concept of growth and development can be interpreted by the increasing number of retailers opening outlets / stores. These conditions on the other hand can be seen as the potential market that needs to be tapped and the need for companies to increase the volume of their companies to achieve economic conditions. Seeing this fact, competition in the retail world can be said to be tight and targeting various segments and changing consumer behavior in terms of shopping in modern markets.

The tight competition that arises makes companies have to carefully set strategies and manage the company so that the company is able to remain competitive and survive. Maintaining customer loyalty is one of the company's strategies to survive with the existing competitive conditions. Loyal consumers can be understood as company assets to develop and compete with similar companies. Facts reveal that currently it is increasingly difficult for companies to gain a competitive advantage due to rapid product imitation, short product life and the amount of information available to consumers and consumers' negative response to advertising. besides the fact that the minimum barriers to switching make consumers easily move from one store to another. These findings do make companies have to be more careful and smart in managing the market because of the higher similarity of products and services and easy access to information so that the company's strategy must be built in such a way and one way is

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to build a better brand, proficiency in building long-term relationships with consumers and proficiency in the excellence of the company's offerings. (Suhartadi, 2013).

Therefore, companies need to always improve their marketing strategies in order to be the foremost and best in providing services to consumers, so that consumers continue to have high loyalty to the products or services produced by the company. Thus it can be said that the success of a company is determined by the loyalty of its customers. The longer the loyalty of a customer, the greater the profit the company can get from this one customer. In general, loyalty is defined as continuous repurchase of the same brand, or in other words, it is the action of someone who buys a brand, pays attention only to certain brands and does not want to look for information related to that brand. Loyalty is a repetitive purchasing behavior that has become a habit, where there is already a high level of connection and involvement in his choice of a particular object, and is characterized by the absence of external information searches and alternative evaluations. (Mizana, 2010).

Customer loyalty is paramount to the survival of a retail company in a competitive environment and is a critical component of a retail company's growth and performance. Companies must design customer-driven marketing strategies and build the right relationships with the right customers to maintain customer loyalty. Loyalty can be obtained or achieved if customer satisfaction is met, customer satisfaction is a key factor for hypermarket and supermarket retail businesses by creating friendly relationships between staff and customers. there are at least 6 (six) important factors for retail customer satisfaction, among others: (1) The location or place where the retail store is located has a certain attraction to customers; (2) The completeness of the goods sold in retail not only helps retail businesses attract more customers but can also motivate customers to buy other goods in the store; (3) Price is an important factor in the retail business because the competitive price of goods can provide satisfaction to retail customers. (Supar & Suasana, 2017).

Currently, the loyalty program is something that many companies are doing which aims to increase customer retention, namely through efforts to increase satisfaction and value to certain customers. This is done with the consideration that increasing customer satisfaction and loyalty has a positive influence on the company's long-term financial performance. Customer retention is largely determined by the intensity with which customers use the services provided. The more often customers use the services of a business, the more often customers will make repurchases. In an effort to create customer retention, companies need to pay attention, track, and study customer satisfaction. Because most companies are only fixated on standard standards that are considered sufficient to satisfy customers without looking for innovations that might have the potential to increase customer satisfaction. (Esti et al., 2013).

### RESEARCH METHODS

This research uses a qualitative descriptive method, which describes the data collected and analyzed. The subject of this research is on the role of consumer loyalty on customer retention in retail companies using literature review of secondary data. This secondary data is obtained from literature, previous research journals, magazines and company document data needed in this study.

The data collection technique used in this research is through documents which are formal records, books, articles and other information materials that have relevance to the problem or archive. Data analysis used in this research uses a qualitative approach, namely by collecting or describing data from the field which is useful for providing an overview of the research and as a discussion of the research results. The data used is the result of collection from field research which is compared with the theoretical basis obtained from library materials to be able to solve existing problems and then compiled into a research result in order to produce a new conclusion.

### RESULTS AND DISCUSSION

#### A. The Role of Consumer Loyalty on Customer Retention in Retail Companies in Indonesia.

Consumer loyalty is consumer loyalty to companies, brands and products. Loyalty is a favorable attitude towards a brand which is presented in consistent purchases of that brand over time. According to Kotler, customer loyalty will increase when customers feel satisfied after making a purchase. Customer satisfaction is an important indicator in determining customer loyalty.

Several factors that can affect customer loyalty are explained as follows:

##### a. Customer satisfaction

If the company can provide services that exceed customer expectations, then customers will be satisfied. Satisfied customers will definitely have high loyalty to the product compared to unsatisfied customers.

##### b. Customer retention

Customer retention is the length of the relationship with the customer. The customer retention rate is the percentage of customers who have fulfilled a certain number of repeat purchases over a limited period of time.

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### c. Customer migration

Customer switching continues to occur even though customers are satisfied, with the products and services provided by the company and with the loyalty program provided by the company.

### d. Customer enthusiasm

Loyalty is not only in the mind, remembering and using the product, referring and recommending usage to others, but also has become part and parcel of the customer as a whole. (Thendywinaryo et al., 2020).

Oliver (2014) explains that customer loyalty is a form of commitment from customers to always use products in the form of goods or services in the future. Customer loyalty has an impact on the company's success. Customer loyalty is shown through the positive attitude of customers to a product who buy goods continuously and do not change even though times change. Having customer loyalty is one of the efforts to win the market competition strategy. Griffin (1995) explains that customer loyalty is an activity of regularly buying a product and not being interested in products from other brands. Customer loyalty is carried out with an attitude, behavior, and composite approach. In addition, customer loyalty as an action to reduce customer retention (Arif Rachman Putra et al., 2022).

The experience gained when making a purchase allows consumers to decide on a product that gives them satisfaction. The basic level of customer satisfaction is important for business continuity, because satisfied consumers can recommend products or services to people, or even generate a desire to make repeat purchases. When consumers are already at the repurchase stage, they will become repeat consumers, and even further become loyal customers. (Fitriani et al., 2022).

Shopping activities carried out by customers at a retailer are inseparable from interactions with employees, such as when customers have to request additional information about products that are not available on display shelves, or when customers make payments at the cashier. This interaction embodies customer transaction satisfaction that arises as a reward for transaction performance and interactions that occur when the main part of the service is delivered to the customer. The existence of relational relationships occurs if customers accept exchanges with sellers as potential past and future interactions that are realized through the formation of relational outcomes. Relational outcome is the existence of sustainable long-term relationships and can be indicated by the development of trust, commitment and relationship satisfaction.

Oderkerken et al.'s (2003) research only shows the results of a significant influence between the implementation of relational strategies on customer commitment and trust, but it has not been proven how customer commitment and trust will be able to build customer retention to retailers. Several relational marketing studies prove that customer commitment is a key factor determining the level of customer retention. Some academic views believe that the importance of relational marketing practices as well as service quality and consumer perceptions of relational outcomes that are well built by retailers will have an impact on customer retention behavior. (Sulistiyowati & Indrian, 2020).

In Indonesia itself, currently the level of market competition in the retail world is very tight and there are already too many players involved with very large capital, to deal with market competition that is too tight it is necessary to have a different strategy concept with other competitors who have very large capital. The right strategy to enter the market with a different marketing concept is a social business strategy, and grows to involve the community, where the company tries to make a profit but also to solve social problems using business methods. Therefore, retail companies will compete to gain customer retention through consumer loyalty to the products and services of their business.

Customer retention is a form of loyalty related to loyal behavior which is measured based on consumer buying behavior which is indicated by the high frequency of consumers buying a product. Customer retention will also be a manifestation of potential loyalty. Improving companies by increasing customer retention by 5% can result in a 25-95% increase in long-term profits. Customer retention in turn generates a good business reputation and opens up new markets, Customer retention is the best evidence of the quality of products and services provided to consumers. Customer retention is the link between customer loyalty and profitability. (Hafif, 2014).

Companies need to build a good image in line with developing services for customer satisfaction. A good image can be built by synergizing with the marketing team to market and introduce products and innovative features of the company to attract more purchases from consumers. In general, the term marketing means something that includes the entire system related to the aim to plan and determine prices to promote and distribute goods and services that can satisfy the needs of actual and potential buyers. The scope of marketing is clearly broader than sales, because marketing involves all activities ranging from product research and planning, preparation of brands and packaging, preparation of distribution channels and agents, to the preparation of aftersales services. *Marketing* requires imagination, but more importantly *marketing* activities also require responsibility and awareness of the company concerned about the need for *Public Relations* activities. In supporting the operation of *Public Relations*, on the one hand has the similarity of having the power to form public opinion and the other has a difference. *Public*

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*Relations* emphasizes the function of gaining understanding between the institution it represents and the public which is the target target. (Situmeang, 2013).

### **B. Implementation of Consumer Loyalty towards Customer Retention in Developing Retail Companies in the Form of Department Stores in Indonesia.**

Retail is an important link in the distribution process of goods and is the last link in a distribution process. Through retail, a product can meet directly with its users. The retail industry here is defined as an industry that sells products and services that have been added value to meet the needs of individuals, families, groups, or end users. The products sold are mostly the fulfillment of household needs including nine basic necessities. The retail industry in Indonesia makes a large contribution to the Gross Domestic Product (GDP) and also absorbs a large number of workers. As a developing country, the growth rate of Indonesia's retail industry is influenced by the strength of people's purchasing power, population growth, and also the need for fulfillment of consumer products.

The presence of the modern retail industry basically utilizes the shopping patterns of people, especially the upper middle class, who do not want to jostle in traditional markets that are usually muddy or not neatly organized. Although the presence of modern retail is highlighted to kill traditional markets because it has advantages in many factors, its own development can be said to be unstoppable. If observed further, the retail business competition is increasingly unhealthy. The government tends to sell licenses to big players, even hypermarkets, even though the market is already saturated. As a result, in some cities, large retail outlets have begun to close, while in housing estates and villages, grocery merchants are threatened by mini-market franchises. (Soliha, 2008).

In an unhealthy business climate, the law of the jungle applies. Whoever is strong is the winner. Maybe Indonesia is not that bad yet, but if it is not addressed immediately, the potential for the law of the jungle to apply is just a step away. Local governments as regional authorities should know the potential of their regions. What is the purchasing power of the people and how many retailers are operating. So far, there is a tendency for local governments to never object to giving licenses to investors who want to open retail outlets. According to the Indonesian Retailers Association (APRINDO), the retail business in Indonesia began to develop in the 1980s along with the development of the Indonesian economy. This came about as a result of the growth of the middle class, which led to the demand for supermarkets and department stores (convenience stores) in urban areas.

This trend is expected to continue in the future. Another thing that drives the development of the retail business in Indonesia is the change in lifestyle of the upper middle class, especially in urban areas who tend to prefer shopping in modern shopping centers. Changes in shopping patterns that occur in urban communities are not only to fulfill shopping needs but also to travel and seek entertainment. The development of businesses in the retail industry is also followed by increasingly fierce competition between a number of local and foreign retailers that have sprung up in Indonesia. The retail industry in Indonesia is currently growing with the construction of more and more new outlets in various places. The eagerness of retailers to invest in the construction of new outlets is not difficult to understand. With economic growth averaging above 3% since 2000 and inflation under control, they have reason to believe that Indonesia's economy will strengthen again in the future. (Soliha, 2008).

There are several retail companies in Indonesia in the department store category, namely PT Matahari Department Store Tbk (Matahari Department Store) which was established on October 24, 1958, PT Mitra Adi Perkasa which owns Sogo Department Store, which opened in 1990 in Jakarta, PT Ramayana Lestari Sentosa Tbk (Ramayana Department Store) which was established 1978, and PT Metropolitan Retailmart (Metro Department Store) which was established 1991. Among the four retail companies in the department store category, two of them have online sites, namely Matahari Department Store and Sogo Department Store.

Initially, the Lippo Group has opened an e-commerce called MatahariMall on September 9, 2015, which has hundreds of thousands of product choices with the best prices from all needs, ranging from women's fashion, men's fashion, health & beauty, cellphones and tablets, laptops, gadgets, electronics, lifestyle, hobbies, household needs, and others. However, on November 9, 2016 PT Matahari Department Store Tbk (MDS) also opened an ecommerce called MatahariStore, although initially MDS had a special page on MatahariMall, this was done by MDS because the MatahariStore site only wanted to focus on fashion. However, when customers open the MatahariStore website, they are automatically connected to MatahariMall because the transaction flow at MatahariStore will be handled directly by MatahariMall.com, starting from content, payment, to delivery of goods. MatahariMall.com provides the best service facilities to support customers in shopping online safely and reliably with various ease of transactions, such as bank transfer, credit card with 0% installment, COD and O2O system (Online-to-Offline and OfflinetoOnline).

Meanwhile, Sogo Department Store owned by PT Mitra Adi Perkasa currently also has an e-commerce called MAPEMALL. As a leading brand, Sogo not only provides Sogo clothing and Sogo accessories for the fashion of its consumers, but also a variety of home appliances that will ease daily activities. In fact, there are attractive offers in the form of Sogo vouchers that allow



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customers to shop Sogo products more economically. Ordering Sogo products through online media is also available at MAPEMALL. Not only that, the payment method at MAPEMALL is also very easy through bank transfer, BCA Klikpay, or credit card. Customers can also make payments directly on the spot with the COD (Cash On Delivery) system which certainly makes it easier for consumers to get original and high quality products.

Of the two online department store sites, namely MDS and Sogo, Matahari Department Store, which uses the O2O system, has an advantage in the payment and collection system. O2O is a service that allows customers to physically pay for and then pick up products that they have ordered online. Customers can also make payments and pick up goods at: (1) Matahari Department Store of the customer's choice, (2) O2O Kiosk (Instant Pick Up), (3) E-locker, (4) POS Restan, (5) Indomaret Pick Up Point, and (6) E-Store. (Tedjakusuma et al., 2020).

With services that make it easier for consumers, it will certainly make it easier for a retail company to get consumer retention and loyalty. Competition between modern retail and traditional retail is increasingly unbalanced by the long opening hours of modern retail (especially minimarkets), even up to 24 hours. Other advantages of modern retail are comfortable conditions, cleanliness, elite impression, good service, and goods sold are cheap, complete, and of high quality. The next retail business competition occurs between fellow modern retail companies both in the same category and indirectly because they are in different categories. In terms of competition among traditional retailers, the research above states that in contrast to modern retailers who in determining their location always consider the number of consumers, accessibility and feasibility, for traditional retailers, location does not affect their daily sales turnover. Each traditional trader already has their own customers. The absence of a price agreement among traders creates competition among them, so they try in their own way to attract customers. (Tri Joko Utomo, 2010).

Another implementation of the role of consumer loyalty on customer retention in developing retail companies in the form of department stores in Indonesia is that with this loyalty, retail companies can compete with other retail businesses. With loyalty, of course, it will have an impact on customer retention, where consumers will choose the retail business to meet their daily needs. Competition between fellow department stores such as Sogo, Metro, Rimo Matahari, Ramayana, and Pojok Busana which continue to actively expand. The form of competition that occurs between fellow modern retail companies in the same category is in terms of the struggle for market segments, service systems, price competition, and product quality. Meanwhile, competition between modern retailers in different categories often becomes irrelevant because each has placed itself in a different market segment.

In addition, modern markets also face social issues such as alleged violations of zoning regulations, market monopoly practices, and several other issues. These violations certainly have a negative impact on the modern market. To dismiss these issues, modern markets are advised to increase compliance with established regulations. Regulations that have been made to regulate harmonization between modern market retailers and traditional retailers should be responded wisely by all related parties so that the government's goal of realizing harmonization between all parties involved in the retail industry in Indonesia can be realized. (Utami, 2017).

In a world of competition, when choices become unlimited, power moves from producers to consumers. So consumers become everything, because what is a business without consumers. That is why companies or producers need to reinvent the relationship with consumers. From not just knowing and understanding the needs of consumers, but producers need to enter into a deeper circle by creating intimacy (involvement) of consumers through polite and respectful relationships. This strategy is also carried out by PT Matahari Putra Prima, Tbk.

As happened at Matahari Department Store Java Mall, many customers who shop at Matahari have been registered as MCC members for at least one year. They are interested in shopping at Matahari and register as MCC members because there are so many rewards given by PT Matahari to its customers, as well as because of invitations from people around them. For them, being an MCC member is very beneficial, so they often shop at Matahari Department store. The average shopping intensity of customers at Matahari is at least two to three times a month with expenditure in each visit is at least one hundred thousand rupiah. Customer loyalty can occur by optimizing the relationship that occurs between the company and its customers, so that there will be an exchange of benefits between the customer and the company and vice versa. (Mizana, 2010).

Competition from the larger supermarket category, namely Alfa, Hero, Super Indo, Matahari and Renc 99 Market is also fierce. Similarly, competition between hypermarket giants such as Carrefour, Giant and Makro is equally fierce. It is not uncommon for them to have a conspicuous price war between them. For example, through mass media, banners or advertisements in catalogs. Competition between department stores is also fierce, with Sogo, Metro, Rimo Matahari, Ramayana and Pojok Busana all expanding aggressively. From the above research, it can be seen that similar forms of competition among modern retail companies are market segmentation, service systems, price competition, and product quality competition. However, competition

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between different categories of modern retail companies often becomes irrelevant, as each company positions itself in different market segments (Tri Joko Utomo, 2010). (Tri Joko Utomo, 2010).

### CLOSING

Based on theory, relevant articles, books or literature studies and discussions, it can be concluded that direct competition in the retail business occurs between modern and traditional retailers, between fellow modern retailers, between fellow traditional retailers, and plus competition between suppliers. Retail business competition that occurs between fellow modern retail companies occurs both in the same category and indirect competition because it is in a different category.

Competition is in a reasonable condition when it occurs between fellow modern retailers, between fellow traditional retailers, and between suppliers. However, imbalances occur in competition between modern and traditional retailers, because under certain conditions the victims are on the side of traditional retailers. Competition between suppliers is triggered by equal opportunities from many suppliers to supply their products to modern retail companies. The tightness of this competition is exacerbated by the great interest of the producers themselves to have their products sold through modern retail, namely to establish the existence of their products and brands in consumers from the target segment of a modern retail.

The role of consumer loyalty in customer retention in developing retail companies in the form of department stores in Indonesia, namely with this loyalty, a retail company can compete with other retail businesses. Loyalty definitely has an impact on customer retention, and consumers choose retail businesses for their daily needs. Similar forms of competition between modern retail companies include segmented market competition, service system competition, price competition, product quality competition and so on. Competition between department stores is also quite intense, such as Sogo Department Store, Metro, Matahari, Ramayana, etc. which continue to grow aggressively. From the above research, it can be seen that similar forms of competition among modern retail companies are market segmentation, service system, price competition, and product quality competition.

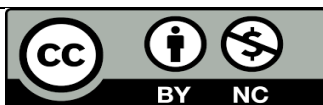
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## Analysis of the Relationship between Facilities, Learning Motivation, and Parental Involvement in Students' Digital Literacy in Junior High School



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**ABSTRACT:** This study aimed to (1) examine the relationship between facilities and students' digital literacy in junior high schools, (2) explore the association between learning motivation and students' digital literacy in junior high schools, (3) investigate the correlation between parental involvement and students' digital literacy in junior high schools, and (4) examine the relationship between facilities, motivation, parental involvement, and students' digital literacy in junior high schools. This research employed a quantitative descriptive approach with an ex post facto design. The subjects of this study were students of State Junior High School 4 Pakem (SMP Negeri 4 Pakem), Yogyakarta, Indonesia, in the seventh and eighth grades. The sampling used a random technique totaling 178 respondents. Data analysis involved correlation and multiple regression analyses. The results indicated the following: (1) there was a significant correlation between facilities and students' digital literacy in junior high schools, with a computed correlation coefficient of 0.407 and a significance value of 0.000 ( $p < 0.05$ ); (2) a significant correlation existed between students' learning motivation and their digital literacy in junior high schools, with a computed correlation coefficient of 0.449 and a significance value of 0.000 ( $p < 0.05$ ); (3) a significant correlation was found between parental involvement and students' digital literacy in junior high schools, with a computed correlation coefficient of 0.508 and a significance value of 0.000 ( $p < 0.05$ ); (4) there was a relationship between facilities, motivation, parental involvement, and students' digital literacy in junior high schools, as evidenced by the multiple regression analysis, which yielded a computed F-value of 29.693 and a significance value of 0.000 ( $p < 0.05$ ), with an R<sup>2</sup> value of 0.339. This implies that facilities, learning motivation, and parental involvement collectively contribute to 33.9% of students' digital literacy in junior high schools.

**KEYWORDS:** infrastructure, learning motivation, parental role, digital literacy

### INTRODUCTION

School-age children have the right to receive education. The success of education is not solely dependent on the role of teachers but also on the role of the family, especially parents. This is reinforced by the law outlining parents' obligations towards their children's education, namely the Indonesian Law Number 20 of 2003 concerning the National Education System. In Chapter IV, Article 7, clause 2 states that parents of school-age children must provide basic education for their children. Parental involvement entails supporting and fostering a spirit of learning in children's activities, both at school and at home, as an expression of their concern for their children's future. [1] The roles of parents in supporting academic achievement include (1) parents as educators; (2) parents as mentors; (3) parents as motivators; (4) parents as facilitators. Therefore, the role of parents is crucial in fostering the development and improvement of children's intelligence, and their contribution cannot be disregarded. [2]

In light of the current technological advancements and the ongoing Fourth Industrial Revolution, which brings changes to every aspect of human life and has profound impacts on social, cultural, economic, educational, and other spheres, the importance of digital literacy becomes paramount. It is crucial to equip children with the ability to discern and filter negative information obtained from the internet. This serves as a means of protecting children and creating a future of quality. Digital technology has become integral to their daily experiences, even among early-age children. It is highly likely that by entering kindergarten, children have already encountered various popular forms of digital communication. [3]

Digital literacy, touted as a new issue, has become an essential skill in the digital era for individuals of all ages, from children to parents. Reading literacy is no longer the sole literacy required by individuals; it also encompasses knowledge in utilizing and understanding information and communication technology, commonly known as the use of technological devices. The American Library Association's Digital Literacy Task Force defines digital literacy as using information and communication technologies to

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find, evaluate, create, and communicate information, which requires cognitive and technical skills. Digital literacy can be viewed from three perspectives: (1) discovering and consuming digital content, (2) creating digital content, and (3) communicating and sharing it. [4]

The ongoing Covid pandemic, which has lasted for 4 years, has impacted adults and children's growth and development. It urges parents to maximize their role in supporting and guiding their children at home. The issues that arise vary depending on the child's age stage. Preschool children will face different challenges compared to elementary school children, and similarly, elementary school children will have different issues compared to middle school (junior high school) students, and so on for high school students. One of the problems identified by school teachers for middle school students includes the digital divide, where not all children have equal access to technology and the internet.

### METHOD

The research method, in essence, is a scientific characteristic employed to obtain information for specific purposes and objectives. [5] This study adopts a quantitative descriptive research design with an ex post facto approach. Ex post facto, meaning "after the fact," involves data collection through surveys. Ex post facto research aims to identify causes that may explain changes in behavior, symptoms, or phenomena caused by an event, behavior, or factors that have influenced changes in the independent variables that have already occurred. [6] The survey research method is an investigation conducted to obtain facts from existing phenomena and to identify factual shortcomings. In line with the above explanation, this research positions facilities, learning motivation, and parental involvement as independent variables, while digital literacy is the dependent variable.

### Polulation and Reserach Sampel

The population refers to a group of subjects targeted for generalizing research findings. [7] The population in this study comprised active 7th and 8th-grade students from State Junior High School 4 Pakem (SMP Negeri 4 Pakem), with a total of 163 students in 7th grade and 159 students in 8th grade. A sample was a subset of the population that was selected as a data source and could represent the entire population (Susila & Suyanto, 2015).

The determination of the sample in this research was done using Random Sampling. Based on the Slovin formula calculation, the research sample consisted of 178 students.

### Data Collection Technique

The data collection instrument used in this research was a questionnaire to gather data on the availability of facilities and infrastructure, learning motivation, students' digital literacy, and parental involvement.

### Data Analysis

The purpose of conducting the test for analysis requirements is to determine whether the collected data meet the conditions for analysis. This test involves selected statistical techniques. The analysis requirements include testing for normality and multicollinearity. The following will be explained in detail:

Hypothesis testing in this research includes correlation and multiple regression analyses, as this study has three independent variables. Correlation analysis aims to test the relationship between each independent variable and the dependent variable. Hypothesis testing using the multiple linear regression method is necessary to determine the extent of the simultaneous relationship between the independent variables  $X_1$ ,  $X_2$ , and  $X_3$  on the group of dependent variables  $Y$ . [8]

## RESULTS OF DATA ANALYSIS

### Prerequisite Test

#### Normality Test

Normality testing is conducted to examine whether the data distribution of the variables used in the analysis follows a normal distribution. The normality test of data is performed using the Kolmogorov-Smirnov test.

**Table 1. Results of Normality Test**

Variabel	Kolmogorov-Smirnov Z	Sig.
Infrastruktur (X1)	1,109	0,171
Learning Motivation (X2)	1,245	0,090
Parental Role (X3)	1,003	0,267
Digital Literacy (Y)	1,318	0,062

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The normality test results for the facilities variable yielded a significance value of 0.171, for the learning motivation variable it was 0.090, for the parental involvement variable it was 0.267, and for the digital literacy variable it was 0.062. Since the significance values obtained from the normality tests for all research variables are greater than 0.05 ( $p > 0.05$ ), it can be stated that all the data used in this study follow a normal distribution.

### Multicollinearity Test

The multicollinearity test examines whether there is a strong correlation among the independent variables in the regression model. If such a correlation exists, it indicates the presence of multicollinearity issues. To detect multicollinearity, it is used Variance Inflation Factor (VIF) and Tolerance values. If the VIF value is above 10 or the tolerance value is below 0.1, it indicates the presence of multicollinearity. [9]

**Table 2. Results of Multicollinearity**

Variable	VIF	Tolerance	Conclusion
Infrastructure	1,145	0,873	no multicollinearity
Learning Motivation	1,712	0,584	no multicollinearity
Parental Role	1,769	0,565	no multicollinearity

The results of the multicollinearity test indicate that all independent variables, namely facilities, learning motivation, and parental involvement, have tolerance values above 0.1 and VIF values below 10. Therefore, it can be concluded that there is no multicollinearity in the regression model used in this study.

### Hypothesis testing

#### Hypothesis 1

**Table 3. Correlation Analysis on Hypothesis 1**

Variable	r count	r table (n=178)	Sig.	Ket
Infrastructure Digital Literacy	0,407	0,148	0,000	Positive Significant

The first hypothesis proposed in this study states, "There is a positive and significant relationship between facilities and students' digital literacy in junior high school." The correlation analysis yielded a computed correlation coefficient ( $r$ ) of 0.407 with a significance value 0.000. The  $r_{table}$  value for  $n = 178$  at a significance level of 5% is 0.148. Because the value of  $r_{count}$  is greater than  $r_{table}$  ( $0.407 > 0.148$ ) and the significance is less than 0.05 ( $p < 0.05$ ), it means that there is a positive and significant relationship between infrastructure and digital literacy in junior high school students, so the first hypothesis is accepted.

#### Hypothesis 2

**Table 4. Correlation Analysis on Hypothesis 2**

Variable	r count	r table (n=178)	Sig.	Ket
Learning motivation Digital Literacy	0,449	0,148	0,000	Positive significant

The second hypothesis proposed in this study states, "There is a positive and significant relationship between learning motivation and students' digital literacy in junior high school." The correlation analysis yielded a computed correlation coefficient ( $r$ ) of 0.449 with a significance value of 0.000. The  $r_{table}$  value for  $n = 178$  at a significance level of 5% is 0.148. Because the value of  $r_{count}$  is greater than  $r_{table}$  ( $0.449 > 0.148$ ) and the significance is less than 0.05 ( $p < 0.05$ ), it means that there is a positive and significant relationship between learning motivation and digital literacy of junior high school students, so the second hypothesis is accepted.

#### Hypothesis 3

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**Table 5. Correlation Analysis on Hypothesis 3**

Variabel	r count	r table (n=178)	Sig.	Ket
Parental role Digital literacy	0,508	0,148	0,000	Positive significant

The third hypothesis put forward in this study states, "There is a positive and significant relationship between the role of parents and digital literacy of junior high school students", the results of the correlation analysis show an  $r_{\text{count}}$  of 0.508 with a significance value of 0.000. The  $r_{\text{table}}$  for  $n = 178$  at a significance level of 5% is 0.148. Because the value of  $r_{\text{count}}$  is greater than  $r_{\text{table}}$  ( $0.508 > 0.148$ ) and the significance is less than 0.05 ( $p < 0.05$ ), it means that there is a positive and significant relationship between the role of parents and the digital literacy of junior high school students, so the third hypothesis accepted.

Hypothesis 4

**Table 6. Analysis Result of Multiple Regression**

Variable	Regression Koefisien	t count	Sig.	Explanation
Infrastructure	0,397	3,768	0,000	Significant
Learning motivation	0,224	2,205	0,029	Significant
Parental role	0,334	3,775	0,000	Significant
Constanta	: 17,406			
R <sup>2</sup>	: 0,339			
F count	: 29,693			
Sig.	: 0,000			

The fourth hypothesis of this study states, "There is a positive and significant relationship between infrastructure, learning motivation, and the role of parents with the digital literacy of junior high school students." The results of multiple regression analysis obtained a calculated F value of 29.693 with a significance of 0.000. Because the significance value is less than 0.05 ( $p < 0.05$ ), there is a positive and significant relationship between infrastructure, learning motivation, and the role of parents in the digital literacy of junior high school students, so hypothesis 4 is accepted. Thus the variables of infrastructure, learning motivation, and the role of parents are predictors of junior high school students digital literacy.

The analysis resulted in a coefficient of determination (R<sup>2</sup>) value of 0.339. This indicates that the combined influence of facilities, learning motivation, and parental involvement on digital literacy is 33.9%, while the remaining 66.1% is influenced by other factors not examined in this study. The magnitude of the influence of each research variable can be observed from their respective effective contributions.

## DISCUSSION

### *The Relationship between Infrastructure and Students' Digital Literacy in Junior High School*

The relationship between facilities and infrastructure and students' digital literacy in junior high school was examined. The correlation analysis revealed a significant positive relationship ( $r = 0.407$ ,  $p < 0.05$ ) between facilities and infrastructure and students' digital literacy. This indicates that the availability of adequate facilities and infrastructure positively contributes to developing students' digital literacy skills in the context of junior high school. The results suggest that providing a conducive learning environment with appropriate technological resources can enhance students' digital literacy capabilities.

The relationship between facilities and infrastructure and students' digital literacy can be explained by the availability of adequate resources, which facilitates and simplifies the mastery of digital literacy skills among students. In this case, when students are provided with suitable facilities and infrastructure, it becomes easier for them to learn, acquire knowledge, broaden their understanding, and enhance their skills in digital literacy. As a result, students' digital literacy is more easily achieved with the availability of such facilities and infrastructure. Facilities and infrastructure play a significant role in improving learning outcomes. [10]

The presence of facilities and infrastructure also supports the learning process. The availability of learning facilities ensures that educational goals are achieved smoothly, systematically, effectively, and efficiently. [10] Students with complete facilities and infrastructure, such as ICT devices and reliable internet connectivity, can easily use and utilize these tools for learning. The learning process conducted by students can proceed smoothly and efficiently, leading to the development of better digital literacy skills.

## **Analysis of the Relationship between Facilities, Learning Motivation, and Parental Involvement in Students' Digital Literacy in Junior High School**

The findings of this study are supported by previous research, which found that the availability of facilities and infrastructure determines the success of digital literacy in online learning. [11] The consistency between the findings of this study and previous research further strengthens the notion that adequate facilities and infrastructure are essential factors in fostering students' digital literacy. The availability of appropriate facilities and infrastructure facilitates students in improving their digital literacy abilities, expanding their knowledge, and developing digital literacy skills. This enables them to effectively and efficiently utilize ICT as a valuable learning resource.

### ***The relationship between students' learning motivation and their digital literacy in junior high school***

The research data analysis yielded results that indicate a significant relationship between students' learning motivation and their digital literacy in junior high school. This is supported by the correlation analysis, which showed a computed correlation coefficient ( $r$ ) of 0.449 with a significance value of 0.000 ( $p < 0.05$ ). These findings suggest that learning motivation is significantly related to students' digital literacy. The positive relationship implies that higher levels of learning motivation are associated with better-developed digital literacy skills.

The relationship between students' learning motivation and digital literacy can be explained by the fact that learning motivation drives students to exert effort and work harder to achieve their goals. In this context, students with strong motivation are more likely to actively develop their digital literacy abilities and enhance their digital skills. Motivation can be defined as the driving force or desire that compels individuals to engage in specific activities to achieve a particular goal. [12]

Students with learning motivation tend to have a keen interest and desire to develop their digital literacy. The interest and desire they have to make the learning activities more enjoyable as they align with their personal interests. [13] Furthermore, students' learning motivation can cultivate an awareness of the importance of learning. This awareness prompts students to engage in learning activities seriously. When activities are approached seriously and with determination, optimal results are more likely to be achieved. Students' awareness of the need to develop their abilities and enhance their digital literacy skills makes it easier for them to accomplish their goals. Motivation is the key to success in learning activities. [12]

These research findings are supported by previous studies that also found a relationship between motivation and the application of digital literacy. [14] The consistency between these findings and previous research suggests that learning motivation is crucial in achieving students' digital literacy. Learning motivation is a driving force, motivator, and determinant that directs students' learning activities toward better digital literacy outcomes. Learning motivation makes students more persistent, serious, and committed to their efforts in achieving their desired goal of acquiring strong digital literacy skills.

### ***The Relationship between Parental Role and Students' Digital Literacy***

The study's results showed a relationship between the role of parents and the digital literacy of junior high school students. It is evident from the results of the correlation analysis that the  $r$  count is 0.508 with a significance value of 0.000 ( $p < 0.05$ ). These results indicate that the role of parents is a significant factor in students' digital literacy.

Parental involvement is related to students' digital literacy because parents have a role as educators. As educators, parents play a role in transferring knowledge to their children, including knowledge related to digital literacy. The knowledge transfer process from parents to students supports the development of digital literacy. As educators, parents provide and transfer knowledge to their children. [14]

Parents also fulfill the role of motivators. As motivators, parents encourage and motivate students in their learning journey and in improving their digital literacy skills. Parents constantly accompany their children, encourage them when students feel demotivated, and foster progress in their learning. Such parental involvement supports the development of digital literacy.

The role of parents to students' digital literacy is also related to their role as guides. Parents guide and direct students throughout the learning process. The guidance provided by parents helps students focus on developing their digital literacy skills. Parents also provide guidance when their children misuse information and communication technology (ICT), improving their children's ability to utilize ICT effectively. Every mistake is guided and directed so children have better digital literacy skills. Parents play a key role in guiding students as they have a close relationship with them, allowing them to monitor their behavior and development. [15]

The findings of this study align with previous research, which found a positive and significant relationship between digital literacy and the combined role of parents in fostering students' critical thinking skills in junior high school. [16] The consistency between these findings and previous research indicates that parents have an important role in shaping students' digital literacy. Parents who fulfill their role effectively support students' learning activities, making them more effective and focused, thus facilitating the achievement of digital literacy skills.



## Analysis of the Relationship between Facilities, Learning Motivation, and Parental Involvement in Students' Digital Literacy in Junior High School

### *The Relationship of Facilities and Infrastructure, Learning Motivation, Parental Involvement, towards Students' Digital Literacy In Junior High School*

The study results showed a relationship between infrastructure, learning motivation, and the role of parents with the digital literacy of junior high school students. As evidenced by the results of multiple regression analysis, the  $F_{\text{count}}$  was 29.693 with a significance of 0.000 ( $p < 0.05$ ). The variables of infrastructure, learning motivation, and the role of parents are significantly related to the digital literacy of junior high school students.

The combined influence of facilities and infrastructure, learning motivation, and parental involvement on students' digital literacy is 33.9%, with facilities and infrastructure contributing 10.2%, learning motivation contributing 8%, and parental involvement contributing 15.7%. Based on these results, it is evident that parental involvement has the greatest contribution.

Facilities and infrastructure, learning motivation, and parental involvement have been found to have a significant relationship with students' digital literacy. Facilities and infrastructure, and parental involvement are external factors that influence the development of students' digital literacy. Adequate facilities and infrastructure are crucial in achieving digital literacy, as they provide the necessary resources and tools for digital learning. Parental involvement, on the other hand, contributes to the development of digital literacy through various roles, including that of an educator, motivator, facilitator, and guide in enhancing students' digital literacy skills. Learning motivation, as an internal factor, serves as a driving force and determines the direction of students' learning as they develop their digital literacy.

Students' digital literacy can be easily achieved when these three factors are adequately and ideally fulfilled. This emphasizes the importance of providing students with adequate facilities and infrastructure, high motivation, and effective parental involvement to promote the development of digital literacy. The success of learning is influenced by interconnected factors, including the students themselves, instrumental elements such as facilities and infrastructure, and environmental factors, with each input mutually influencing educational success. [17] Among these factors, student motivation, instrumental factors such as facilities and infrastructure, and the environmental factor of parental involvement all play a significant role in shaping students' digital literacy.

### CONCLUSION

Based on the results of data analysis and discussion that has been carried out, the conclusions of this study are as follows (1) There is a relationship between infrastructure and digital literacy of junior high school students. The results of the correlation analysis showed that the  $r$  value was 0.407 with a significance value of 0.000 ( $p < 0.05$ ). (2) There is a relationship between students' learning motivation and the digital literacy of junior high school students. The results of the correlation analysis showed that the  $r_{\text{count}}$  was 0.449 with a significance value of 0.000 ( $p < 0.05$ ). (3) There is a relationship between the role of parents and the digital literacy of junior high school students. The results of the correlation analysis showed that the  $r_{\text{count}}$  was 0.508 with a significance value of 0.000 ( $p < 0.05$ ). (4) There is a relationship between infrastructure, learning motivation, and the role of parents in the digital literacy of junior high school students. The results of multiple regression analysis obtained  $F_{\text{count}}$  of 29.693 with a significance of 0.000 ( $p < 0.05$ ).

Based on the findings, it recommends that schools should facilitate students with ICT infrastructure, internet connectivity, and school policies that support students in developing their digital literacy. For parents of students, it is suggested to maximize the role of parents in developing their child's digital literacy by guiding, mentoring, and monitoring their child's use of ICT to achieve optimal digital literacy. For students, it is recommended to make the most of the available ICT infrastructure to develop their digital literacy. For future researchers, it is suggested to investigate other variables that influence digital literacy to complement the findings of this study.

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## Inheritance Rights to Freehold Land for Children with Dual Citizenship Outside of Mixed Marriage



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**ABSTRACT:** Inheritance is a legal consequence of a legal event in the form of death, which is explained in Article 830 of the Criminal Code. It is also explained that every person who has the right to inherit without distinction of male or female, or who was first born with the same amount for each heir, is stated in Article 852 Paragraphs (1) and (2) of the Criminal Code. In addition, if the child obtains the status of an Indonesian citizen from the *Ius Sanguinis* principle and obtains the status of a foreigner from the *Ius Soli* principle, it does not cause the child to become a dual nationality child because the Citizenship Law does not recognize the existence of dual citizenship as stated in the general explanation. However, the Citizenship Law provides an exception for children with dual citizenship. The granting of an exception to dual citizenship lasts until the child has chosen a nationality. The election of citizenship is at the age of 18 years or has been married and an extension of time for 3 years based on Article 6 of the Citizenship Law. Dual citizenship status does not abolish the right to inherit children from both parents, but there are restrictions on the right to inherit in the form of property rights. Legal protection for children with dual citizenship status in their inheritance rights can be assisted in the management by a guardian. The purpose of this study is as one of the requirements for obtaining a Masters of Notary degree at the Postgraduate Notary Masters Study Program at Warmadewa University. This thesis research method uses normative legal research, which uses two types of approaches, namely the statutory approach, and the conceptual approach.

**KEYWORDS :** Dual Citizenship, Property Rights, Inheritance, Transfer of Land Rights.

### 1. INTRODUCTION

There are two types of citizenship status, namely, *ius soli* and *ius sanguinis*. The principle of *ius soli* is the principle of place of birth, meaning that a person's citizenship status is determined by his place of birth. The principle of *ius sanguinis* is the principle of heredity or blood relations, meaning that a person's citizenship is determined by his parents.<sup>1</sup>

Rules regarding citizenship status are very important, because it should not happen that an individual has *Apatride* or *Bipatride* status. *Apatride* has the understanding that a person does not have citizenship, while *Bipatride* is someone who has 2 (two) citizenships experienced by people born to parents whose country adheres to the *ius sanguinis* principle in the territory of a country that adheres to the *ius soli* principle.

The citizenship status has an influence on the inheritance status that applies in Indonesia as an heir. The factor that causes a person to have dual citizenship is that parents have mixed marriages where an Indonesian citizen marries someone who is a foreign national. The occurrence of dual citizenship status of a child does not only occur because of mixed marriages. The dual citizenship status of a child can also occur because of a marriage between 2 (two) Indonesian citizens. These two Indonesian citizens married according to Indonesian law, but when they had children, the child was born in a country that adheres to *ius soli*, for example America.

The United States adheres to *ius soli*, namely a person's citizenship status is determined by his or her place of birth, while the Indonesian state adheres to *ius sanguinis*, namely a person's citizenship is determined by blood or ancestry. This causes the child to have dual citizenship, namely an Indonesian citizen and an American citizen.

The child with dual citizenship can inherit the assets of his parents who are Indonesian citizens, namely land ownership rights, then at the 18-year time limit the child must choose to become an Indonesian citizen in order to have his rights in accordance with the legal provisions in force in Indonesia.<sup>2</sup> If both parents have died when the child is not yet 18 (eighteen) years

<sup>1</sup> Ani Sri Rahayu, 2015, *Pendidikan Pancasila dan Kewarganegaraan*, Bumi Aksara, Jakarta, hal. 110.

<sup>2</sup> I Putu Gede Bayu Sudarmawan, I Gusti Bagus Suryawan dan Luh Putu Suryani, 2020, *Status Kewarganegaraan Anak Hasil Perkawinan Campuran yang Lahir Pasca berlakunya Undang-Undang Nomor 12 Tahun 2006 tentang Kewarganegaraan*

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old, it is possible to obtain restrictions on obtaining property rights until the age of 18 (eighteen) years or have married to determine citizenship.

There is a conflict of norms regarding inheritance in the form of property rights for children with dual citizenship who are not yet 18 (eighteen) years old by referring to the applicable laws and regulations, namely Article 21 paragraph (4) prohibiting someone who has foreign citizenship in addition to Indonesian citizenship or dual citizenship. to own land with property rights, while Article 6 paragraph (1) and paragraph (3) of the Citizenship Law stipulates that a person who has foreign citizenship besides Indonesian citizenship or dual citizenship can relinquish his foreign citizenship after being 18 (eighteen) years old or married.

There is legal uncertainty for children with dual citizenship in obtaining property rights inheritance. This is because the child is faced with 2 (two) choices of citizenship so that there is an opportunity or possibility for the child to choose a foreign citizenship. Based on the UUPA, if the child chooses a foreign citizenship, namely the United States, the child cannot maintain an inheritance in the form of property rights. As someone who cannot be the subject of Property Rights, the child must transfer the Property Rights in the form of land and/or buildings obtained from the inheritance of his parents.

Based on the description, there are 2 (two) problem formulations. How is the legal certainty of the transfer of property rights to land for children with dual citizenship status in terms of inheritance? What is the legal protection for children with dual citizenship status in terms of their inheritance? The purpose of the research is to contribute ideas in the form of concepts, principles, and theories related to inheritance rights to land ownership rights for children with dual citizenship status. The theoretical benefit is to analyze juridically regarding the legal certainty of inheritance rights to land for children with dual citizenship status. The practical benefit is to provide answers based on the thoughts of researchers regarding the legal certainty of inheritance rights over land for children with dual citizenship.

## **2. METHODS**

The research method used is normative juridical, namely research based on library materials or secondary materials as the basic material to be studied by tracing the laws and regulations related to the issues discussed. The approach in research is a statute approach, and a conceptual approach. The statute approach is an approach that is based on statutory provisions to understand the hierarchy, and the principles in statutory regulations. The conceptual approach is based on the views and doctrines based on the opinions of experts and legal experts which are implemented on the problems being studied. The conceptual approach does not move from positive legal regulations.

The legal materials used are primary legal materials and secondary legal materials. Primary legal materials are binding legal materials consisting of applicable laws and regulations and other regulations that support research, while secondary legal materials are legal materials in the form of literature books, scientific notes, scientific works and various applicable print media. and is related to the issue under discussion.

The technique of collecting legal materials is by means of library research, namely through library research in the form of determining secondary data sources, identifying secondary data by quoting or recording and then analyzing the legal materials obtained in order to determine relevance to the problem formulation. This study takes place in a library or a place where various sources of legal data are needed.

The theory used is legal certainty is a guarantee for children with dual citizenship to obtain inheritance rights in the form of property rights, the importance of legal certainty theory for children with dual citizenship to maintain inheritance rights, so it is supported by the theory of legal protection and the theory of legal certainty. Legal protection is a protection given to children with dual citizenship to maintain their inheritance rights. Then the theory of legal justice related to justice for children with dual citizenship to be entitled to inheritance rights in the form of property rights.

## **3. RESULT AND DISCUSSION**

### **LEGAL ASSURANCE OF TRANSFER OF PROPERTY RIGHTS TO LAND FOR CHILDREN OF DWI CITIZENSHIP IN THE MATTER OF INSTRUCTION**

Article 1 of Law Number 1 of 1974 concerning Marriage (Marriage Law) defines marriage as an inner and outer bond between a man and a woman as husband and wife with the aim of forming a happy and eternal family or household based on the One Godhead. The construction of the Marriage Law provides provisions for the possibility of marriages being carried out outside Indonesia as stated in Article 56 of the Marriage Law. On the other hand, the Marriage Law also provides provisions for mixed marriages according to Article 57 of the Marriage Law which emphasizes the subject of marriage. Mixed marriages are marriages

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between 2 (two) people who in Indonesia are subject to different laws, due to differences in citizenship because one party is a foreign citizen, and one party is an Indonesian citizen.

Marriage outside Indonesia or within Indonesia of 2 (two) Indonesian Citizens (WNI) can give birth to a child with dual citizenship status if the child is born in a country that adheres to the principle of *Ius Soli* citizenship. *Ius Soli* as a principle based on place of birth even though the parents are Indonesian Citizens (WNI) who adhere to *Ius Sanguinis*, causing the child to have dual citizenship. The dual citizenship position can make it difficult to carry out birth registration for children, granting constitutional rights by both countries, and obstacles related to legal protection in obtaining inheritance when the testator has died.

Historically, the idea of citizenship (citizenship) comes from the civilization of Ancient Greece, the Roman Republic. The terms polis, polites, and politeia are translated as state, citizen, and constitution which cannot be separated from one another. It is said that "to understand what a constitution (politeia) is, we must inquire into the nature of the city (polis); and to understand that since the city is a body of citizens (politeia) we must examine the nature of citizenship".<sup>3</sup>

Derek Heater defines citizenship as a form of social political identity (a form of social political identity) of a person whose existence is related to developing time.<sup>4</sup> Di samping itu, dalam buku III yang berjudul *The Theory of Citizenships and Constitutions*, Aristoteles menerangkan bahwa "*citizenship is not determined by residence, or by merely having access to the courts of law. Rather a citizen is one who permanently shares in the administration of justice and the holding of office*".<sup>5</sup>

Article 1 number 2 of the Citizenship Law defines citizenship as all matters relating to citizens. In line with this, Article 1 point 1 of the Citizenship Law defines a citizen as a citizen of a country that is determined based on statutory regulations. The existence of citizenship is quite important as an individual identity, but in practice it is possible for a person to have dual citizenship (bipatride) or have no citizenship (apatride).<sup>6</sup> Dual citizenship can be caused by the principles adopted by a country in determining citizenship. Each country has the authority to determine the principle of citizenship. The principle of citizenship is divided into 2 (two), namely:<sup>7</sup>

1. The principle of birth (*Ius Soli* or law of the blood) is the determination of citizenship status based on a person's place or area of birth. This principle is the principle that was first recognized with the assumption that someone born in a country area automatically and logically becomes a citizen of that country.

2. The principle of descent (*Ius Sanguinis* or law of the soil) is a guideline for citizenship based on region or descent.

The principle of citizenship can give birth to citizenship status problems, including:<sup>8</sup>

1. Apatride, ie a person does not get citizenship because the person was born in a country that adheres to *Ius Sanguinis*;
2. Bipatride, namely a person will get dual citizenship if he comes from parents whose country adheres to *Ius Sanguinis*, while being born in a country that adheres to *Ius Soli*;
3. Multipratride, namely someone who has more than 2 (two) citizenships, namely a person (resident) who lives on the border of two countries.

Article 4 letter I of the Citizenship Law regulates that Indonesian citizens are children born outside the territory of the Republic of Indonesia to an Indonesian citizen father and mother who because of descent from the country where the child was born gives citizenship to the child concerned, it is concluded that the child is a citizen of the Republic of Indonesia. Indonesia. Furthermore, the general explanation states explicitly that basically the Citizenship Law does not recognize dual citizenship (bipatride) or statelessness (apatride).

The statement basically in the quote sentence is an exception as a manifestation of the principle of limited dual citizenship. With this exception, children with dual citizenship have the opportunity to determine their choice of citizenship in accordance with Article 6 paragraph (1) of the Citizenship Law. When a child is 18 (eighteen) years old or has been married, it is obligatory to determine his nationality. Freedom of choice in Article 6 paragraph (1) of the Citizenship Law with an age limit of 18 (eighteen) years or already married is a form of legal certainty and justice. In this case, it does not cause the loss of state constitutional rights, so that the child still has constitutional rights of citizenship foreign.

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<sup>3</sup>Winarno, 2015, *Pemikiran Aristoteles Tentang Kewarganegaraan dan Konstitusi*, (Online), Vol. 21, No. 1, (<https://media.neliti.com/media/publications/5100-ID-pemikiran-aristoteles-tentang-kewarganegaraan-dan-konstitusi.pdf>, diakses 9 Juli 2021)

<sup>4</sup> *Ibid.*

<sup>5</sup> Mukhamad Murdiono, 2018, *Pendidikan Kewarganegaraan Global: Membangun Kompetensi Global Warga Negara Muda*, Uny Press, Yogyakarta, (Online), (<http://staffnew.uny.ac.id/upload/132304487/penelitian/PKN%202.pdf>), hal. 1.

<sup>6</sup> Rokilah, 2017, *Implikasi Kewarganegaraan Ganda Bagi Warga Negara Indonesia*, (Online), Vol. 1, No. 2, (<https://e-jurnal.lppmunsera.org/index.php/ajudikasi/article/download/497/559/>, diakses pada 9 Juli 2021).

<sup>7</sup> *Ibid.*

<sup>8</sup> *Ibid.*

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Land in a juridical sense according to the UUPA is the surface of the earth, while land rights are rights to the earth's surface, which are limited, with two dimensions in length and width. Land rights are rights that authorize the holder of the right to use the land and/or take benefits from the land he is entitled to.<sup>9</sup> Land rights can be granted to individuals or legal entities. Individual rights to land are rights that authorize the holder of the right to use, in the sense of controlling, using, and/or taking certain land benefits.<sup>10</sup> The basis for granting land rights is contained in Article 4 paragraph (1) of the UUPA, namely "On the basis of the right of control from the state as referred to in Article 2, it is determined that there are various types of rights on the surface of the earth, called land, which can be given to and owned by people. -people, either alone or together with other people and legal entities".

Types of land rights are regulated in Article 16 of the LoGA, Article 53 of the LoGA, and in Government Regulation No. 40 of 1996 concerning Cultivation Rights, Building Use Rights, and Land Use Rights. There are various types of land rights, namely Ownership Rights, Business Use Rights (HGU), Building Use Rights (HGB), Use Rights (HP), Rental Rights for Buildings, Land Clearing Rights, Forest Products Collecting Rights, Pawn Rights (Pledged Rights). Land), Profit Sharing Business Rights (Profit Sharing Agreement).

Based on Article 21 of the UUPA, those who can control Property Rights are Indonesian Citizens (WNI), so that Foreign Citizens (WNA) cannot have Property Rights within the territory of the State of Indonesia. This creates legal problems if a dual nationality child who is not yet 18 years old or unmarried gets an inheritance in the form of property rights. Bearing in mind that Article 6 paragraph (1) and paragraph (3) of the Citizenship Law provides the authority to choose one nationality with a certain age limit.

The transfer of ownership rights based on Article 20 paragraph (2) of the BAL can be transferred and transferred to another party. Switching means the transfer of ownership rights to land from the owner to another party due to a legal event.<sup>11</sup> Legal events can be in the form of birth, marriage, and death so that in this case what is meant is a legal event in the form of death. With the death of the property rights can be transferred from the heir to the heirs.

Transferred or transfer of rights means the transfer of ownership rights on land from the owner to another party because there is a legal action. Legal actions can be in the form of buying and selling, leasing, exchanging, grants, and others. The party entitled to take legal action is the rightful owner of the holder of land rights.

Article 830 of the Criminal Code states that inheritance only takes place due to death. Death as a legal event is an attempt to obtain inheritance from the heir to the heirs. There are 3 (three) elements of inheritance in the Criminal Code as an absolute requirement for an inheritance event to occur. Elements of inheritance include heirs (erflater), namely heirs or people who die and leave property to others, heirs or heirs, namely people who replace the heir in his position of inheritance, either in whole or in part, and inheritance (nalatenschap). namely all the assets left by the heir left by the heir in the form of all his debts.<sup>12</sup>

The requirement to become an heir is to have the right to the inheritance of the testator as a legal child or child out of wedlock (hereinafter referred to as ALK) is regulated in Article 832 of the Criminal Code, heirs have existed since the testator died according to Article 2 in conjunction with Article 836 of the Criminal Code, and the heirs are not included in the person who is declared undeserved, incompetent or refuses inheritance.<sup>13</sup> Based on this, the child has fulfilled the element as an heir, but in the case of inheritance in the form of property rights, the inheritance of the child is in conflict with the provisions of Article 21 of the UUPA. The UUPA stipulates that only Indonesian citizens and Indonesian legal entities may be subject to Property Rights holders. If the child is 18 (eighteen) years old or has married during the dual citizenship period and has not yet chosen his citizenship, then based on Article 21 paragraph (4) of the UUPA, the child must immediately choose or within 1 (one) year the land becomes state land. .The Citizenship Law which regulates dual citizenship is in conflict with Article 21 paragraph (4) of the UUPA that children with dual citizenship cannot have property rights. In addition to the child being incapable of obtaining property rights, the child also cannot be the subject of the property rights holder for citizenship status. The prohibition norm in Article 21 paragraph (4) of the LoGA expressly prohibits foreigners and dual citizenship from controlling property rights which is a reflection of the principle of nationality in the LoGA. If you choose to become a foreign citizen, it has become clear that you cannot obtain land with the status of property rights based on Article 21 paragraph (1) and Article 21 paragraph (3) of the BAL.

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<sup>9</sup> Urip Santoso, 2012, *Hukum Agraria: Kajian Komprehensif*, Jakarta, Kencana, hal. 84.

<sup>10</sup> *Ibid*, hal. 83.

<sup>11</sup> *Ibid*, hal. 93.

<sup>12</sup> Ellyne Dwi Poespasari, Soelistyowati, Erni Agustin, Oemar Moechthar, 2020, *Kapita Selekta Hukum Waris Indonesia*, Prenadamedia Group, Jakarta, hal. 13.

<sup>13</sup> *Ibid*, hal. 19.

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Dual citizenship status does not abolish the right to inherit children from both parents, but there are restrictions on the right to inherit in the form of property rights. The certainty of obtaining inheritance for children is regulated based on Article 852 of the Criminal Code, so that even though they have dual citizenship status, they are still entitled to inherit. This is a form of certainty and justice for children with dual citizenship to continue to inherit even though it is limited to obtaining inheritance in the form of property rights.

Children with dual citizenship who are not yet 18 (eighteen) years old or not yet married, are subjects who cannot obtain property rights due to dual citizenship status and incompetence due to age. For the child's incompetence, all legal actions need to be carried out with the appointment of a guardian in accordance with Article 51 of the Marriage Law. The existence of a guardian to carry out legal actions initially is to obtain a Certificate of Inheritance (SKW). Certificate of Inheritance is a strong evidence of the existence of a transfer of rights to an inheritance from the heir to the heirs, meaning that there has been a transfer of ownership of the inheritance from the ownership of the heir to the joint ownership of the heirs in accordance with the number of heirs.<sup>14</sup>

Based on Article 111 paragraph (1) letter c of the Regulation of the State Minister of Agrarian Affairs/Head of the National Land Agency Number 3 of 1997 concerning Government Implementation Provisions Number 24 of 1997 concerning Land Registration, it stipulates that proof of inheritance for Indonesian citizens of Chinese descent is a certificate of inheritance rights from Notary.

In needing the services of a Notary for the sake of a Certificate of Inheritance, based on Article 39 paragraph (1) of Law Number 30 of 2004 concerning the Position of a Notary (hereinafter referred to as UUJN) it stipulates that the appearer must be at least 18 (eighteen) years old or married. This means that incompetent children cannot appear before a Notary, so they need a guardian. The guardian can be appointed and determined by the Court.

The purpose of the guardian is to be responsible for the child's personal and property, so that in the management of the guardian he can take all legal actions against the child's inheritance. In this case the guardian is responsible for the inheritance of the child until he is 18 (eighteen) years old or has married. Furthermore, if the child is capable and can carry out legal actions, then the control of the property is with the child.

After a child with dual citizenship can choose a citizen, either an Indonesian citizen (WNI) or a foreign citizen (WNA), the legal consequences for the chosen citizenship will apply. If you choose to be an Indonesian citizen, you can inherit the right to land with the status of Hak Milik because it has fulfilled the requirements as a right holder, while if you choose a foreign citizenship, you are still entitled to inherit from your parents, but cannot control the Hak Milik.

The limitation of property rights is a manifestation of the principle of nationality of the UUPA as stated in Article 21 paragraph (1) vide Article 1 paragraph (2) of the UUPA as legal certainty that only Indonesian citizens (WNI) can have property rights over land in Indonesia, whether earth, water, or land. and space of the Indonesian nation and as a national wealth.

Legal protection for children who choose foreign citizenship in terms of inheritance can take legal actions against inheritance. Based on Article 21 paragraph (3) of the BAL, it is stated that foreigners who obtain property rights due to inheritance are obliged to relinquish the rights within 1 (one) year from obtaining the rights, but if within that time they are not released then by law it becomes state land. Legal actions that can be carried out within 1 (one) year of ownership of the Property Rights can be by buying and selling. Buying and selling is an effort to transfer rights from the holder of the Property Rights to the prospective holder so as to eliminate the rights of the old holder. The sale and purchase has the legal consequence of annihilating the ownership of the old holder to become the new owner, so that apart from a transfer in the form of a sale and purchase, a dual nationality child who has inherited a Hak Milik can make an inheritance by going to a Notary with the assistance of a guardian and changing the Ownership Rights into Hak Guna Usaha.

In the theory of justice, justice is a value, because it is abstract so it has many meanings and connotations. In relation to the concept of justice, it can be interpreted as follows:<sup>15</sup>

- A. To be righteous and honest;
- B. Impartiality, a fair representation of the facts
- C. Be true (correct, right)

Article 27 of the LoGA stipulates that property rights can be annulled if:

- a. The land falls to the State:
  1. Due to the revocation of rights under Article 18;

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<sup>14</sup> J. Satrio, 1998, *Waris Tentang Pemisahan Boedel*, Citra Aditya Bakti, Bandung, hal. 227.

<sup>15</sup> Farkhani, Elviandri, Sigit Sapto Nugroho, Moch. Juli Pudjioo, 2018, *Filsafat Hukum; Merangkai Paradigma Berfikir Hukum Post Modernisme*, Kafilah, Solo, hal 101.

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2. Due to voluntary surrender by the owner;
  3. Due to neglect;
  4. Due to the provisions of Article 21 paragraph (3) and Article 26 paragraph (2);
- b. The land is destroyed.

In this case, Article 27 of the LoGA does not explicitly state that based on the child's dual citizenship status, the Property Rights can be abolished, but the construction of the abolition of Property Rights can be traced based on Article 21 paragraph (4) of the UUPA which states that a person other than an Indonesian citizen or has a foreign nationality (in this includes dual citizenship) then cannot have property rights and Article 21 paragraph (3) of the LoGA applies. It should be noted that Article 21 paragraph (3) of the BAL provides a stipulation that if a foreigner owns land with the status of Hak Milik and is not transferred, it will be deleted and become state land. It is also concluded that the property rights for children with dual citizenship will be removed as state land in accordance with the provisions of the UUPA.

### LEGAL PROTECTION AGAINST CHILDREN DUAL CITIZENSHIP IN THE EVENT OF INHERITANCE OWNED

Legal actions are actions of legal subjects that are carried out intentionally to give rise to rights and obligations, these actions also cause consequences that are regulated by law and these consequences are desired by the legal subject.<sup>16</sup> A new legal act can be said to occur if there is a statement of will. Statements of will that cause legal consequences as regulated in laws and regulations are not bound to a certain form because they can be stated expressly through writing, speech, or gestures (*gerben*).

Basically, legal actions are divided into 2 (two) namely unilateral legal actions where it is carried out by only 1 (one) legal subject, such as Article 875 of the Criminal Code which regulates wills or Article 1666 of the Criminal Code which regulates grants. The next is a legal act carried out by two or more parties where the parties have an equal portion of legal rights and obligations (reciprocal relationship) as Article 1457 of the Criminal Code concerning buying and selling.<sup>17</sup>

In addition, there are also actions that are not legal acts, as explained above, the statement of will is a limitation for legal actions to occur. So if the act is not desired by the legal subject, then it can be said that it is not a legal act.<sup>18</sup>

What is not a legal act is divided into 2, namely those that are not prohibited, such as "Zaakwaarneming" which is an act of taking care of the interests of others without being asked as regulated in Article 1354 of the Criminal Code, or "Onverschuldigde" namely people who pay debts to other people because they think they have debts that are too high. actually nothing is regulated in Article 1359 of the Criminal Code. The second is not a prohibited legal act (*Onrechtmatige daad*), namely, an act that causes harm to another person so that the guilty actor is obliged to provide compensation for the consequences, which are regulated in Article 1365 to Article 1380 of the Criminal Code. Acts against the law are not only acts that are prohibited by legislation but are also prohibited by unwritten laws that apply in society.<sup>19</sup>

A legal act is based on the validity as the element of the validity of the agreement refers to Article 1320 of the Criminal Code with one element of competence. A person who is incompetent for a certain legal action has legal consequences that can be canceled, so that one party can demand the cancellation of the agreement and cause loss to one of the parties. Therefore, an incompetent child needs a guardian to represent all legal actions carried out. Guardianship (*Voogdij*) comes from the word guardian which means another person as a substitute for parents who are legally required to carry out supervision and represent children who are not yet mature or have reached puberty. So that guardianship can be interpreted as a substitute parent for a child who is not yet capable of carrying out a legal act.

In line with this, Indonesian law defines guardianship as the authority to carry out legal actions for the interests and rights of children whose biological parents have died or are unable to take legal actions or are also interpreted as legal protection given to a child who is not yet an adult or has never been born. marriages that are not under parental control.<sup>20</sup>

In general, there is only one guardianship except in the case that a mother with widow status remarries, her husband is called *medevogd*.<sup>21</sup> Guardianship in law is when one of the parents of a child who is not yet an adult dies and then based on the law the other parent who has lived the longest automatically acts as the sole guardian of the child.

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<sup>16</sup> R.Soeroso, 2011, *Pengantar Ilmu Hukum*, Sinar Grafika, Jakarta, hal. 35.

<sup>17</sup> *Ibid*.

<sup>18</sup> *Ibid*, hal. 293 .

<sup>19</sup> *Ibid*, hal. 294.

<sup>20</sup> Elita Savira, Sihabuddin, Abdul Rachmad Budiono, *Penetapan Perwalian Anak Yang Diminta PPAT Sebagai Syarat Pembuatan Akta Jual Beli Hak Atas Tanah*, 2017, (Online), <http://hukum.studentjournal.ub.ac.id/index.php/hukum/article/view/2190/1400>, diakses pada 3 Agustus 2021.

<sup>21</sup> *Ibid*.



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In practice, it is possible for a person to have neither parents nor guardians, so the judge can appoint through a court order a guardian at the request of certain parties who have an interest. The exception in this case is if the parents during their lifetime have made a will (testament) to appoint or appoint a guardian for their child, it is called guardianship through a will.<sup>22</sup> Based on the description of the case, the family of the heirs can apply for the determination of guardianship of minors (child custody). The appointment of a guardian is something that cannot be missed because the guardian is obliged to take care of the child who is under his guardianship and manage the child's property as well as possible by respecting the religion and belief of the child. The guardian has the obligation to maintain all property belonging to the child, including property resulting from parental inheritance as stated in Article 51 paragraph (3) and (5) of the Marriage Law.

Article 50 of the Marriage Law as a provision that regulates the competence of a person with the article "(1) Children who have not reached the age of 18 (eighteen) years or have never been married, who are not under the authority of parents, are under the authority of a guardian. (2) The guardianship concerns the person of the child concerned and his or her property." So it is concluded that children who are not yet 18 (eighteen) years old are incompetent and are under the authority of a guardian. The guardian can take care of the inheritance for the benefit and will of the child and if it causes a loss due to an error or negligence, the guardian is obliged to be responsible according to Article 51 paragraph (5) of the Marriage Law.

Article 330 paragraph (3) of the Criminal Code states, "Those who are not yet mature and are not under parental control, are under guardianship on the basis and method as regular in the third, fourth, fifth and sixth parts of this chapter". The guardianship is established to assist the inability of the person who is the object of the guardianship in expressing himself. Therefore, the basis for holding a guardianship is to prevent a vacancy (vacuum), because the parental vacancy has been revoked for the child or children who still need it.<sup>23</sup>

Those who are entitled to become guardians under the Criminal Code, the appointment of guardians of minors must be based on the consent of both parents. However, since in this case the child's parents are dead, this agreement can be suspended. Usually, the appointment of a guardian will be based on the contents of the will of the parents. This condition is in accordance with Article 355 paragraph (1) of the Criminal Code which states that "Each parent, exercising parental authority or guardianship for a child or more has the right to appoint a guardian for the children, if the guardianship is after his death. the world for the sake of law or because of the Judge's determination according to the last paragraph of Article 353, it does not have to be done by the other parent."

That way, each parent has the right to appoint one guardian for the child as long as the position is still open, and the final guardianship decision will be determined by the judge. Basically, all relatives, or people appointed by the child's parents have the right to be the guardian of the child. Even so, this appointment can still be suspended if the appointed guardian does not meet the guardianship requirements. As in Article 332b (1) of the Criminal Code which reads, "Women with husbands may not receive guardianship without the help and written permission of their husbands".

Although it looks easy, in fact the Marriage Law also regulates the prohibition and authority of child guardians. Seen in Article 51 Paragraph (3) of the Marriage Law which states that the guardian is obliged to take care of the child under his control and his property in the best possible way by respecting the religion and belief of the child.

In addition, it is explained in Article 51 paragraph (4) of the Marriage Law, the Guardian is obliged to make the property of the child under his control at the time of starting office and record all changes in the property of the child. In Article 51 paragraph (5) the guardian is responsible for the property of the child under his guardianship as well as the losses incurred due to his mistake or negligence.

Based on this explanation, it can be interpreted that temporarily the land rights that are inherited to the child are transferred to the guardian, so that if the status of the land is property rights and the guardian is an Indonesian citizen (WNI) then the status of the Property Rights is not lost until it is returned to the child if the the child is legally capable and in accordance with Article 6 paragraph (1) of the Citizenship Law, the child can choose his or her own nationality.

In addition, there are other ways so that children can enjoy the inheritance that is blocked because the LoGA does not allow Foreign Citizens (WNA) or people who have citizenship other than Indonesia to own land with Hak Milik status. This is by selling the land. The act of selling land is possible and permissible as long as the heir or guardian has a Child Guardianship Determination Letter that has been legalized by the local District Court. However, in this case, the condition of the child has the right to inherit as an Indonesian citizen (WNI) and as an heir. The sale of land before the child turns 18 (eighteen) years is required if it is in the interests of the child, whether for education, health or living needs. Furthermore, the guardian must apply for a permit

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<sup>22</sup> *Ibid.*

<sup>23</sup> Muhammad Jawad Mughniyah, 2001, *Fiqih Lima Mazhab (Ja'fari, Hanafi, Maliki, Syafii, Hambali)*, Lentera, Jakarta, hal. 696.

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to sell property belonging to a foster child who is still underage. In accordance with Article 362 of the Criminal Code which states that "The guardian is in charge as soon as his guardianship comes into force, under the hands of the Heritage Hall, takes an oath, that he will carry out the guardianship entrusted to him with a good and sincere heart."

Then there will be a notification letter along with a letter of approval to pledge the property in the name of the child. If the heir or guardian of the child wants to sell the land or property belonging to the child, the main requirement that must be owned is the original Certificate of Inheritance (SKW) from the child's parents or the beneficiary party. In making a SKW before a Notary, those who can appear are capable persons, namely 18 (eighteen) years old or married. In this case, those who can appear are the guardians of the children whose court decisions have been made. If the court does not approve or allow the sale of the child's property, the guardian still cannot sell the inheritance. Likewise, the change of Ownership Rights to Use Rights for the benefit of children with dual citizenship, guardians need permission to change rights, including the management process. In conducting sales transactions against property, the guardian does not only bring a Certificate of Inheritance from the testator. Especially if the heirs are underage (not yet competent). In order for the process of selling objects in the form of land to take place without obstacles, a Letter of Determination from the District Court is required in accordance with Article 309 in conjunction with Article 393 of the Criminal Code which states that the transfer of property rights from children who are under the age category must be based on the determination of the local District Court. In the event of obtaining this determination, the guardian must submit an application for guardianship along with all the files and documents required for either the guardian or the child.

There are many parties who do not comply with this regulation because the Marriage Law does not mention that the transfer of property rights from minors must go through a decision from the District Court. However, the land office requires a decision from the District Court or in essence refers to procedural validity in accordance with statutory regulations. As in this case it refers to the Criminal Code because when referring to the Marriage Law there is no legal construction that regulates (legal void). The application of the Criminal Code in the guardianship of dual citizenship children is a manifestation of the theory of legal protection so that children as heirs can get their inheritance rights.

## 4. CONCLUSION

1. Children with dual citizenship have the right to inherit according to Article 852 of the Civil Code, so that dual citizenship status does not eliminate the right to inherit, but there are restrictions on obtaining property rights based on Article 21 paragraph (4) of the UUPA. This limitation is a manifestation of the principle of nationality in the LoGA, so the solution that can be done is to change the Property Rights to Use Rights.
2. In a legal event, the child can inherit, but in the case of a legal action because the child is incompetent, it requires the appointment of a guardian based on a court decision. The guardian will act like a parent and take care of the child's inheritance, including appearing before a Notary, making changes to Property Rights into Use Rights. Until the age of 18, the child has the Right of Use, and if he decides to become an Indonesian citizen, he can change the Right of Use to become Hak Milik again.

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## Challenges to the Teaching of ICT Related Courses in Office Technology and Management Programmes In Colleges of Education



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**ABSTRACT:** The study focused on the challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States. Two research questions and two null hypotheses guided the study. The design of the study was a survey design. The population of the study comprised one hundred and seventy-seven (177) lecturers in the Department of Business Education in the Colleges of Education in Katsina and Kano States. There was no sampling. The entire population was studied. A structured questionnaire duly validated and with reliability coefficient of 0.95 was used for data collection. One hundred and seventy-seven copies of the questionnaire were administered on the respondents. All the copies were accurately completed and returned. Mean and standard deviation were used to answer the research questions while t-test was used to test the hypotheses at 0.05 confidence level. The results of the study showed that the challenges to teaching of ICT related courses in Office Technology and Management (OTM) programmes in colleges of education are teaching facilities and human resources related. It was also found that there is a significant difference between the mean responses of male and female lecturers on teaching facilities related challenges to the teaching of ICT-related courses in OTM programmes in Colleges of Education. In addition, it was found that there is a significant difference in the mean response of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes in Colleges of Education based on ownership. The implication is that OTM education graduates may not be relevant in this era of ICT if these challenges are not well tackled by the management of colleges of education. It was recommended, among others, that management in colleges of Education should provide adequate ICT teaching facilities and adequate human resources for effective implementation of OTM programmes. Government should provide adequate funding to enable effective provision of teaching facilities and appropriate mix of the quality and quantity of human resources needed for the effective implementation of ICT related programmes in OTM in the colleges of education.

**KEYWORDS:** Challenges, Teaching, Information and Communication Technology Office Technology Management

### INTRODUCTION

Information and Communication Technology (ICT) is an umbrella term that includes all technologies encompassing medium for recording information such as magnetic disk, tape, optical disks (CD/DVD) flash and paper record, technology for the broadcasting, information, radio, television and technology for communicating through voice and sound or image, microphone, camera, loudspeaker, telephone or cellular phones (Augustine and Akpan, 2021). It also includes a wide variety of computing hardware, desktop computers, laptops and storage devices. From the foregoing, one can define ICTs as electronic devices that encompass CD-ROM, computer hardware and software, Internet, radio, television, disk and tape that libraries and information centers manipulate to facilitate recording, organizing, storage, retrieval, transmission and dissemination of information. The advent of ICT has broadened the horizon of education including Office Technology and Management as a result of increase in information. Information in various fields is readily available at split seconds. ICT has led to a fast paced world in almost all spheres of human endeavors. The rate at which the world is moving with Information and Communication Technology in this 21st century has left no choice to the educational sector especially in the area of teaching and learning than to dance to the tune piped by recent technological trends (Augustine and Akpan, 2021).

Since the evolution of ICT, giving and retrieving information have not remained the same. Information and Communication Technology has gained global recognition in the evolution of information dissemination (National Open University of Nigeria,

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2019). Information and Communication Technology tools for teaching and learning Office Technology and Management Education programme include computer, internet, PowerPoint software, television, overhead projector, camera, radio, video, tape, audio, world wide web(www) and telephones. Information and Communication Technology has been recognized to be a very powerful tool in education reform. It has radically influenced the way knowledge and information are generated, developed and transmitted. Information and Communication Technology has also turned the entire world into a global village and reduced the use of physical strength through performing tasks with automation (Drika, 2020).

Teachers, trainers and educationists who are not familiar with Information and Communication Technology find themselves threatened by professional obsolescence (Adewonj, 2020). Since education is perceived generally as an instrument par excellence for effecting sound changes, Information and Communication Technology, according to Adewonj (2020), has become the new communication and computing technology used for creating, storing, selecting, changing, developing, receiving and displaying all kinds of information. Adewonj (2020) classified information communication into three groups namely (i) those that process information e.g. computer (ii) those that disseminate information e.g. communication in electromagnetic devices and systems, and (iii) those for presentation of information e.g. multimedia. Information and Communication Technology is a technological tool and resource used to communicate, create, organize, disseminate, store, retrieve and manage information especially in the teaching ICT related courses in Office Technology and Management (OTM) Education programme.

Office Technology and Management (OTM) programme consists of courses that provide the business world with multi-skilled and knowledgeable workers who manage information efficiently, equipped with a comprehensive range of skills including managerial, technological and communication skills. Its graduates find employment in variety of fields in the business world. The work involves the management of information in administrative, financial, public relations, human resources, legal, e-commerce, event management or education and training environment. OTM programme was designed to equip students with secretarial/office skills for employment in various fields of Endeavour. The goals and objectives of OTM, according to the National Board for Technical Education (NBTE, 2004), are to: equip the students with the knowledge, competencies and specific skills that will enable them to successfully hold positions as secretaries, managers and administrative assistants in both public and private sectors of the economy; expose student to industrial experience thereby affording them the opportunity to practicalize their skills; develop the student's potentials for further academic and professional pursuit; develop in the students an occupational intelligence that will make them versatile and adaptable to the changing situation in the world of work.

The current OTM Education programme in colleges of education in Nigeria lays much emphasis on computer and computer related courses. Ojukwu (2018) observed that ICT related courses in the OTM curriculum include; ICT office application I and II, Database Management System, Management Information Systems, Advanced Web Page Design, Advanced Desktop Publishing, and Modern Office Technology. Thus, there is now more emphasis on ICT related courses. Some Colleges of Education, as noted by Ojukwu (2018), have indicated that there are not enough human resources to competently teach the ICT and related new courses especially in OTM Education programme. In the case of ICT office applications I and II, it was stated that lecturers who would teach the courses should be well knowledgeable in computer and its applications. Ojukwu (2018) also observed that Office Technology and Management Education teachers need to teach in line with the global demand and trends; and they should be dynamic to innovations in the education system. This would enable Office Technology and Management courses to achieve the objectives for which they are established. The modern Office Technology and Management Education teacher should be one who can source information locally and globally as the entire world has been a global village. Materials acquired in one environment should be used to solve problems in another environment.

In Nigeria tertiary institutions, OTM education has evolved as a branch of business education especially with the coming of ICTs into the education system. Its scope now includes a wider horizon of clusters of business and technological expositions to support the growth and development of individuals and nations. Extant literature has shown that one of the most immediately visible trends in OTM education across the globe is the continuous adjustment of the scope of its programs with the aim of tackling issues of global responsibility and sustainability- the most common response being the inclusion of new ICT modules in its existing programmes (Tilbury & Ryan, 2021). Mountjoy (2017) recognized significant changes in the scope of business education (OTM education inclusive) in America, which were triggered by scientific modernizations and changes in general attitudes of people towards business/vocational education. The scope of OTM education program has changed dramatically across the globe, in practice and theory and its curricular content has shifted focus from teaching typewriting, shorthand, and machine transcription to teaching ICT-related courses (Mountjoy, 2017; Isiyaku & Fidelia, 2020).

Unfortunately, despite the changes in the OTM education across the globe and in Nigerian tertiary institutions, OTM education still uses obsolete technologies (Asogwa, 2013; Isiyaku, Ayub & Kadir, 2018; Isiyaku, 2020). However, at the dawn of Nigeria's conception of the vision 2020 objectives, there were high expectations that special attention would be given to education at all

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levels, especially skill-oriented education such as OTM education. Over the past several years, Nigeria has not accorded adequate attention to the enhancement of the standard of its education system, especially with regard to Office Technology and Management Education. In 2007, the Federal Government of Nigeria recognized the importance of ICT and took the lead to integrate information technologies into OTM education programme. However, government's failure to provide adequate facilities for the implementation of such technologies in the classroom has left the situation unchanged. Hence, computers and other relevant facilities needed for the effective teaching and practice of OTM education in Nigeria's tertiary institutions have remained grossly inadequate with government continually failing to provide enough money needed for the anticipated reform in Nigeria's education (Edokpolor et al, 2017). But for an optimal teaching experience of ICT-related courses in OTM education programme, it is crucial to shift from the obsolete traditional designs and teacher-centered content delivery approach to a new model that supports the adoption of new technologies in teaching (Isiyaku, Ayub and Kadir, 2018). Doing this will entail securing solid ICT baseline, but teaching ICT-related courses in OTM education programmes in Nigerian tertiary institutions seems to be faced with several challenges including lack of adequate ICT infrastructure over the years, to effectively implement ICT-compliant teaching. These challenges according to Isiyaku (2020) could be school facilities related, human resource related, students related and/ or school administration related.

Some school facilities-related problems confronting the teaching of ICT-related courses in Office Technology and Management Education have been identified to include non-availability of computers or inadequate supply of computers in most of the Colleges of Education; inadequate or lack of physical facilities like ICT centers, virtual classrooms, lack of relevant software (Odera, 2021). To Abubakar (2016), the low rate of the adaptation and application of the new technology, especially in the Colleges of Education in Kastina and Kano States, is attributed to several factors which include inadequate ICT facilities in the schools, poor ICT policies, limited information infrastructures, poor perceptions of using ICT in education among teachers, students and the school administrators. Abubakar (2016) asserted that non-availability of ICT is often one of the most critical impediments to technology acceptance and integration in teaching and learning. They demonstrated that there is a persistent necessity for more ICT facilities if the nation is to effectively incorporate ICT into her Office Technology and Management Education. Poor Network services or poor internet services are another problem preventing effective usage of ICT facilities in teaching ICT-related courses in OTM. Odera (2021) opined that non-availability of computers or inadequate supply of computers in most of the colleges, lack of physical facilities to enable schools to introduce computer education and lack of relevant software are school facilities related challenges. Ilaonisi and Osuagwu (2010) also indicated that many factors limit the infusion of ICT in educational institutions in Nigeria. These include paucity of ICT infrastructure and lack of access; high student enrolments, inadequate funding and absence of funding allocation to technology; high cost of ownership and cost to the consumer and policy implications of the mismatch between the advertised capabilities of ICT technology and the aims of individual educational institutions

Otun and Atah (2021) noted that ownership of the colleges of education has influences in teaching of ICT-related courses in OTM programme in colleges of education in the areas of institutional funding, provision of modern ICT instructional facilities, provision of alternative power supply, employment and payment of lecturer's salary/ allowances. It is believed that Federal Government pays its staff regularly unlike the State Governments.

Furthermore, it is interesting to note that, the location of the institutions may influence the teaching of ICT-related courses in OTM programme in colleges of education. Otun and Atah (2021) defined location as a particular position, situation or geographical area. School location, therefore, refers to urban-rural school settings and this classification has influenced educational development (Abidogun, 2016). Otun and Atah (2021) explained that environment in which an employee works influences his level of utilization of emerging technologies considering the Internet connectivity and level of socio-economic development of such location or area. This area may be urban or rural area where the university is located. Location of an institution has a role to play regarding the challenges to the teaching of ICT-related courses in OTM programmes in colleges of education. Emele (2018) emphasized that lecturers in the rural areas have difficulty in the use of computer software and applications due to poor power supply and network connectivity.

In recent years, gender gap was a challenge to the teaching of ICT-related courses as have been found through many studies both locally and internationally. Lee (2017) asserted that gender is an ascribed attribute that differentiates feminine from masculine. Egbe (2019) looks at gender as a psychological term describing behaviour and attribute expected of individuals on the basis of being born either male or female. According to Offorma (2018), gender is a social construct and not biologically determined but a concept equivalent to race or class. This definition suggests that gender is socially or culturally constructed characteristics and role, which are associated with males and females in society. Danner and Pessu (2013) had established that females tended to be less interested in the utilization of modern ICT technologies in Business Education than males. In addition, Debyshire (2003) had earlier established that females are less confident than males in their computer skills, and that males perform better than females

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in Information and Communication Technology (ICT) related knowledge and skills. Notwithstanding the above findings, some studies have not found significant differences in gender towards the use of modern ICT instructional technologies in teaching of ICT-related courses in OTM programme. For instance, Adenuga, Owoyele and Adenuga (2011) did not find significant differences in the gender groups' attitudes towards ICT utilization in business education. Their study revealed that both male and female showed negative attitude towards the use of modern instructional technologies. The various studies discussed thus far show some evidence of gender disparities in the use of modern instructional technologies in Business Education pedagogy. This situation necessitated the consideration of gender disparity as one of the moderator variables in this work. Given the above background, the researchers were motivated to study the challenges to the teaching of ICT-related courses in Office Technology and Management Programmes in Colleges of Education.

### **STATEMENT OF THE PROBLEM**

Teaching in OTM programme seems to be faced with myriads of challenges such as non-availability of new technologies which would makes it difficult to teach ICT-related courses and prepare students for the use of the technology in various fields of human endeavor. Despite the critical role of information and communication tools in sectors like banking, construction, transport and communication among others, it has not been fully adopted in the teaching process in Colleges of Education in Nigeria especially in Katsina and Kano States.

This study, therefore, was conducted to determine the challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States.

### **Purpose of the Study**

The broad purpose of the study is to determine the challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. Specifically, the study sought to:

1. determine the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education.
2. ascertain the human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education.

### **Research Questions**

The following research questions guided the study:

1. What are the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education?
2. What are the human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education?

### **Hypotheses**

The following hypotheses were tested at 0.05 level of significance:

HO<sub>1</sub>: There is no significant difference in the mean ratings of male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education.

HO<sub>2</sub>: There is no significant difference in the mean ratings of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education based on ownership.

### **METHODOLOGY**

The design adopted for this study is a descriptive survey design. The study was conducted in Katsina and Kano States of Nigeria. The population for this study is one hundred and seventy-seven (177) lecturers in Business Education Departments in the Colleges of Education in Katsina and Kano States as at 2021/2022 academic year. Owing to the fact that the population is not too large, the entire population was studied. The instrument used for data collection was a structured questionnaire designed by the researchers. The instrument was subjected to validation by three experts - two ICT experts in Business Education and one expert in Measurement and Evaluation. The instrument was subjected to test of internal consistency, the entire 52 items of the instrument yielded a reliability coefficient of 0.95, which showed a very high internal consistency. One hundred and seventy-seven (177) copies of the questionnaire were administered to the respondents and fully retrieved. Mean and standard deviation were used to analyze data related to the research questions. The hypotheses were tested using t-test statistic at 0.05 level of significance.

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### RESULTS

**Research Question 1:** What are the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of the Colleges of Education?

Data collected with items 1 to 10 of the instrument were used to answer this research question. Summary of results is presented on Table1.

**Table 1: Mean Responses on Teaching Facilities-Related Challenges to the Teaching of ICT-Related Courses in OTM Programmes.**

S/N	Teaching Facilities-Related Challenges	SA	A	D	SD	X	SD	Decision
1	Poorly equipped computer laboratory	79	8	38	52	2.64	1.31	A
2	Lack of internet services	82	32	29	34	2.91	1.18	A
3	Inadequate number of computers	77	16	45	39	2.74	1.22	A
4	Inadequate use of projector	99	33	27	18	3.20	1.04	A
5	Poor power supply	78	54	32	13	3.11	0.95	A
6	Inadequate use of printer	21	20	25	111	1.72	1.07	D
7	Inadequate use of scanners	45	39	17	76	2.29	1.25	D
8	Poor provision of modern furniture like chairs and tables	56	22	24	75	2.33	1.30	D
9	Inadequacy of air conditioners in computer laboratory	101	24	28	24	3.14	1.12	A
10	Inadequate provision of storage devices like CD ROMs, Flash drives and diskettes	51	26	16	84	2.24	1.31	D
<b>Grand Mean</b>						<b>2.63</b>	<b>1.30</b>	<b>A</b>

Note: A = Agree (challenge), D = Disagree (not a challenge)

Result on the Table 1 show that poorly equipped computer laboratory, lack of internet services, inadequate number of computers, inadequate use of projector, poor power supply and inadequacy of accommodations in computer laboratory are teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education with the mean rating between 2.64 to 3.20 while the respondents rejected inadequate use of printer, poor provision of modern furniture like chairs and tables and inadequate provision of storage devices like CD ROMs, Flash drives and diskettes as challenges with mean ratings of 1.72 and 2.29

**Research Question 2:** What are the human resources-related challenges to the teaching of ICT-related courses in OTM programme of the Colleges of Education?

Data collected with items 11 to 22 of the instrument were used to answer this research question. Summary of results is presented on Table 2 below.

**Table 2: Mean Responses on Human Resources-Related Challenges to the Teaching of ICT-Related Courses in OTM Programmes.**

S/N	Human resources-related challenges	SA	A	D	SD	X	SD	Decision
11	Inadequate number of ICT laboratory security personnel	48	25	26	78	2.24	1.27	D
12	Inadequate number of ICT trainers	105	20	28	24	3.16	1.12	A
13	Inadequate number of hardware maintenance staffs	90	45	23	19	3.16	1.02	A
14	Inadequate number of software maintenance staff	93	31	30	23	3.09	1.10	A
15	Inadequate number of laboratory attendants	49	28	20	80	2.26	1.28	D
16	Inadequate number of power supply control officers	39	50	25	63	2.36	1.18	D
17	Inadequate number of computer networking staff	104	41	13	19	3.29	1.00	A



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18	Inadequate number of laboratory cleaners	59	23	22	73	2.38	1.31	D
19	Irregular training and retraining of lecturers on computer literacy	90	19	26	42	2.88	1.26	A
20	Lack of computer hardware skills among lecturers	121	20	16	20	3.36	1.04	A
21	Lack of computer software skills among lecturers	99	32	26	20	3.18	1.06	A
22	Lack of interest among lecturers to learn ICT skills	76	15	14	72	2.53	1.39	A
<b>Grand Mean</b>						<b>2.62</b>	<b>1.16</b>	<b>A</b>

Results on the Table 2 show that inadequate number of ICT trainers, inadequate number of hardware maintenance staffs, inadequate number of software maintenance staff, inadequate number of computer networking staff, lack of computer hardware skills among lecturers, lack of computer software skills among lecturers and lack of interest among lecturers to learn ICT skills are the human resources-related challenges to the teaching of ICT-related courses in OTM programmes of the Colleges of Education with the mean rating between 2.63 to 2.94, while the respondents rejected inadequate number of laboratory attendants, inadequate number of power supply control officers, inadequate number of laboratory cleaners as challenges with mean ratings between 2.03 and 2.41.

### Research Hypotheses

**HO<sub>1</sub>:** There is no significant difference in the mean ratings of male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States.

Data collected on teaching facilities-related challenges were separated across gender and subjected to a t-test of difference between means of independent samples. Summary of the data analysis is presented on Table 3.

**Table 3: T-test Results of Male and Female Lecturers on Teaching Facilities-Related Challenges to the Teaching of ICT-related courses in OTM programmes**

Items	Gender	N	Mean	SD	DF	t.Cal	t_criti	Difference
1	Male	124	2.86	1.30	175	3.50	1.96	Significant
	Female	53	2.13	1.17				
2	Male	124	3.21	1.07	175	5.65	1.96	Significant
	Female	53	2.20	1.11				
3	Male	124	2.75	1.21	175	0.30	1.96	Not Significant
	Female	53	2.69	1.26				
4	Male	124	3.13	1.04	175	1.30	1.96	Not Significant
	Female	53	3.35	1.02				
5	Male	124	3.06	0.96	175	1.04	1.96	Not Significant
	Female	53	3.22	0.93				
6	Male	124	1.63	1.04	175	1.65	1.96	Not Significant
	Female	53	1.92	1.10				
7	Male	124	2.04	1.27	175	4.40	1.96	Significant
	Female	53	2.90	1.00				
8	Male	124	1.98	1.24	175	5.94	1.96	Significant
	Female	53	3.15	1.06				
9	Male	124	3.09	1.13	175	0.81	1.96	Not Significant
	Female	53	3.24	1.09				
10	Male	124	1.91	1.24	175	5.68	1.96	Significant
	Female	53	3.03	1.10				
						<b>3.02</b>		<b>Significant</b>

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Summary of the results presented on Table 3 indicates that the calculated t-value (3.02) is greater than the critical t-value of 1.96 at 0.05 level of significance. Based on the result, the null hypothesis is rejected indicating that there is a significant difference between male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. The researchers concluded that there is a significant difference between the mean responses of male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States. This means that the gender of the respondents influenced their responses.

**HO<sub>2</sub>:** There is no significant difference in the mean ratings of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education in Katsina and Kano States based on ownership.

Data collected on human resources-related challenges were separated across ownership (Federal and State owned Colleges of Education) and subjected to a t-test analysis. Summary of the data analysis is presented on Table 4

**Table 4: T-test Result of on Human Resources-related Challenges to the Teaching of ICT-Related Courses in OTM programmes of Colleges of Education based on ownership.**

Items	Variables	N	Mean	SD	DF	t.Cal	t-crit	Difference
1	Federal	127	1.92	1.20	175	5.85	1.96	Significant
	State	50	3.06	1.05				
2	Federal	127	3.25	1.07	175	1.82	1.96	Not significant
	State	50	2.92	1.22				
3	Federal	127	3.09	1.07	175	1.44	1.96	Not significant
	State	50	3.34	0.87				
4	Federal	127	3.04	1.11	175	0.94	1.96	Not significant
	State	50	3.22	1.05				
5	Federal	127	1.94	1.23	175	5.62	1.96	Significant
	State	50	3.06	1.07				
6	Federal	127	2.41	1.19	175	0.90	1.96	Not significant
	State	50	2.24	1.13				
7	Federal	127	3.31	0.99	175	0.33	1.96	Not significant
	State	50	3.26	1.04				
8	Federal	127	2.14	1.32	175	3.92	1.96	Significant
	State	50	2.98	1.11				
9	Federal	127	3.06	1.24	175	3.02	1.96	Significant
	State	50	2.44	1.21				
10	Federal	127	3.29	1.07	175	1.54	1.96	Not Significant
	State	50	3.56	0.95				
11	Federal	127	3.13	1.08	175	1.05	1.96	Not significant
	State	50	3.33	0.99				
12	Federal	127	2.15	1.37	175	6.41	1.96	Significant
	State	50	3.50	0.86				
						<b>2.73</b>		<b>Significant</b>

The result in the Table above shows that the calculated t-value (2.73) is greater than the critical t-value of 1.96 at 0.05 level of significance. Hence, Ho<sub>2</sub> is rejected. It was therefore concluded that there is a significant difference in the mean responses of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education based on type of ownership. The researchers concluded that there is a significant difference in the mean responses of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programmes in Colleges of Education based on ownership (Federal or State) in Katsina and Kano States.

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### **DISCUSSION**

The findings of this study in respect to the first research question identified teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of colleges of education, to include poorly equipped computer laboratories, lack of internet services, inadequate number of computers, inadequate use of projector, poor power supply. The findings agreed with Abubakar (2016), that low rate of the adaptation and application of the new technology especially in the Colleges of Education is attributed to several factors which include inadequate ICT facilities in the schools, poor ICT policies, limited information infrastructures, poor perceptions of using ICT in education among teachers, students, and the school administrators. Abubakar (2016) asserted that non-availability of ICT is often one of the most critical impediments to technology acceptance and integration in teaching and learning. These findings are also in line with the views of Odera (2012) that non-availability of computers or inadequate supply of computers in most of the colleges, lack of physical facilities to enable schools to introduce computer education and lack of relevant software are school facilities related issues. Ilaonisi and Osuagwu (2010) also indicated paucity of ICT infrastructure and lack of access; high student enrolments, inadequate funding and absence of funding allocation to technology; high cost of ownership and cost to the consumer and policy implications of the mismatch between the advertised capabilities of ICT technology and the aims of individual educational institutions.

However, the findings on the hypothesis tested showed that there is a significant difference in the mean responses between male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. This means that the opinion of male and female lecturers differs regarding the teaching facilities-related challenges to the teaching of ICT-related courses in OTM programmes of Colleges of Education. This is in line with the findings of Danner and Pessu (2013) who established that females tend to be less interested in the utilization of modern ICT technologies in Business Education than males. In addition, studies like Debyshire (2003) also established that females are less confident than males in their computer skills, and that males perform better than females in Information and Communication Technology (ICT) related knowledge and skills. Notwithstanding the above findings, some studies have not found significant differences in gender towards the use of modern ICT instructional technologies in teaching of ICT-related courses in OTM programme.

The findings obtain from research question two show that lack of computer hardware skills among lecturers, lack of computer software skills among lecturers, lack of interest among lecturers to learn ICT skills, inadequate number of ICT trainers, inadequate number of hardware maintenance staffs, inadequate number of software maintenance staff and inadequate number of computer networking staff are human resources-related challenges to the teaching of ICT-related courses in OTM programmes of colleges of education in Katsina and Kano states. This finding is in line with that of Lewis (2003) who stated that without both good technical supports in the classroom and whole-school resources, teachers cannot be expected to overcome the obstacles preventing them from effective teaching of ICT related courses in Office Technology and Management. The findings are also in consonance with the finding of Toprakci (2006) who found that In Nigeria, the lack of technical support was one of two significant barriers to ICT integration in education and might be considered "serious".

Becta's survey (2004) also indicated that technical faults might discourage them from using ICT in their teaching because of the fear of equipment breaking down during a lesson. The Becta went further to note that "if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns". The findings are also in line with the work of Gomes (2005) who stated that ICT integration in teaching needs a technician and if one is unavailable the lack of technical support can be an obstacle. Sicilia (2005) also noted that technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity.

However, the findings on the hypothesis tested showed that there is a significant difference in the mean responses of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programme of Colleges of Education based on ownership. This means that state and federal colleges of education differs in their opinion regarding the human resources-related challenges to the teaching of ICT-related courses in OTM programme of Colleges of Education. These findings agree with Otum and Atah (2021) who noted that ownership of the colleges of education has influences in teaching of ICT-related courses in OTM programme in colleges of education in the areas of institutional funding, provision of modern ICT instructional facilities, provision of alternative power supply, employment and payment of lecturer's salary/ allowances. It is believed that federal government pays its staff regularly unlike the state government can owe many months' salary and allowances in colleges of education.

### **CONCLUSION**

Based on findings of this study, it was concluded that that there is a significant difference between male and female lecturers on teaching facilities-related challenges to the teaching of ICT-related courses in OTM programme of Colleges of Education and there

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is significant difference in the mean response of lecturers on human resources-related challenges to the teaching of ICT-related courses in OTM programme in Colleges of Education based on ownership. This means that gender and ownership (Federal or State Governments) influenced the mean responses of the subjects in the study.

### RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Management in colleges of Education should provide adequate ICT teaching facilities for effective implementation of OTM programme in Colleges of Education in Katsina and Kano States
2. Management in colleges of Education should be training and retraining OTM lecturers on computer literacy for effective implementation of OTM programme in Colleges of Education in Katsina and Kano States
3. Administrators of OTM programme in Colleges of Education in Katsina and Kano States should employ competent staff with ICT knowledge, technologists and technicians for teaching, proper installation and maintenance of the available information and communication technologies equipment in the department

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## Relationship between Arm Muscle Strength, Lemb Muscle Strength, and Eyes-Foot Coordination with Basic Movement Ability of Elementary School Students



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### ABSTRACT

**Purpose:** The purpose of this study was to examine relationship between arm muscle strength, lemb muscle strength, and eyes-foot coordination with basic movement ability of elementary school students.

**Materials and Methods:** The use of quantitative methods to examine certain populations or samples, generally sampling techniques are random or random, requires research instruments for data collection. The study was conducted in that place because researchers wanted to test the basic movement skills of upper class students of Madrasah Ibtidaiyah Negeri Kota Cirebon. The total of the 6 classes is 62 male students. Test the hypothesis of the relationship level of arm muscle strength, leg muscle strength, and eye-foot coordination together with basic motion ability using multiple correlation coefficients.

**Results:** Based on the analysis, a value coefficient of  $20.583 > (2.79)$  was obtained at a significance level of 5% and  $= 0.929 > = 0.279$ , thus it is interpreted that there is a significant relationship between arm muscle strength, leg muscle strength and eye-foot coordination with the basic movement ability of MIN Cirebon City male students. This relationship means that there is a relationship between these variables with basic motion ability. When performing each daily activity the strength of arm muscles, leg muscles, and eye-foot coordination contributes to the results of movement.

**Conclusions:** Based on the research results, it can be concluded that there is the contribution was arm muscle strength of 13.39%, leg muscle strength of 15.51%, and eye-foot coordination of 26.38%, and the remaining 44.7% was influenced by other factors that were not studied in this study.

**KEYWORDS:** Arm Muscle Strength, Lemb Muscle Strength, Eyes-Foot Coordination, Basic Movement Ability

### INTRODUCTION

Law number 20 of 2003 Article 1 concerning the National Education System states that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves society, nation and state (Amaliyah & Rahmat, 2021). National education functions to develop the ability and shape the character and civilization of a dignified nation in order to educate the nation's life, aims to develop the potential of students to become human beings who believe and fear God Almighty, have noble character, healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens (Kurniawan, 2015).

If teaching methods can direct, nurture, and motivate children in elementary school, then students will develop their skills and talents. Fine and gross motor skills, creativity, spirituality, and emotional intelligence are all emphasized in the educational structure (Apriloka, 2020). One of the educational goals for elementary school-age children is for children to be able to grasp sensory stimuli as well as be able to manage their motor skills (Masni, 2018).

The process of physical and motor development in elementary school students plays an important role in shaping quality individuals in the future. Children's physique and motor develop very rapidly (Mahfud & Fahrizqi, 2020).. Motor development and physical development go hand in hand. Movement or motor development is also impaired if there is a disturbance in physical

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development. The development of motion is beneficial for the growth of physiological, cognitive, social, and emotional elements (Mustafa & Sugiharto, 2020)

Basically, humans move and move to survive. Without realizing it, humans have been moving from an early age. Means motion is an important necessity in survival. Good basic motion affects good motion for humans as well, because basic motion is the main element of all human motion (Muslihin, 2020). Examples of basic movements that children do when playing are walking, running, jumping, sometimes throwing and catching in certain games. Without realizing it, many games contain basic human movements. That means physical activity has a large contribution to the basic movement ability of a child (Leonardo & Komaini, 2021).

In schools, physical activities that require basic movement have been arranged in a structured and planned manner into a subject, namely Physical Education, Sports, and Health (PJOK) (Raibowo & Nopiyanto, 2020). PJOK subjects function to develop children's basic movement skills because learning is carried out through physical activities that involve basic movements. Physical activity is a form of stimulation in order to bring out the potentials of students in learning (Irianto, 2018).

Because physical education is essentially an inherent component of the entire education system, physical education occurs when students experience a reciprocal process with the school environment through effective and efficient physical coaching in order to produce a whole person (Atabik, 2018). The process of implementing physical education learning should focus on efforts to improve basic movements so that students avoid difficulties in following lessons, especially students who have basic movements that have not been fully formed. Even when playing, students need good basic movement skills to produce maximum motion, so that students easily recognize other more complicated movements (Mustafa, 2020).

Teachers in elementary schools, especially those who teach PJOK, need to know the stages of student development, especially in terms of physical and motor abilities. The ability of a PJOK teacher to design various physical learning activities that can encourage the growth and development of children's basic movements is very important. In other words, the physical activity of PJOK teachers must motivate students to move actively to meet the learning objectives of basic movement skills (Mashud, 2019). In the implementation of physical education, students receive psychological guidance which includes mental, motivation, and physical or physical coaching (physical exercise) whose training can be a provision of abilities and skills can be used to get through the next period of development (Safitri, 2021).

Play becomes an activity that elementary school children like and becomes a character of their age. Student growth and development will have a positive effect from basic motion play activities. Games with elements of basic motion such as running to pick up the ball then returning to the starting point again, jumping through obstacles in the form of The installed cone, ran to one point and turned quickly towards the other (Sumantri & Neldi, 2019).

As the game progresses, researchers make observations on learning basic motion wrapped games that are in progress. Researchers found that some upper-grade students lost their balance when turning quickly, fell when bent over to pick up the ball, were unable to catch the ball (about the size of a tennis ball), and were only able to do a few times push ups in a series of games. To support the basic movements of students, the attention of PJOK teachers must be focused on the characteristics of students starting from their physical, social, and intelligence conditions (Sudirjo et al., 2019).

Strength, coordination, speed, balance, agility, flexibility, and endurance are components of basic movement skills. Since strength is the engine that drives all physical activity, it is an important aspect of total physical fitness. The components of the physical state on which movement, strength and coordination are based are constants (Vanagosi, 2016).

Strength, like the strength of the arm and leg muscles, is one of the many important elements that determine how well a person performs in physical activity. The capacity of a set of muscles to tolerate resistance or load while performing their function is known as strength (B Bafirman, 2019). Arm muscle strength is a movement that is performed explosively, meaning someone who is able to use arm muscle strength that is maximally deployed in the shortest time to produce movement. A positive impact will be given by good muscle strength, related to the use of power to perform movements. If the power is large, then the activity will be easier. The better the strength of the arm muscles, the better the ability of students to carry out their activities (Chan, 2012).

Leg muscle strength is one aspect that affects a person's appearance along with arm muscle strength, especially in movement skills training. Basically, you have to constantly work your muscles, especially your legs, while performing tasks. When actively playing, for example when children are cycling, running, or jumping. This action relies on the strength of the leg muscles unconsciously. There is no doubt that the carrying capacity and contribution of arm and leg muscle strength to the demands of an activity or sport have a significant impact (Marwan et al., 2013). But the PJOK learning process is not taught in a focused manner, so the impact on the strength of the students' arm and leg muscles is still weak.

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In addition to the role of strength, the physical condition supporting the basic movement of students is coordination. Coordination is the interaction of the central nervous system with all the body's locomotion apparatus in regulating and controlling muscle work to carry out a series of motions. Basic movements require the ability to perform good eye-foot coordination in some basic movements, for example when kicking, dribbling, throwing, a series of ideal, easy, slick and smooth movements will be created from the sequence of motion must be done precisely. Eye-foot coordination is needed in the basic movement ability of individuals, eye-foot coordination is able to combine effectively a variety of different motions into a complete motion pattern. Without having capable eye-foot coordination, an individual will find it difficult to move properly.

Based on observations, the basic movement ability of elementary schools, especially in the upper grades, is still relatively poor. The coordination of children's gestures in preschool should have developed close to perfect and will be perfect when the child enters elementary school age. The problems that become the background above concern the problem of arm muscle strength, leg muscle strength, eye-foot coordination with basic movement ability.

### METHOD

The research will be conducted at Madrasah Ibtidaiyah Negeri Kota Cirebon which is addressed at Jl. Captain Samadikun Gg. Bawal No. 142A, Kec. Lemahwungkuk, Cirebon City, West Java. The study was conducted in that place because researchers wanted to test the basic movement skills of upper class students of Madrasah Ibtidaiyah Negeri Kota Cirebon.

In this study took the population of male students grade IV, V, VI in Madrasah Ibtidaiyah Negeri Kota Cirebon with a total of 6 classes consisting of class IV-A 12 students, class IV-B 19 students, V-A 8 students, V-B 10 students, VI-A 5 students, VI-B 8 students. The total of the 6 classes is 62 male students

The author uses correlational quantitative methods in conducting this research. The use of quantitative methods to examine certain populations or samples, generally sampling techniques are random or random, requires research instruments for data collection, analyzing data with statistics whose purpose is to test hypotheses:

#### 1. Descriptive Analysis

Descriptive analysis is part of the way to process and perform quantitative data analysis in order to describe an activity in an orderly manner. Descriptive statistics aim to tell the picture of respondents and the distribution of research data. Generally descriptive statistics describe data from mean, standard deviation, minimum and maximum.

#### 2. Normality Test

Test Normality is a requirement that must be met so that regression can be used to predict whether residual data in a study has been distributed normally or not (Ghozali, 2018: 154).

#### 3. Linearity Test

To find out whether the use of model specifications is correct or not, it is necessary to conduct a linearity test. The linearity test will provide information on whether the impirical model should be linear, quadratic or cubic. Correlation or regression analysis uses a linearity test as a prerequisite. This study uses a method to test, namely test for linearity or a comparison of ETA and R squared. Linearity can be seen from the table Measure of Association. If the eta value > eta Square then the proper model is linear or from anova table Linear Model if Sig Linearity < 0.05

#### 4. Correlation Coefficient Test

##### a. Simple Correlation Coefficient

To find a relationship and prove the hypothesis between arm muscle strength and basic motion ability, namely with the formula:

$$r_{x_1y} = \frac{\sum x_1y}{\sqrt{\sum (x_1)^2 y^2}}$$

Information:

$r_{x_1y}$  = correlation between variable (arm muscle strength) and variable Y (basic movement ability)  $X_1$

$X_1$  = arm muscle strength

y = basic motion ability

To find a relationship and prove the hypothesis between leg muscle strength and basic motion ability, namely with the formula:

$$r_{x_2y} = \frac{\sum x_2y}{\sqrt{\sum (x_2)^2 y^2}}$$

Information:

$r_{x_2y}$  = correlation between variable (leg muscle strength) and variable Y (basic movement ability)  $X_2$



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$X_2$  = leg muscle strength

y = basic motion ability

To find a relationship and prove the hypothesis between eye-foot coordination and basic motion skills, namely with the formula:

$$r_{x_3y} = \frac{\sum x_3 y}{\sqrt{\sum (x_3)^2 \sum y^2}}$$

Information:

$r_{x_3y}$  = correlation between variable (eye-foot coordination) and variable Y (basic movement ability)  $X_3$

$X_3$  = eye-foot coordination

y = basic motion ability

### b. Multiple Correlation Coefficient

Next, to test the hypothesis of the relationship level of arm muscle strength, leg muscle strength, and eye-foot coordination together with basic motion ability using multiple correlation coefficients. The characteristic of multiple correlation coefficients is to have more than one independent variable, the formula is:

$$R_{x_1x_2x_3} = \sqrt{\frac{b_1 \sum x_1 y + b_2 \sum x_2 y + b_3 \sum x_3 y}{\sum y^2}}$$

Information:

$R_{x_1x_2x_3}$  = Correlation coefficients, , and  $YX_1X_2X_1$

$\sum y^2$  = Number of squares of criterium Y

$b_1$  = Coefficient of predictor  $X_1$

$b_2$  = Coefficient of predictor  $X_2$

$b_3$  = Coefficient of predictor  $X_3$

The correlation coefficient (r) indicates the degree of influence of the independent variable (X) with the dependent variable (Y). The value of the coefficient must be within the limits of -1 to +1 ( $-1 < r < +1$ ), resulting in several possibilities, namely:

- If  $r = 0$  or close to 0, then it shows a weak correlation or no correlation at all between the variables studied.
- If  $r = +1$  or close to +1, then the correlation between variables is said to be positive.
- If  $r = -1$  or close to -1, then the correlation between the two variables is said to be negative.

## RESULTS

This study used 4 variables, consisting of 3 independent variables (arm muscle strength, leg muscle strength, and eye-foot coordination) and 1 dependent variable, namely basic movement ability. In order for research to be easier to do, then the three variables are denoted in  $X_1$  for arm muscle strength, for leg muscle strength, for eye-foot coordination and Y for basic locomotion. The following will describe the data of each variable.  $X_2$   $X_3$

The following will describe the data of each variable. The data description describes the maximum, minimum, mean and standard deviation, which are then arranged in a frequency distribution along with a histogram image. The following is a description of the data obtained from the research subjects:

### 1. Arm Muscle Strength

The results of calculating variable data on arm muscle strength were obtained, minimum value = 10.5 , maximum value = 21.6 , average (mean) = 15.542 , standard deviation = 2.7268. The description table of arm muscle strength analysis data is as follows:

**Table 1. Description of Frequency Arm Muscle Strength**

Number	Interval	Frequency	%
1.	10,5 – 12,35	9	16,67
2.	12,36 – 14,21	9	16,67
3.	14,22 – 16,07	13	24,07
4.	16,08 – 17,93	14	25,93
5.	17,94 – 19,79	5	9,26
6.	19,80 – 21,6	4	7,40
Sum		54	100

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These results when displayed in the form of a diagram will be seen as below.

### 2. Leg Muscle Strength

The results of calculating variable data on arm muscle strength were obtained, minimum value = 14, maximum value = 64, average (mean) = 3.39, standard deviation = 10.108. The description table of arm muscle strength analysis data is as follows:

**Table 2. Description of Arm Muscle Strength Frequency**

Number	Interval	Frequency	%
1.	14 – 23	15	27,78
2.	24 – 33	19	35,19
3.	34 – 43	15	27,78
4.	44 – 53	4	7,41
5.	54 – 64	1	1,85
Sum		54	100

The results when displayed in the form of a diagram will be seen as below:

### 3. Eye-Foot Coordination

The results of calculating the data of the eye-foot coordination variable were obtained, minimum value = 3, maximum value = 14, mean = 7.91, standard deviation = 2.452. The description table of arm muscle strength analysis data is as follows:

**Table 3. Description of Frequency of Eye-Foot Coordination**

No.	Interval	Frequency	%
1.	3 – 5	11	20,37
2.	6 – 8	22	40,74
3.	9 – 11	18	33,33
4.	12 – 14	3	5,56
Sum		54	100

### 4. Data Analysis Results

#### a. Normality Test

Based on the results of the normality test, it is known that the significance value is  $0.200 > 0.05$ , so it can be concluded that the residual value is normally distributed.

#### b. Linearity Test

Linear testing is carried out through the F test. The relationship between variables X and Y is declared linear if the value with  $df = m; N-m-1$  at a significance level of  $0.05 > .$  The results of the linearity test can be seen in the following table. Full results are presented in appendix:

**Table 4. Results of the Linearity Test**

	F <sub>Count</sub>	Df	F <sub>Table</sub>	Sig	Information
X <sub>1</sub> . Y	0,712	1:53	2,31	0,801	Linear
X <sub>2</sub> . Y	1,124	1:53	1,96	0,389	Linear
X <sub>3</sub> . Y	0,619	1:53	1,98	0,789	Linear

From the table above, it can be seen that the value of all independent variables with bound variables is smaller than . Thus, the relationship of all independent variables to their dependent variables is expressed linearly.

### 2. Test the Hypothesis

Analysis of research data used to test the hypothesis consists of simple regression analysis and multiple regression. The results of a simple regression analysis are as follows:

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**Table 5. Results of a Simple Regression Analysis**

	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	Y	r <sub>tabel</sub>
X <sub>1</sub>	1	0,558	0,234	0,521	0,266
X <sub>2</sub>		1	0,262	0,546	0,266
X <sub>3</sub>			1	0,585	0,266
Y				1	-

To clarify the relationship between the independent variable and the dependent variable, a simple regression analysis is performed.

The next hypothesis test is the analysis of arm muscle strength, leg muscle strength, and eye-foot coordination with basic movement ability together. The results of the hypothesis test using multiple regression analysis can be seen in the following table:

**Table 6. Results of the Hypothesis Test using Multiple Regression Analysis**

Variable	Regression Coefficient	F <sub>hitung</sub>	F <sub>tabel</sub>	R	R <sup>2</sup>	P
Constant	99,148	20,583	2,79	0,743	0,526	0,000
Arm Muscle Strength	2,502					
Leg Muscle Strength	0,745					
Eye-Foot Coordination	4,878					

Based on the results of the regression analysis, the regression equation is obtained as follows:  $Y = 99.148 + 2.502 X_1 + 0.745 X_2 + 0.184 X_3$

The coefficient objection test was carried out by consulting a value of  $20.583 > (2.79)$  at a significance level of 5% and  $= 0.929 > = 0.279$ , meaning that the coefficient is significant. Thus, the hypothesis reads "there is a significant relationship between arm muscle strength, leg muscle strength, and eye-foot coordination with the basic movement ability of MIN Cirebon City male students".

The amount of contribution of arm muscle strength, leg muscle strength, and eye-foot coordination to basic movement ability is known by means of the value of R = (x100%). The value was 0.553, so that the contribution of arm muscle strength, leg muscle strength, and eye-foot coordination to basic movement ability was 55.3%, while the remaining 44.7% was influenced by other factors that were not included in the research variables. The amount of contribution of each variable is described as follows:

**Table 7. Contribution of Arm Muscle Strength, Leg Muscle Strength, and Eye-Foot Coordination to Basic Movement Ability**

Variable	r	SR	ONE
Arm muscle strength	0,521	13,3897	24,21284
Leg muscle strength	0,546	15,5064	28,04051
Eye-foot coordination	0,585	26,3835	47,70976
<b>Sum</b>		<b>55,3</b>	<b>100,0</b>

## DISCUSSION

Basic movement ability is a general skill that experiences continuous repetition until it becomes a habit, the basis of experience for locomotor, non-locomotor and manipulative movements so that the quality of life increases. To obtain good basic movement skills, every elementary school student is required to have elements of basic movement abilities, namely arm muscle strength, leg muscle strength, and eye-foot coordination.

## Relationship between Arm Muscle Strength, Leg Muscle Strength, and Eyes-Foot Coordination with Basic Movement Ability of Elementary School Students

Basic movement ability is a phase of learning motion aimed at the development and maturity of children's movement skills which include the basic movements including the body, space, effort, and connectedness. One must master locomotor, non-locomotor, and manipulative movements in order to have good basic movement skills. To support good basic movement abilities, elements of good physical condition are also needed. In this study the aim was to determine the relationship between arm muscle strength, leg muscles, and eye-foot coordination with basic movement abilities.

### CONCLUSION

Based on the analysis, a value coefficient of  $20.583 > (2.79)$  was obtained at a significance level of 5% and  $= 0.929 > = 0.279$ , thus it is interpreted that there is a significant relationship between arm muscle strength, leg muscle strength and eye-foot coordination with the basic movement ability of MIN Cirebon City male students. This relationship means that there is a relationship between these variables with basic motion ability. When performing each daily activity the strength of arm muscles, leg muscles, and eye-foot coordination contributes to the results of movement. The magnitude of the contribution was arm muscle strength of 13.39%, leg muscle strength of 15.51%, and eye-foot coordination of 26.38%, and the remaining 44.7% was influenced by other factors that were not studied in this study.

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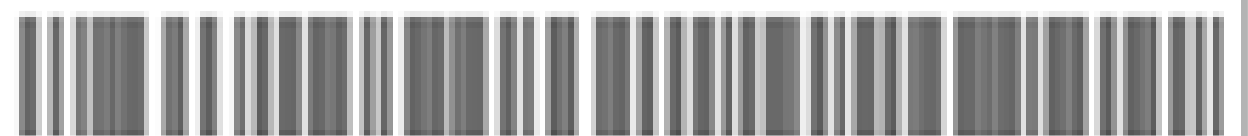
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