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PhD Environmental Engineering and sciences

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Professor-Tashkent State University of Oriental studies,Tashkent, **Uzbekistan**

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Associate Professor of the Department of Production of Building Materials, Products and Structures of Fergana Polytechnic Institute

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Navoi State Pedagogical Institute, Faculty of Foreign Languages, Associate Professor of English Language and Literature,

Candidate of Philological Sciences

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Assoc. Prof. University of Oradea, 1 Universitatii str., 410089, Oradea, **Romania**

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Acting Associate Professor of Uzbek Language and Literature, Namangan State University  
Namangan Region, Mingbulak District

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Acting Head of the Department of Russian Language and Literature, Namangan State University  
Namangan Region, Uychi District

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Lector, Faculty of Physical Education and Sport of "Al. I. Cuza" University  
Str. Toma Cozma Nr. 3, Iasi 700554, **Romania**

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Republic Of Karakalpakstan, Amudarya District

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Senior Lecturer of the department "Manufacture of building materials, products and structures" Fergana Polytechnic Institute  
Fergana Region, **Fergana District**

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Associate Professor of the Department "Accounting and audit" of the Tashkent Institute of irrigation and agricultural engineers.  
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Professor in Networking, K.L.N College of Engineering, Anna University  
Anna University, Chennai, **Tamil Nadu, India, 2009**

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Leading Researcher of the Department of Modern Uzbek Language of the Institute of Uzbek Language, Literature and Folklore of  
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Head of the Department of Preschool Education, Navoi State Pedagogical Institute  
**Navoi City, Lomonosova Street**

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Assistant of the Department of Languages and Sports, Fergana Branch, Tashkent University of Information Technologies  
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Assistant Professor, Department of English IBAIS University (International Business Administration and Information System)  
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**Dr. Parizod Sh. Turopova (Doctor of Philosophy in Philology)**

Senior Lecturer of the department of teaching methods of Uzbek literature of Jizzakh State Pedagogical Institute  
Jizzakh City, Uratpalik Mahalla

**Dr. Nodira I. Soatova (Philological Sciences)**

Associate Professor of the Department of Methods of Teaching Uzbek Literature at Jizzakh State Pedagogical Institute  
**Sh.Rashidov District, Uzbekistan**

**Tahir, Nura Musa (B. Eng. (BUK), M Eng. (UTM, Malaysia).)**

Department of Mechatronics and System Engineering, Faculty of Engineering and Engineering Technology, Abubakar Tafawa Balewa University, Bauchi,  
P.M.B 0248, Bauchi, Bauchi State, Nigeria

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Associate Professor of the Department of Internal Medicine No. 2 of the Tashkent Medical Academy  
Namangan City, Namangan Region

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Assistant Professor Department of Statistics Patna University,  
Department Of Statistics, Patna University, Patna-05, **Bihar**

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Professor Assistant in University Mustapha STAMBOULI Mascara  
Mascara 29000, **Algeria.**

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Associate Professor of ENT Diseases, Tashkent Medical Academy  
**Tashkent Region, Zangiota District**

**Dr. Devarani Devi Ningombam (Ph. D.Computer Engineering)**

Post-doctoral fellow, Department of Information strategy, Electronics and Telecommunications Research Institute (ETRI)  
Electronics And Telecommunications Research Institute (ETRI) Dormitory, Gajeong-Dong, Yuseong-Gu, Daejeon 34129, South  
**Korea**

**Dr. Shakhnoza Mukhamedjanovna Jalolova (Doctor of Philosophy in Philology)**

Acting Associate Professor of English Philology, National University of Uzbekistan named after Mirzo Ulugbek  
Tashkent City, Chilanzar District, Kyzyl Sharq District, **Uzbekistan**

**Dr. Suheela Shabir (Doctorate (PhD) in Marketing)**

Asst. Prof. in College of Business and Administration in PRINCESS NOURA BINT ABDUL RAHMAN UNIVERSITY, Riyadh  
**Saudi Arabia**

**Dr. Abdilatip Abdirakhimovich Sarimsokov (Historical Sciences)**

Acting Head of the Department of Archeology, Namangan State University  
Namangan City, Porloq MCM, 3rd Micro-District, 3rd House, 8th Apartment

**Dr. Dharmendra Singh (PhD, CFP, CFA, Associate-life, UGC-NET)**

Assistant Professor, Modern College of Business and Science (MCBS), Sultanate of Oman  
**Oman**

**Dr. Ayman Shehata Mohammed Ahmed Osman Mohammed El-Shazly (Ph.D. (Pure Mathematics- Mathematical Analysis - Complex Analysis))**

Lecturer, Department of Mathematics, Faculty of Science, Assiut University, Assiut 71516,  
**Egypt**

**Dr. Jamila Sharipovna Jumabayeva (Doctor of Philological Sciences)**

Head of the Department of English Philology, Faculty of Foreign Philology, National University of Uzbekistan named after Mirzo  
**Ulugbek Tashkent**

**Dr. Lola S. Ortikova (Doctor of Philosophy in Agricultural Sciences)**

Lecturer of the Department of Biology Teaching Methods, Jizzakh State Pedagogical Institute  
Jizzakh City, Almazar Mahalla,

**Farisa T S(M.Tech (CSE))**

Digital signal processing, Data Mining, Natural Language Processing **INDIA**

**Dr. G.RakeshP.hd(Computer Science & Application)**

Dean of Science JAIRAMS COLLEGE OF ARTS & SCIENCE, KARUR.**INDIA**

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Head of the Department of Management and Marketing, Tashkent Financial Institute  
**Tashkent City, Mirzo Ulugbek District**

**Dr. Rashmi Rai(Ph. D,(Quality of Work-Life and Job Performance))**

Assistant Professor , Management Department , Christ University, **Bangalore,INDIA**

**Dr. Ravshan Khudayberganov(PhD on historical sciences)**

Senior scientific researcher, Al-Beruni Institute of Oriental Studies, Academy of Sciences of the Republic of Uzbekistan, Tashkent,  
**Tashkent, Uzbekistan**

**Dr. Mohammed Nader Shalaby(Ph.D. Degree of Pathobiology and Physiology)**

Associate Prof. of Biological Sciences and Sports Health Department, Faculty of Physical Education, Suez Canal University  
**Egypt, Ismailia**

**Dr.Mona Mostafa Abdo Sakoury(P.hd)**

Associate Professor, Faculty of Applied Studies and Community, Service, Imam Abdulrahman Bin Al- Faisal University.  
**Saudi Arabia**

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College of William & MaryLyon G. Tyler Department of History.

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Senior Lecturer of Namangan Institute of Engineering and Technology, **Uzbekistan**

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**Dr. Makhmud Akhmedovich Shakhodjaev**

Associate Professor of Fergana Polytechnic Institute, Faculty of Energy, "EEE"  
**Fergana Region, Margilan City, M.Khofiz Street**

**Dr. Xaynazarov Baxromjon (Phd In History)**

Faculty of History,National University of Uzbekistan  
**Tashkent, Uzbekistan**

**Dr. Dildora Bakhadirjanovna Agzamova**

Associate Professor of "Translation Theory and Comparative Linguistics" of the National University of Uzbekistan named after  
Mirzo Ulugbek

**Dr. Izzatilla Makhmutalievich Khaydarov**

Associate Professor of "History and Ethnology of the Peoples of Central Asia" Tashkent State University of Oriental Studies

**Dr. Khurshida Erkinovna Yunusova(Doctor of Historical Sciences)**

Professor of the Department of History of Uzbekistan, National University of Uzbekistan named after Mirzo Ulugbek  
**Tashkent City, Chilanazar District , Uzbekistan**

**Dr. Ravshan Berdimurodovich Siddikov(Doctor of Historical Sciences)**

Associate Professor of History of Uzbekistan, National University of Uzbekistan named after Mirzo Ulugbek  
**Tashkent City, Almazar District, Uzbekistan**

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Head of the Department of Distance Education in Social Sciences and Humanities Jizzakh State Pedagogical Institute

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Associate Professor, Spiru Haret University of Bucharest, **Romania**

**Dr. Umidjon Yandashalievich Kuziev**

Acting Head of Department of Uzbek Language and Literature, Namangan State University  
**Namangan Region, Chust District**

**Akpojaro Oghenechuko Owens (Msc, PGD,HND, ND)**

Assistant Lecturer, School of Basic Science Programme(Mathematics Unit), **Nigeria**

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Associate Professor & Senior Researcher of Economics  
Amity University, Kolkata Action Area II, Major Arterial Road, New Town

**Dr. Askar R. Babaev**

Acting Associate Professor  
Tashkent City, Mirabad District,

**Dr. Thirupathi Dongala(Ph.D, M.Sc. B.Sc. IT)**

Working as Analytical Scientist-I with AUREX LABORATORIES LLC, 10 Lake drive, East Windsor, NJ, 08520 USA

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Department of Pharmaceutical and Medicinal Chemistry, Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa State, **Nigeria.**

**Chibuisi C. Okorieimoh Doctoral Researcher)**

Assistant lecturer School of Multidisciplinary Technologies, Technological University Dublin

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University of Dschang, Faculty of Arts, Letters and Social Sciences, Department of Applied Foreign Languages

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Assistant Professor (English) Tribhuvan University, M.M. Campus, Nepalgunj

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Associate Professor

Republic Of Karakalpakstan, Amudarya District

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Lecturer, College of Medicine, Mosul, Iraq Course Unit Director, College of Medicine, Uni. of Mosul

**IRAQ**

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Senior Lecturer of the Department of Social Sciences, Urgench Branch of the 1st Tashkent State Medical Institute

Republic Of Karakalpakstan, Amudarya District

**Dr. Kamila K. Juraeva ( Ph.D.)**

Associate Professor of Power Supply, Tashkent State Transport University

Tashkent

**Dr. Wan Ainun Binti Mior Othman(Ph.D)**

Associate Professor Institute of Mathematical Sciences, Faculty of Science, University of Malaya, 50603 Kuala Lumpur, **Malaysia.**

**Dr. Dharmendra S. Mistry (Ph.D.)**

Prin. M. C. Shah Commerce College (Navgujarat Campus),( Affiliated toGujarat University)

**Ahmedabad, INDIA**

**Dr. Murodulla A. Juraev(Doctor of Philosophy in Philology)**

Senior Lecturer of the Department of Methods of Teaching Uzbek Literature of Jizzakh State Pedagogical Institute

Jizzakh City, Ittifaq Mahalla

**Dr. Surayyo I. Eshonkulova(Philological Sciences)**

Associate Professor of Teaching Methods of Uzbek Literature, Jizzakh State Pedagogical Institute

**Jizzakh Region, Jizzakh City**

**Dr. Namrata Raviraj Vaishamapayan(MD, PGDHA, BHMS)**

Assistant Professor(Practice of Medicine),MNR Homoeopathic Medical College, Sangareddy, Telangana

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A University professor of Immunology Mustansiriyyah University – College of Science, **Baghdad**

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Associate Professor of "Agricultural Mechanization and Investment Activity" Nukus branch of Tashkent State Agrarian University.

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Associate Professor of General Pedagogy and Psychology, Navoi State Pedagogical Institute

**Professor Zulkhumor N. Tojjeva**

Professor of Economic and Social Geography

**Tashkent City, Yashnaabad District, Baku 1-Berk Street**

**Dr. Ulughbek M. Ergashev(PhD in Medical Sciences)**

Senior Lecturer of the Department of Otorhinolaryngology and Dentistry, Tashkent Medical Academy

**Tashkent City, Yashnabad District**

**Dr. Jamolbek A. Djuraev(Doctor of Philosophy in Medical Sciences)**

Senior Lecturer, Department of Otolaryngology and Dentistry, Tashkent Medical Academy

**Tashkent City, Almazar District**

**Dr. Lola S. Ortikova** Senior Lecturer of the Department of Otolaryngology and Dentistry, Tashkent Medical Academy

**Tashkent City, Mirabad District, Sadyk Azimov Street**

**Dr Ziyoda G. Mukhamedova(Doctor of Sciences in Technics)**

Doctoral student of the Department of Freight Transport Systems, Tashkent State University of Transport (DSc)

**Tashkent City, Yunusabad District**

**Dr. Shahzada Mudasir Rashid(PhD)**

Assistant Professor (Scientist) Division of Veterinary Biochemistry, Faculty of Veterinary Sciences, SKUAST-K, Shuhama, Alustang, Srinagar.

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Professor of the Department of "Oriental Policy and International Relations" of the Tashkent State University of Oriental Studies

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**Dr. Karno Kumar Mondal(Ph.D)**

Teaching Assistantship Undergraduate Lab Department of Physics Khulna University of Engineering & Technology, Khulna-9203

**Dr. Begzodbek Kh. Abdullaev(Doctor of Philosophy in Philology)**

Associate professor , Andijan State Universitys

**Andijan Region, Altynkul District**

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Senior Lecturer of the Department of General Biology and Methods of Teaching ,Jizzakh State Pedagogical Institute

**Dr. Rakhimjon Kh. Muradov(Doctor of Philosophy in Technical Sciences)**

Senior Lecturer, Namangan Institute of Civil Engineering

**Namangan Region, Mingbulak District**

**Dr. Vishal Dubey (Ph.D)**

Director, Department of Pharmaceutical Sciences, Naraina Vidya Peeth Group of Institutions, **INDIA**

**Dr. Venkataraman Mugundan(PhD in Mathematics)**

Math Lecturer in 'INSTITUTE OF APPLIED TECHNOLOGY',(GOVERNMENT OF ABU DHABI), Fujairah, United Arab Emirates, **U.A.E.**

**Dr Muzraf T. Rabbimov(Ph.D)**

Associate Professor at the Department of Primary Education at Jizzakh State Pedagogical Institute

**Dr Otabek Sh. Ochildiev(Doctor of Philosophy in Technical Sciences)**

Head of the Laboratory "Software Management and Mechatronics" of the Research Institute of Agricultural Mechanization

**Tashkent Region, Yangiyul District,**

**Dr Umidbek B. Yusupov(Doctor of Philosophy in Technical Sciences)**

Acting Associate Professor of "Vehicle Engineering" Tashkent State Transport University

**Tashkent City, Sergeli District,**

**Dr Abdirasuli A. Ibragimov(Doctor of Philosophy in Technical Sciences)**

Scientific Secretary of the Research Institute of Agricultural Mechanization and Electrification

**Tashkent Region, Yangiyul District,**



**Dr. Altinoy Masalieva (Associate Professor Candidate of Historical Sciences)**

Uzbek State University of World Languages, Associate Professor of History of Uzbekistan

**Dr. Yusup Kh. Manzarov (Associate Professor Candidate of Historical Sciences)**

Assistant of the Department of Social Sciences at Karshi Engineering and Economics Institute.

**Dr. Durdona A. Mustafoeva (Doctor of Philosophy in Pedagogical Sciences)**

Associate Professor (PhD), Department of "Professional Education and Physical Culture", Tashkent Institute of Irrigation and Agricultural Mechanization Engineers,

**Tashkent Region, Tashkent District,**

**Dr. Mamurzhan A. Mirzazhanov (Candidate of Technical Sciences)**

Associate Professor of Production of Products and Structures, Fergana Polytechnic Institute of Building Materials

**Fergana Region, Oltiariq District**

**Dr. Mahmudjon M. Ergashev (Candidate of Technical Sciences)**

Head of the Department of Production of Building Materials, Products and Structures of Fergana Polytechnic Institute

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Department of History and International Studies, Federal University Gashua, Yobe State, **Nigeria**

**Dr. J.GAJENDRA NAIDU (Ph.D In Finance)**

Head of the Department, Faculty of Finance Botho university: Gaborone Campus: Botswana

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Chairperson of laboratory Scientific research Institute protection of plants

**Uzbekistan**

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Trade Specialist for Innovative Projects of Agricultural Research Institute

**Tashkent Region, Yangiyul District**

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Assistant professor of Economics, Banking and Finance, Sudan Academy for Banking and Financial Sciences (SABFS-Sudan)

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Associate Professor V Sultan Kudarat State University, College of Teacher Education ACCESS, EJC Montilla, Tacurong City

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Dean of the Faculty of Physics and Technological Education of Jizzakh State Pedagogical Institute

**Jizzakh District, Navoi SFU**

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National Institute of Arts and Design named after K.Bekzod, **Tashkent**

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Department of Political and Administrative Studies, Faculty of Social Sciences, University of Port Harcourt

**Nigeria**

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Assistant Professor, Department of Business Administration, Al Albayt University, Mafraq, Jordan

**Dr Nasiba N. Panjjeva (Doctor of Philological Sciences)**

Associate Professor of English Language and Literature, Termez State University

**Surkhandarya Region, Termez City**

**Dr. Shakhlo B. Samanova (Doctor of Philosophy)**

Associate Professor of “Theory of building a democratic society in Uzbekistan.” Urgench State University.

**Khorezm Region, Urgench District**

**Dr. Abderraouf Mtiraoui (Ph.D in Economics)**

Assistant Professor in Economics at the Higher Institute of Finance and Taxation (HIFT)-Sousse- **Tunisia**

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Senior Lecturer at Malaysian Academy of SME & Entrepreneurship Development, Universiti Teknologi MARA, Shah Alam

**Malaysia**

**Dr. Wulan Rahmadhani (Doctor in Public Health)**

Lecturer, Department of Midwifery, Sekolah Tinggi Ilmu Kesehatan Muhammadiyah Gombong, **Indonesia**

**Dr. Adeboye, N. Olawale (Doctor of Philosophy (PhD))**

Department of Mathematics & Statistics, Federal Polytechnic Ilaro, Nigeria

**Ewa, Moses Apie (Ph.D)**

Lecturer Department of Educational Foundations & Childhood Education, Faculty of Education, Cross River University of Technology (CRUTECH), Calabar, **Nigeria**

**Shaimaa Mohamed Hassanin (Ph.D in English Literature)**

Lecturer of English language and American literature at Horus University

**Damietta, Egypt**

**Dr. Dildora S. Davronova (Doctor of Philosophy in Pedagogical Sciences)**

Associate Professor of “Pedagogy and Psychology” at the Uzbek State University of World Languages

**Chilonzor Region Tashkent, Uzbekistan**

**Dr. Karima J. Tulenova(Doctor of Philosophy)**

Acting Head of the Department of Social Sciences, Tashkent State Pedagogical University named after Nizami

**Tashkent City, Yakkasaray District**

**Yannick Boum (Ph.D in English Language)**

A researcher from the University of Yaounde **Cameroon, Central Africa**

**Dr. Rashmi S (Doctor of Philosophy in Botany)**

Assistant Professor, Post Graduate Department of Botany, JSS College of Arts, Commerce and Science (Autonomous) Ooty Road, Mysore, Karnataka, **India**

**Dr Abdimurot U. Kuziev(Candidate of Technical Sciences)**

Head of the Department of Transport Systems and Structures of Termez State University

**Surkhandarya Region, Termez City**

**Dr. Normakhmat P. Panjiev (Doctor of Philological Sciences)**

Head of the Department of Russian Linguistics, Termez State University

**Surkhandarya Region, Termez City**

**Rawda Bashir Abdulla (Ph.D.)**

Assistant Professor in Teaching English language and Applied Linguistics, Department of English Language Skills Jouf University Kingdom of **Saudi Arabia**

**Dr. Nemat Kh. Kushvaktov( Ph.D Pedagogical Sciences)**

Head of the Department of General Pedagogy of Jizzakh State Pedagogical Institute.

**Jizzakh City, Navruz Mahalla**

**Dr Khurshid A. Sattarov (Ph.D.)**

Head of the Department of Electronics and Radio Engineering, Tashkent University of Information Technologies named after Muhammad al-Khwarizmi, **Tashkent City, Mirabad District**

**Dr. Manoj Kumara.N.V (Ph.D in Finance)**

Associate Professor in Department of Management Sciences, Maharaja Institute of Technology- Mysore.

**Karnataka, India**

**Jupeth Toriano Pentang (Doctor of Philosophy Major in Educational Management)**

Mathematics Educator, Researcher and Extensionist, College of Education, Western Philippines University Puerto Princesa City,

**Philippines**

**Housseine Bachiri (Ph.D)**

Assistant Professor at the Faculty of Sciences and Technologies, Tangier

**Tangier (Morocco)**

**Dr. Sarvarbek Kh. Jumaboev(Doctor of Philosophy in Technical Sciences)**

Acting Associate Professor of Power Supply, Tashkent State Transport University

**Uchtepa District**

**Dr. Gulmira J. Tulenova**

Professor, Tashkent University of Information Technologies named after Muhammad al-Khwarizmi, Tashkent, Uzbekistan

**Uzbekistan**

**Seham Ismail (Doctor Philosophy in Agricultural Sciences)**

Head of Department of Insect Population Toxicology, Central Agricultural Pesticides Laboratory, Agriculture Research Center, Dokki, Giza, Egypt

**Egypt**

**Dr. Veena N (Ph.D. in Educational Psychology)**

Associate Professor, Christ Academy Institute for Advanced Studies (CAIAS), Bangalore

**Bangalore**

**Dr. Djuraev Jamolbek Abdulkakharovich (Ph.D.)**

Senior Lecturer Department of Otolaryngology and Dentistry TMA

**Tashkent**

**Dr. V.KIRUTHIGA (Ph.D)**

Assistant Professor, Department of Management Studies, Faculty of Engineering and Technology, Jawaharlal Nehru Salai, 100 Feet Road, Vadapalani, Chennai-600026

**Chennai**

**Dr. Govind Shinde (Ph.D.)**

Professor, Babasaheb Gawde Institute of Management Studies. (Approved Associate Professor Finance Faculty University of Mumbai)

**Mumbai**

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Professor in organic chemistry, Department of Chemistry, Synthetic Organic Field, IRAQ

**Iraq**

**Dr. Tiziana Ciarambino (Ph.D. in Geriatrics Physiopathology)**

Teacher at the University of Campania

**Campania**

**Dr. Kalandarov Palvan Iskandarovich (Doctor of Technical Sciences)**

Professor at the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers in Tashkent

**Tashkent, Uzbekistan**

**Dr. MC Manjunatha (Phd.)**

Assistant Professor, Department of Civil Engineering, Maharaja Institute of Technology, Thandavapura, Mysuru -571 302

**Mysuru**

**Dr. Sourabodhi Bhattacharyya (Ph.D)**

Assistant Professor of Sanskrit (Stage II) Galsi Mahavidyalaya, B.U, Galsi,Purba Bardhaman , W.B-713406  
India

**Dr. Naftaly Gisore Mose (Ph.D in Economics)**

Lecturer (Economics) University of Eldoret

**Kenya**

**Dr. ARTI (Ph.D. in Law)**

Assistant Professor, Desh Bhagat University, Punjab

**INDIA**

**Dr. MOTHUKURI ANJIAH (Ph.D. In Library Science)**

Assistant Professor (Dept. of Library and Information Science)

**INDIA**

**Dr. Youssif Zaghwan Omar (PhD in English Education)**

General Director of the Institute of Human Resources Development at the Libyan Academy

**Libya**

**Dr. Ndubuisi-Okolo (Ph. D)**

Lecturer, Nnamdi Azikiwe University

**Nigeria**

**Dr. Mourad Romdhani (Ph.D. in English Literature)**

Assistant Professor, the Faculty of Letters and Humanities, University of Sousse, Tunisia

**Tunisia**

**Dr. Utemuratova Gulshirin Najimatdinovna (PHD in Biological Science)**

Karakalpak Scientific Research Institute of Natural Sciences Laboratory of Animal Science, Doctor of Philosophy PHD, Biological Science, Uzbekistan

**Uzbekistan**

**Dr. Tureyev Abat Arisovich, PhD (Doctor of Philosophy (Tourism))**

lecturer of technology of storage and processing of agricultural crops, philosopher of Biological Sciences ,Karakalpakstan Institute of Agriculture and Agrotechnology,

**Uzbekistan**

**Dr. Rico Paulo G. Tolentino (PhD in Development Education)**

School Principal, Department of Education, Schools Division of Bulacan, Philippines

**Philippines**

**Dr. Nik Alif Amri Bin NikHashim (Doctor of Philosophy (Tourism))**

Senior Lecturer (DS51), Faculty of Hospitality, Tourism & Wellness, University **Malaysia Kelantan**

**Australia**

**Shuang Li (Ph.D. in Sociology)**

Sociology Lecturer, Department of Sociology and Social Work University of Wisconsin-Stevens Point  
Wisconsin

**Dr. V.KAVITHA (Ph.D. in English Literature)**

Assistant Professor of English, Nehru Arts and Science College (Autonomous), Coimbatore

**Coimbatore**

**Dr. Samieva Gulnoza Utkurovna**

Doctor of medical sciences (DSC), Samarkand State medical institute, Uzbekistan

**Uzbekistan**

**ANOKE, Amechi Fabian (Ph.D)**

Lecturer, Department of Business Administration, Faculty of Management Sciences; Nnamdi Azikiwe University, Awka, Anambra State **Nigeria**

**Dr..L.Bhuvana (Ph.D)**

Assistant Professor of Chemistry, Shrimati Indira Gandhi College, Tiruchirappalli  
**Tamil Nadu, India**

**Dr. Norjigit T. Nishonov(Candidate of Agricultural Sciences)**

Senior Lecturer, Department of Agrochemistry, Soil Science, Plant Protection and Quarantine, Samarkand Veterinary Medical Institute Samarkand Region

**Dr. Esirgap I. Turapov(Ph.D)**

Associate professor of the Department of "Machine Engineering Technology" at the Almalyk Branch  
Jizzakh Region, Galla-Aral District

**Dr Alisher J. Shokirov(Doctor of Agricultural Sciences)**

Dean of the Faculty of Storage and Processing of Agricultural Products, Tashkent State Agrarian University  
**Tashkent Region, Yunusobod District**

**Dr. Patkhillo Siddikov(Doctor of Technical Sciences)**

Professor of "Technology of textile fabrics" of the Tashkent Institute of Textile and Light Industry  
**Tashkent City, Chilanzar District**

**Suyarova Nargiza Yuldoshevna (Doctor of Philosophy (PhD))**

Senior teacher, Philological Sciences, Karshy State University, Uzbekistan

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## Active Ageing of Elderly Living in Residential Care Facilities in Malaysia



Aidanajwa Sabri<sup>1</sup>, Ahmad Martadha Mohamed<sup>2</sup>

<sup>1,2</sup> School of Government, Universiti Utara Malaysia, Malaysia

**ABSTRACT:** The concept of active ageing has gained significance in aging due to the need for integrated approach towards understanding the aged. For this purpose, the data collected from questionnaires distributed to 489 older people living in residential care facilities provided by Government, Non-Governmental Organisations (NGOs), and private sector in Malaysia were analysed quantitatively. Three dimensions of active ageing were assessed, named health, meaningful leisure and social environment. The results provide a comprehensive understanding of elderly and carries various implications for research and policy making.

**KEYWORDS:** Elderly, Active Ageing, Residential Care Facilities, Older People, Meaningful Leisure, Social Environment, Health

### I. INTRODUCTION

Individual life expectancy has increased as a result of demographic changes and medical advancements. The number of elderly people receiving residential care is rising and is predicted to continue rising in the foreseeable future. Age-related low quality of life among the elderly is a global concern, particularly in residential care. Studies have shown that elderly people's physical, emotional, and social wellbeing is negatively impacted by inactivity (Adams, Leibbrandt, and Moon, 2011; Hutchinson & Warner, 2015; Miller 2016; Toepoel, 2013).

The quality of life in residential care can be impacted by both engaging in physical activity and meeting spiritual needs. Understanding how people's views, involvement, and the availability of enjoyable activities interact to preserve wellbeing is crucial (Miller, 2016). The term "active ageing" and the spiritual demands of elderly people receiving residential care are the focus of this study, along with how these factors relate to the quality of their lives. The difficulties that come with getting older are complex for many reasons, including frailty, preconceptions, gender, identity, and socialisation. Phenomenological analysis is a useful tool for comprehending how the elderly behave in their environment.

### II. LITERATURE REVIEW

The process of maximising possibilities for health, participation, and security in order to improve people's quality of life as they age is known as active ageing, according to the World Health Organization (WHO, 2012). Furthermore, WHO has divided active ageing into six determinants, including health and social services, behaviour, personal, physical environment, social, and economic factors (Lai, Lein, Lau, & Lai, 2016). The International Council on Active Aging (ICAA), on the other hand, defines active ageing as being "involved in life." Regardless of age, socioeconomic background, or health, the focus is on emotional, environmental, physical, social, and spiritual wellness (ICAA, 2015). Multidimensional engagement, comprising physical, functional, psychological, and social health, can be used to describe successful ageing (Phelan, Anderson, LaCroix, & Larson, 2004). Additionally, older adults who engage in physical activities including biking, walking, fitness trails, and other activities to maintain their fitness and build strength, flexibility, and endurance should be included in the category of active ageing (An, Lee & Kim, 2013; Dahany et al., 2014; Sykes & Robinson, 2014).

In addition, Paul, Ribeiro, and Teixeira (2012) found that the social services, physical environment, health, and economic variables were pertinent to active ageing, which is connected to individual needs, resources, and outcomes. Similar to Boudiny (2013), who encouraged older people to participate in social and economic activities to stay active and independent. In order to foster more active ageing in the workforce, UNECE (2013) also promoted economic activities in line with the European Year for Active Ageing and Solidarity between Generations 2012 (EY2012) ageing framework (EY2012 British Society of Gerontology,

## Active Ageing of Elderly Living in Residential Care Facilities in Malaysia

2012). Additionally, according to the Organisation for Economic Co-operation and Development (OECD), older individuals will become useful in society and economic activity if their employment chances are improved (OECD, 2006). The emphasis on activities that improve health and the ability to live independently was not included in the criteria, though (Sidorenko & Zaidi, 2013).

Bowling have concurred that senior citizens' social interactions and level of activity will improve if they participate in leisure and social activities (Bowling, 2008). Therefore, to promote healthy ageing, elderly people should be actively involved in their lives by taking part in geriatric clubs and community activities (Rattanapun, Fongkeaw, & Chontawan, 2009; Sutipan & Intarakamhang, 2017). Elderly people deserve to live better lives so they can continue to contribute to the growth of their country and feel valued by their community.

Additionally, being physically active and living in a healthy environment might encourage active ageing. The creation of better public exercise spaces where seniors can engage in daily exercise and other physical activities can encourage them to be more active (An et al., 2013). In addition, to promote active living, the neighbourhood and nearby facilities must be outfitted with high-quality, senior-friendly amenities and services (Bowling, 2008). If elderly persons can continue to engage in physical activity, they may be able to avoid developing chronic illnesses, which will allow them to live happier, healthier lives and reduce dependency.

Additionally, by taking into account their level of need, mental and physical wellbeing, and social obligations that are assigned to them, active ageing enables people to remain autonomous and realise their potential regardless of their age (Mayhew, 2005; Sutipan & Intarakamhang, 2017). Successful ageing was envisioned as multifaceted, involving avoiding illness and incapacity, maintaining high levels of physical and cognitive function, and continuing to participate in social and productive activities (Rowe & Kahn, 1997). Rowe and Kahn's conceptualization was further developed by McLaughlin (2010) using the six interpretations of not having a serious disease, not having an activity of daily living (ADL) handicap, scoring at the median or above on cognitive functioning tests, and being actively involved. Elderly folks who can live independently and maintain a healthy lifestyle are genuinely successful as they age.

People can realise their potential for lifelong physical, social, and mental wellbeing by engaging in active ageing. The process is what motivates senior citizens to take into account social, environmental, and physical factors when leading a healthy lifestyle. Active older adults will have a greater understanding of and appreciation for good ageing when they are gathered in one community. The policies and framework of active ageing, which are based on location and culture, are diverse and complex, according to Sidorenko and Zaidi (2013). To fill up the gaps in this study, it is important to discuss ageing and actively age from the perspective of residents of residential care.

### III. METHODS

#### A. Population

The target respondents for this study are senior people residing in residential care facilities run by the government, non-profit organisations, and private companies. These facilities are required to register with The Registry of Society of Malaysia and the Malaysia Department of Social Welfare (JKM) (ROS). According to information and figures provided on the websites of the organisations, Peninsular Malaysia had 216 residential care facilities as of June 2016. Peninsular Malaysia's entire geographic area was divided into four regions for the survey's purposes: North, Central, South, and East. A multistage stratified sample process was used for the survey, and 12 residential care facilities were chosen at random from each of the four areas. According to the Department of Social Welfare Malaysia (JKM), 2016 report, there are 9, 520 old people living in 216 residential care facilities in Peninsular Malaysia that are run by the government, non-profit organisations, and the private sector.

#### B. Sample

The sample size for this study has been decided upon using a stratified random sampling. According to Table 3.5, the study's sample size was 9520 people from 216 facilities served by 3 providers. According to Sekaran and Bougie (2016), a sample size of about 297 respondents would be ideal for the survey's 1300-person population because "sample sizes bigger than 30 and fewer than 500 are adequate for most studies" (p. 295). It has been discovered that the stratified random sampling technique is effective and suited for gathering data from different strata (a number of subpopulations) within the population (Sekaran, 2003). This sampling technique involves defining the strata and figuring out how many people from each stratum to include in the sample.

#### C. Questionnaire Design

For the questionnaire survey in this study, a closed-ended structured questionnaire with a five-point rating system was employed. However, a number of research in the body of literature have used Likert scales with four, five, six, seven, and even

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nine points. But in this study, a five-point Likert scale was employed. First, a scale with a midpoint is thought to present a better and more accurate result (Krosnic & Fabrigar, 1997) by enabling the respondents to simply and clearly express their position with regard to their choice of an item. This is why a 5-point Likert scale was chosen.

### D. Data Collection

According to the results of the analysis above, this study uses a self-administered questionnaire to collect the information needed for analysis from the respondents. The use of questionnaires for data collecting is most frequently used in quantitative research. It describes a scenario in which researchers employ a set of predesigned written questions with clearly defined options and items recorded to elicit information on particular topics of interest from respondents (Kumar et al., 2013; Sekaran & Bougie, 2013). In order to obtain a significant amount of quantitative data for descriptive research, questionnaires are used as the primary data collection tool. It can be administered personally (i.e., by self-administering), via mail, electronically, or even by sending it right to the respondents. The questionnaire approach is more time and money efficient than the two ways of data collecting outlined above (Kumar et al., 2013; Sekaran & Bougie, 2013), however it occasionally experiences poor respondent response rates.

### E. Data Analysis Technique

Version 24 of the Statistical Package for Social Science (SPSS) was used to analyse the data. In addition to its benefits like time savings, clear statistical results, and reliable results, SPSS software's ability to process massive amounts of data with unlimited data consumption is the primary reason that this study has opted to use it (Agusyana & Islandsript, 2014).

## IV. RESULTS

### A. Response Rate

The success of a researcher in getting respondents to fill out the questionnaire, according to Babbie (2004), is gauged by the response rate. The questionnaires were hand distributed to the respondents in this study to ensure improved return rates. A personally administered questionnaire, according to Sekaran (2003), encourages respondents to respond honestly. Additionally, it aids in raising the proportion of positive comments from respondents (Dillman, 1978). Fourteen residential care institutions in Peninsular Malaysia received a total of 489 surveys, and all 489 questionnaires were returned for this study.

### B. Demographic Analysis

The data were obtained from 489 elderly resides in residential care facilities provide by Government (n=192, 39.3%), NGOs (n=181, 37%) and Private (n=116, 23.7%). A summary of the demographic profile of 489 residents are displayed in Table 1.

Of the 489 residents, 280 (57.3%) were females and 209 (42.7%) were males. In this study, the largest proportion of residents was in the youngest old age group, age 60 to 74 years old (n=224, 45.8%) and middle old age group, age 75 to 84 years old (n=216, 44.2%). Both of this age group represents the fastest-growing segment of the elderly population in Malaysia (Department of Health, 2001). Totally, 49 residents (10%) were oldest old, age 85 years and above. United Nations 2001 has classified elderly into three life-stage subgroups which is young-old (60 to 69 years old), old-old (70 to 79 years old) and oldest-old (80 years old and above) (Zainab Ismail, Wan Ibrahim Wan Ahmad, & Zuria Mahmud, 2007).

With respect to ethnic and religion, half of the residents are Malay and Islam (n=255, 52.1%). For ethnic, its follow by Chinese 37.2 percent and Indian 10.6 percent. Other than Islam, 36.6 percent of the residents are Buddhist, 9.6 percent are Hindu, and 1.6 percent are Christian. In this study, marital status was classified as "never married", "married", and "divorced/separated". The majority of the residents were married (n=293, 59.9%). More men (n=90, 43.1%) than women (n=60, 21.4%) were divorced/separated and 9.4% (n=46) of the residents were never married (Table 2).

**Table 1: Characteristics of the Respondents (n=489)**

Variable	Number	Percent
<b>Facilities Provider</b>		
Governments	192	39.3
NGOs	181	37.0
Private	116	23.7
<b>Gender</b>		
Male	209	42.7
Female	280	57.3
<b>Age</b>		

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Youngest old	224	45.8
Middle old	216	44.2
Oldest old	49	10
<b>Ethnic</b>		
Malay	255	52.1
Chinese	182	37.2
Indian	52	10.6
<b>Religion</b>		
Islam	255	52.1
Buddhist	179	36.6
Hindu	47	9.6
Christianity	8	1.6
<b>Marital status</b>		
Never Married	46	9.4
Married	293	59.9
Divorced/Separated	150	30.7
<b>Number of Children</b>		
None	46	9.4
1 – 3 persons	226	46.2
4 – 6 persons	181	37
7 person and above	36	7.4
<b>Education</b>		
No Education	187	38.2
Primary School	151	30.9
Secondary School	100	20.4
College	51	10.4
<b>Occupations</b>		
Government	81	16.6
Self-employed	203	41.5
Private	45	9.2
Unemployed	160	32.7
<b>Income</b>		
Below RM1,000	322	65.8
Above RM1,000	167	34.2
<b>Years of Staying</b>		
1 to 5 years	291	59.5
6 to 9 years	189	38.7
10 years and above	9	1.8

Most of the residents in this study does not received education (n=187, 38.2%). The reason behind this is, at their age, most of them are from the baby boomer's era where at that time, educational opportunities are limited. Approximately 30.9 percent (n=151) completed primary school, 20.4 percent (n=100) completed secondary school and 10.4 percent (n=51) of the respondent graduated from college. Before entering the residential care facilities, the residents were predominantly self-employed (n=203, 41.5%) and unemployed (n=160, 32.7%). About 16.6 percent (n=81) of the residents in this study previously worked as government servant and 9.2 percent (n=45) declared they work in private sector. Referring to their income, 65.8 percent (n=322) of the residents get monthly income below RM1,000 before they have retired while 34.2 percent (n=167) are above RM1,000.

Looking at the years of staying, 59.5 percent (n=291) of the residents stayed less than five years. 189 residents or 38.7 percent of the elderly already living there six to nine years and 9 of the residents living there more than ten years. 226 of them (46.2%) have one to three children. 181 (37%) have four to six children, 9.4 percent (n=46) of them have no children and 7.4 percent (n=36) have seven or more children.

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**Table 2: Cross Tabulation of Gender and Marital Status**

Variable	Gender		Total
	Male	Female	
<b>Marital Status</b>			
Never Married	12 (5.7%)	34 (12.1%)	46 (9.4%)
Married	107 (51.2%)	186 (66.4%)	293 (59.9%)
Divorced/ Separated	90 (43.1%)	60 (21.4%)	150 (30.7%)
Total	209 (100%)	280 (100%)	489 (100%)

### C. Descriptive Analysis

The discussion starts with the findings regarding the respondents' opinions on six active ageing determinants which are health, meaningful leisure, and social environment.

**Health:** The respondents' views on health are displayed in Table 3. The data shows that about 8 percent of them strongly agree that they are healthy senior citizen without having to depend on others in managing myself. 1.6 percent of them take care of their nutrition through healthy and balanced eating habits. 32.1 percent of respondents said they have enough rest and sleep to stay active, while 22.5 percent said they often see a doctor to stay in shape.

**Table 3: The Distribution of Respondents' Feedbacks on Health**

Health	SD	D	N	A	SA	Mean
	n %	n %	n %	n %	n %	
I am a healthy senior citizen without having to depend on others in managing myself.	3 0.6	173 35.4	119 24.3	155 31.7	39 8.0	3.11
I take care of nutrition through healthy and balanced eating habits.	0 0	185 37.8	149 30.5	147 30.1	8 1.6	2.96
I have enough rest and sleep to stay active.	0 0	184 37.6	148 30.3	157 32.1	0 0	2.94
Doing regular health check-ups is important to keep me fit and healthy.	0 0	288 58.9	91 18.6	110 22.5	0 0	2.64

\*SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

**Meaningful Leisure:** Table 4 shows the respondents' views on meaningful leisure in relation to active ageing. A total of 21.5 percent respondents strongly agreed that they can maintain their hobbies and often been encouraged by the care takers to participate in an activity. 20 percent strongly agreed that the activities are limited, and 19.8 percent of the respondent strongly agreed that the offered activities are adjusted to their wishes or requests.

**Table 4: The Distribution of Respondents' Feedbacks on Meaningful Leisure**

Meaningful Leisure	SD	D	N	A	SA	Mean
	n %	n %	n %	n %	n %	
The offered activities are adjusted to my wishes, requests	0 0	8 1.6	65 13.3	319 65.2	97 19.8	4.03
We are encouraged each time to participate in an activity	0 0	33 6.7	86 17.6	265 54.2	105 21.5	3.90
The variety of the activities is limited	0 0	18 3.7	92 18.8	281 57.5	98 20	3.94
I can maintain my hobbies here	0 0	33 6.7	86 17.6	265 54.2	105 21.5	3.90

\*SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

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**Social Environment:** Table 5 shows the respondents' views on social environment in relation to active ageing. A total of 20.7 percent respondents strongly agreed that the number of the activities are too small, and 54.4 percent agreed that they can learn new thing through the organized occasions. 20 percent of the respondent strongly agreed that people around the neighbourhood regularly come to their place. The social environment is very important for the elderly people to feel more comfortable and accepted by the community as well as maintaining their emotion and psychological well-being.

**Table 5: The Distribution of Respondents' Feedbacks on Social Environment**

Social Environment	SD	D	N	A	SA	Mean
	n %	n %	n %	n %	n %	
There are enough organized occasions where it is possible as resident to learn new things	0 0	139 28.4	84 17.2	266 54.4	0 0	3.26
People of the neighborhood regularly come to our place (residential care).	0 0	0 0	81 16.6	310 63.4	98 20	4.03
The number of activities is too small	0 0	30 6.1	79 16.2	279 57.1	101 20.7	3.92

\*SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

### V. DISCUSSION

The results confirmed the majority of studies in the literature that found social support had a significant impact on quality of life (Netuveli, Wiggins, Hildon, Montgomery, Blane, et al., 2006; Platts, Webb, Zins, Goldberg, Netuveli, et al., 2015; Layte, Sexton, Savva, 2013). Older people view community involvement, enjoying their social interactions, and spending time with family as positive aspects of getting older (Shahar, Earland, Abd RS, 2001). Asians place a high value on filial piety, which includes living in one home with extended families and staying in close contact with them (Laidlaw, Wang, Coelho, Power, 2010). According to a study, seniors in residential care facilities who lack social connections, support, and engagement have poorer quality of lives.

Social support is the provision of actual or fictitious resources to others in order to make them feel valued (Helgeson, 2003). For senior people who depend on groups or friends for routine activities, companionship, and to provide the necessary care for their well-being, it might be crucial (Melendez-Moral, Charco-Ruiz, Mayordomo-Rodriguwz, Sales-Galan, 2013). Positive social relationships (with family, friends, and neighbours) have been found in studies to improve quality of life. On the other hand, a lower number of social contacts, which could result from a social network losing some of its members, is strongly linked to a lower quality of life (Sok & Choi, 2012; Chan, Shoumei, Thompson, Yan, Chiu, Chien, et al., 2006). Higher levels of social support have been associated with a lower risk of mortality, illnesses, and mental disorders as well as an improvement in life quality (Reblin & Uchino, 2008; Karnell, Christensen, Rosenthal, Magnuson, Funk, 2007; Seeman, 2000). These results were in line with earlier research (Tseng, Wang, 2001; Sok, & Choi, 2012), which also noted the importance of social support for the elderly since it helps them feel valued and cherished and keeps them from feeling abandoned.

All domains of quality of life scores were significantly correlated with outdoor leisure activity. This is because engaging in recreational activities improves positive psychological and physiological processes (Kim, Yamada, Heo, & Han, 2014). Additionally, those who engage in such activities are more likely to have social interactions with others outside of their immediate circle, which may provide as an extra source of support. Leisure activity has been linked to a higher quality of life in earlier research by Paskulin and Molzahn (2007) and Luleci, Hey, and Subasi (2008). According to these research, senior citizens' quality of life can be significantly improved by engaging in recreational activities like walking, going to the mall, and gardening.

### VI. CONCLUSION

This study demonstrated that dimensions of active ageing, such as health, meaningful leisure, and social environment are very important for the elderly living in residential care facilities.

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### REFERENCES

- 1) Adams, K. B., Leibbrandt, S., & Moon, H. (2011). A critical review of the literature on social and leisure activity and wellbeing in later life. *Ageing and Society*, 31(4), 683–712. <https://doi.org/10.1017/S0144686X10001091>
- 2) Agusyana, Y., & Islandsript. (2014). *Pengolahan Data Skrip dan Penyelidikan dengan SPSS 19*. (S. Yusoff & H. Noor, Eds.). S.A. Majeed & CO Sdn Bhd.
- 3) An, S., Lee, Y. and Kim, J. T. (2013). The effect of the public exercise environment on the physical activity for the active ageing of the elderly. *Indoor and Built Environment*, 22(1), 319–331
- 4) Babbie, E. (2004). *Survey research methods*. California: Wadsworth Publishing Company.
- 5) Boudiny, K. (2013). —Active ageing||: From empty rhetoric to effective policy tool. *Ageing & Society*, 33(6), 1077–1098
- 6) Bowling, A. (2008). Enhancing later life: how older people perceive active ageing? *Aging & Mental Health*, 12(3), 293–301
- 7) Chan, S., Shoumei, J., Thompson, D., Yan, H., Chiu, H., Chien, W., et al. (2006). A cross-sectional study on the health related Quality of Life of depressed Chinese older people in Shanghai. *Int J Geriatr Psychiatry*; 21(9): 883–9
- 8) Dahany, M.-M., Drame´, M., Mahmoudi, R., Novella, J.-L., Ciocan, D., Kanagaratnam, L., Jolly, D. (2014). Factors associated with successful aging in persons aged 65 to 75 years. *European Geriatric Medicine* 5, 365–370
- 9) Dillman, D. A. (1978). *Mail and telephone surveys: The total design method* (Vol. 19). New York: Wiley.
- 10) EY2012 British Society of Gerontology. (2012). *Ageing and Society*, 32(03), 405–424
- 11) Hutchinson, S. L., & Warner, G. (2015). Meaningful, enjoyable, and doable: Optimizing older adults’ activity engagement at home. *Journal of Ageing Life Care*, (Fall 2015) 1–9
- 12) ICAA (International Council on Active Aging). (2015). International Council on Active Aging. Retrieved from <http://www.icaa.cc/>
- 13) Karnell, L., Christensen, A., Rosenthal, E., Magnuson, J., Funk, G. (2007). Influence of social support on health-related quality of life outcomes in head and neck cancer. *Head Neck*; 29(2): 143–6
- 14) Kim, J., Yamada, N., Heo, J., & Han, A. (2014). Health benefits of serious involvement in leisure activities among older Korean adults. *Int J Qual Stud Health WellBeing*.; 9: 24616
- 15) Krosnick, J. A., & Fabrigar, L. R. (1997). Designing rating scales for effective measurement in surveys. *Survey measurement and process quality*, 141-164.
- 16) Kumar, M., Abdul Talib, S., & Ramayah, T. (2013). *Business research method*. New York: Oxford University press.
- 17) Lai, M. M., Lein, S. Y., Lau, S. H., & Lai, M. L. (2016). Modeling age-friendly environment, active ageing, and social connectedness in an emerging Asian economy. *Journal of Aging Research*, 2016
- 18) Laidlaw K, Wang D, Coelho C, Power M. (2010). Attitudes to ageing and expectations for filial piety across Chinese and British cultures: a pilot exploratory evaluation. *Aging Ment Health*; 14: 283–292.
- 19) Layte R., Sexton E., Savva G. (2013). Quality of life in older age: evidence from an Irish cohort study. *J Am Geriatr Soc*. 61 (Suppl 2): S299–S305
- 20) Luleci, E., Hey, W., & Subasi, F. (2008). Assessing selected Quality of Life factors of nursing home residents in Turkey. *Arch Gerontol Geriatr*; 46(1): 57–66
- 21) Mayhew, L. (2005). Active ageing in the UK-issues, Barriers, Policy directions. *Innovation*, 18(4), 455–477
- 22) McLaughlin, S. J. (2010). Successful Aging in the United States: Prevalence Estimates From a National Sample of Older Adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 65(2), 216–226
- 23) Melendez-Moral JC, Charco-Ruiz L, Mayordomo-Rodriguwz T, Sales-Galan A. (2013). Effects of a reminiscence program among institutionalized elderly adults. *Psicothema*; 25(3): 319–23
- 24) Miller, E. (2016). Beyond Bingo: A phenomenographic exploration of leisure in aged care. *Journal of Leisure Research*, 48(1), 35–49. <https://doi.org/10.18666/JLR-2016-V48-I1-6254>
- 25) Netuveli G, Wiggins RD, Hildon Z, Montgomery SM, Blane D et al. (2006). Quality of life at older ages: evidence from the English longitudinal study of aging (wave 1). *J Epidemiol Community Heal*; 60 (4): 357–363
- 26) OECD. (2006). *Live Longer, Work Longer*. Work, (2005), 1–148
- 27) Paskulin, L., & Molzahn, A. (2007). Quality of Life of older adults in Canada and Brazil. *West J Nurs Res*.; 29(1): 10–26
- 28) Paúl, C., Ribeiro, O., & Teixeira, L. (2012). Active ageing: An empirical approach to the WHO model. *Current Gerontology and Geriatrics Research*, 2012(2002)
- 29) Platts L. G., Webb E., Zins M., Goldberg M., Netuveli G. et al. (2015). Mid-life occupational grade and quality of life following retirement: a 16-year followup of the French GAZEL study. *Aging Ment Heal*. 19 (7): 634–646



## Active Ageing of Elderly Living in Residential Care Facilities in Malaysia

- 30) Rattanapun, S., Fongkeaw, W., Chontawan, R., Panuthai, S., & Wesumperuma, D. (2009). Characteristics healthy ageing among the elderly in Southern Thailand. *Journal of Natural Sciences*, 8(2), 143-160
- 31) Reblin, M., & Uchino, B. (2008). Social and emotional support and its implication for health. *Curr Opin Psychiatry*; 21(2): 201–5
- 32) Rowe, J. W., & Kahn, R. L. (1997). Successful Aging. *The Gerontologist*, 37(4), 433– 440
- 33) Seeman, T. (2000). Health promoting effects of friends and family on health outcomes in older adults. *Am J Health Promot*;14(6): 362–70
- 34) Sekaran, U. (2003). *Research methods for business: A skill building approach* (4th editio). USA: John Wiley & Sons.
- 35) Sekaran, U. & Bougie, R. (2013). *Research methods for business: A skill building approach* (4th ed.). New York: John Wiley & Sons, Inc.
- 36) Sekaran, U. and Bougie, R. (2016). *Research methods for business: A skill building approach*. New Jersey: John Wiley & Sons.
- 37) Shahar S, Earland J, Abd RS.(2001). Social and health profiles of rural elderly Malays. *Singapore Med J*; 42: 208–213
- 38) Sidorenko, A., & Zaidi, A. (2013). Active ageing in CIS countries: Semantics, challenges, and responses. *Current Gerontology and Geriatrics Research*, 2013.
- 39) Sok, S., & Choi, J. (2012). Factors associated quality of life of elderly in Non-paid or paid assisted living facilities. *Korean J Adult Nurs.*; 24(2): 99–108
- 40) Sutipan, P., & Intarakamhang, U. (2017). Healthy Lifestyle Behavioral Needs among the Elderly with Hypertension in Chiang Mai, Thailand. *International Journal of Behavioral Science (IJBS)*, 12(1), 1–12
- 41) Sykes, K. E., & Robinson, K. N. (2014). Making the right moves: promoting smart growth and active aging in communities. *Journal of Aging & Social Policy*, 26(1–2), 166–80
- 42) Toepoel, V. (2013). Ageing, leisure, and social connectedness: How could leisure help reduce social isolation of older people? *Social Indicators Research*, 113(1), 355– 372. <https://doi.org/10.1007/s11205-012-0097-6>
- 43) Tseng, S., & Wang, R. (2001). Quality of Life and related factors among elderly nursing home residents. *Public Health Nurs.*; 18(5): 304–11



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## Effects of Work Flexibility and Compensation on Employee Performance through Job Satisfaction: Evidence from Shopee-Food East Java, Indonesia



Nurul Asfiah<sup>1</sup>, Dicky Wisnu Usdek Riyanto<sup>2</sup>, Dina Mainingrum<sup>3</sup>

<sup>1,2,3</sup>Universitas Muhammadiyah Malang

**ABSTRACT:** This study aims at analyzing the effect of work flexibility and compensation on partner performance through job satisfaction as a mediation. The population of this study was ShopeeFood driver partners in Malang Raya, East Java, Indonesia. The sampling technique used was probability sampling with simple random sampling. The samples used were 150 respondents. The data analysis method employed Structural Equation Modeling – Partial Least Square (SEMPLS) with SmartPLS 3.0 program. The findings show that work flexibility and compensation have a significant effect on performance. Compensation has a significant effect on job satisfaction but not job flexibility. The role of mediation also shows that job satisfaction is able to mediate the effect of compensation on performance, but cannot mediate the effect of work flexibility on performance.

**KEYWORDS:** Work Flexibility, Compensation, Job Satisfaction, Partner Performance

### 1. INTRODUCTION

The success of an enterprise can be achieved if the human resource works optimally. The role of partner performance is closely related to the achievement of company performance. Partner performance might be perceived as the results achieved by partners that are influenced by several factors (Asfiah, 2021). Every company needs to be aware the extent to which performance has been achieved as a reflection of success. One way that might be applied in maintaining performance is by considering the aspects of work flexibility, compensation and job satisfaction (Siregar et al., 2021).

Work flexibility is the freedom to arrange a more flexible work schedule related to the formal policies that have been set by resource management of a company. Flexibility consists of schedule flexibility related to how long to work (time flexibility), when to start work (timing flexibility) and the freedom to choose a place to work (place flexibility). The application of a flexible work schedule system is expected to make partners more comfortable and productive at work so that they can improve performance which will ultimately impact the job satisfaction. The research of Hashim et al. (2017) and Sabuhari et al. (2020) showed that work flexibility has a significant effect on improving performance. However, Fanda and Slamet (2019) showed that work flexibility has no significant effect on performance. In addition to work flexibility, compensation is also a variable that affects performance.

Compensation is all forms of financial and non-financial payments that an individual receives as an employment relationship (Dessler, 2020). This aims to boost morale which can subsequently help them to achieve the company's targets and objectives, as well as to improve their performance. In addition to boost the morale, compensation also aims to maintain performance. Compensation has a significant effect on performance (Siddiqi & Tangem, 2018; Kafid & Putra, 2020). The provision of compensation affects the productivity of human resources, which provides enormous benefits for the company. However, several researches showed that compensation has no effect on performance (Rinny et al., 2020; Rosalia et al., 2020; Siregar et al., 2021). This happens due to the drivers' dissatisfaction with the amount of compensation received. The target point system that is not achieved might reduce the drivers' job satisfaction and performance.

The research gap of this article lies in the intervening variable (mediation), namely job satisfaction. Job satisfaction is expected to mediate the effect of work flexibility and compensation on performance. Robbins & Judge (2017) explained that job satisfaction is a pride and positive feeling towards work through evaluations of job characteristics. The increase of job satisfaction with a flexible work schedule and good compensation will have an impact on improving performance. Work flexibility also has a significant effect on performance through job satisfaction (Wicaksono, 2019). Sudiarditha (2019) also explained that job satisfaction is able to significantly mediate the effect of compensation on performance. Work flexibility and compensation aim to

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provide job satisfaction which somehow affect performance improvement. The provision of remuneration for employees can meet physical needs as well as social status recognition in order to obtain job satisfaction.

This study discusses the Shopee-food phenomenon which began to operate in mid-2021 in several big cities in East Java. Shopee-food driver partners have a working time of 24 hours with a target of 12 deliveries, and 1 trip equals to 100 points. However, some drivers are unable to reach the work target due to numerous factors. The failure of achieving work targets might have an impact on the decreasing of driver performance and job satisfaction. The driver partners performance can also be assessed from the star rating given by the customer, which provide a quantitative assessment to their performance. Based on observations on Shopee-food, the maximum performance score of driver partners is 5.00, and only drivers who obtain over 4.70 will get daily bonus after completing the target. Otherwise, drivers with less than 4.70 score will not get a daily bonus due to the inoptimal work. This will result in a decrease of drivers' performance and job satisfaction. In addition to the target, work flexibility and compensation also have an impact on the less stable performance of partners at work.

## **2. LITERATURE REVIEW**

### **2.1 Partner Performance**

Performance is an actual behavior displayed by each individual as a result of his role in the company. The success of the company is significantly influenced by partner performance. Partner performance might be perceived as the results achieved by partners that are influenced by several factors (Asfiah, 2021). Partner performance is an achievement resulting from various roles that function in a company (Purwanto & Trihudyatmanto, 2018). The performance assessment toward partners will provide benefits for company managers in providing feedback to identify potential problems and how to solve them. Partner performance needs to be taken into account to determine the extent of success that has been achieved and to identify problems related to performance.

### **2.2 Work Flexibility**

Work flexibility is a working system granting independence for the workers in setting their work schedule aiming to instill moral, relieve work stress, and improve engagement of the workers in an organization (Hashim et al., 2017). Work flexibility is a freedom granted to human resources in a company to determine work schedules (Kabalina et al., 2019). The implementation of work flexibility facilitates human resources to discover alternatives of strategy in a company's competitive environment since a flexible worker can adapt better to the company's changing and uncertain situations and challenges. Therefore, work flexibility is crucial in improving the quality of human resources. Sabuhari et al. (2020), Wicaksono (2019), and Baeza et al. (2018) discovered that work flexibility significantly affects work performance. It also has an impact on work satisfaction. Moreover, work flexibility is a significant antecedent in establishing work satisfaction (Ma, 2018; Wicaksono, 2019; Siregar et al., 2021).

**H1: Work flexibility significantly affects partner's work performance H3: Work flexibility significantly affects work satisfaction**

### **2.3 Compensation**

Compensation refers to a material or non-material reward and allowance in exchange for one's service as part of a working relationship (Dessler, 2020). It aims to assist a company in achieving its targets and guaranteeing fairness internally and externally. Compensation is what the workers gain in exchange for their contribution and service to a company (Rivai & Sagala, 2009). It is crucial in human resources management since it is a sensitive aspect of working relationships. A compensation system helps secure organizational values and facilitate a company's target achievement. The obtained compensation shows the status and recognition of a position in a company. If employee benefits from status and fulfillment, work satisfaction increases. Compensation significantly affects work performance (Tarmidi et al., 2021). Besides affecting work performance, it also involves work satisfaction. Sudiarditha (2019), Sumardjo et al. (2021) and Tarmidi et al. (2021) explained that proper compensation significantly affects work satisfaction.

**H2: Compensation significantly affects partner's work performance H4: Work compensation significantly affects work satisfaction**

### **2.4 Work Satisfaction**

Work satisfaction is a proud and positive feeling towards an accomplished work observed through work characteristic evaluation (Robbins & Judge, 2017). It can be perceived as one's emotional state where the reward value provided by a company meets the expected remuneration rate. The remuneration rate is commensurate with the level of work satisfaction. Work satisfaction indicates pleasure or discouragement and satisfaction or discontentment over a given task (Rivai & Sagala, 2009). Better

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judgement on the desired task leads to higher work satisfaction. Companies believe that higher work satisfaction generates a more increased level of productivity. Work satisfaction significantly affects work performance (Yusuf et al., 2020; Rinny et al., 2020; Rosalia et al., 2020). It also plays as an antecedent and mediator. Wicaksono (2019) showed that work satisfaction significantly mediates the effect of work flexibility and compensation on work performance. Moreover, Sudiarditha (2019) confirmed that compensation significantly affects work performance through work satisfaction (Marnis & Priyono, 2008).

**H<sub>5</sub>: Work satisfaction significantly affects partner's work performance**

**H<sub>6</sub>: Work satisfaction significantly mediates the effect of work flexibility on partner's work performance H<sub>7</sub>: Work satisfaction significantly mediates the effect of compensation on partner's work performance**

### 3. METHODOLOGY (10PT, TIMES NEW ROMAN, BOLD, CENTRED)

This research applies the quantitative method with an explanatory approach. The quantitative method comprises numbers that can be processed and analyzed with mathematics calculation or statistics (Sekaran, 2003). The characteristic of this research is replication; thus, the hypothesis test results should be supported by previous researches and repeated with an approximately similar condition. The population covers ShopeeFood drivers in Malang City, Malang Regency, and Batu City. The drivers were selected through simple random sampling. Simple random sampling refers to a sampling technique using probability in which every single element of a population has a recognized chance to be selected as a subject (Sekaran, 2003). There are 150 respondents obtained by multiplying the number of the indicator by five (Sekaran, 2003).

The researcher collected the data using Google Form as a questionnaire with a 1-5 point Likert scale. The scale ranges from Strongly Disagree (score 1), Disagree (score 2), Uncertain (score 3), Agree (score 4), and Strongly Agree (score 5).

Moreover, the researcher used SPSS to measure the initial research instrument and Smart PLS to test the Outer Model (Loading Factor, Cronbach Alpha, Composite Reliability, and Average Variance Extracted) and Inner Model (Path Analysis, Determination Coefficient, T-Statistic, and P-Value) (Haryono, 2017).

The drivers performance is measured by 1) work strategy; 2) quality service; 3) quantity of work; 4) punctuality; 5) creativity; 6) initiative; 7) cooperation; 8) resilience at work; and 9) individual ability (Asfiah, 2021; Rosalia et al., 2020; Sabuhari et al., 2020; Yusuf et al., 2020).

The compensation is measured by 1) wages; 2) incentives; 3) facilities; 4) protection against work accidents; 5) payment on time; and 6) compensation excluding wages and incentives (Siregar et al., 2021; Wicaksono, 2019).

Work flexibility is measured by 1) time flexibility; 2) timing flexibility; 3) place flexibility; 4) flexible communication; 5) flexibility in determining co-workers; and 6) flexibility of work program (Kabalina et al., 2019; Siregar et al., 2021)

Job satisfaction is measured by 1) the work; 2) wages; 3) incentives; 4) colleagues; 5) work safety; 6) management of organization; 7) knowledge; 8) work skill; and 9) attitude (Rosalia et al., 2020; Sabuhari et al., 2020; Tarmidi et al., 2021).

### 4. RESULTS AND DISCUSSION

The result showed that the respondents in this study have characteristics that can be seen from the categories of gender, age, education level and length of work. In the following, the researches present the characteristics of the respondents in table 1.

**Table 1 Respondents' Identity**

Gender	Male = 119 (79, 3 % )			Female = 31 (20,7%)		
Age	<21 y.o = 5(3,3% (52,7%)	21-30 y.o = 79 (28,7%)	31-40 y.o = 43 (11,3%)	41-50 y.o = 17 (6,4%)	51-60 y.o = 6 (2,7%)	
Education Level	Junior/Senior School = 140 (93,3%)	High Diploma= 6 (4%)	Undergraduate = 4 (2.7%)			
Length of work	<1 month = 7 (4,7%)	1-2 month = 60 (40%)	3-4 month = 83 (55,3%)			

Table 1 shows that most respondents are men, namely 119 respondents or 79.3%. They are at the age of 21–30, 79 respondents or 52.7%. Their education levels are mostly senior/vocational high school which is 140 respondents or 93.3%. Length of work is 3–4 months with 83 respondents or 55.3%.

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## 4.1 Measurement Model

Analysis of the instrument in this study before entering SmartPLS, the instrument was tested using SPSS version 2.6 to determine the validity and reliability. In the following, the researchers present the results of the instrument test using SPSS 2.6 in table 2.

Table 2. Data Instrument Test

	<i>Pearson Correlation</i>	<i>Corrected Item Total Correlation</i>	<i>Validity</i>	<i>Cronbach Alpha</i>	<i>Reliability</i>
<b>Work Flexibility (FLX)</b>					
FLX1	0.711**	0.568	Valid	0.849	Reliabel
FLX2	0.794**	0.681	Valid		
FLX3	0.766**	0.649	Valid		
FLX4	0.661**	0.526	Valid		
FLX5	0.807**	0.699	Valid		
FLX6	0.784**	0.671	Valid		
<b>Compensation (COM)</b>					
COM1	0.698**	0.553	Valid	0.786	Reliable
COM2	0.712**	0.557	Valid		
COM3	0.652**	0.458	Valid		
COM4	0.748**	0.612	Valid		
COM5	0.713**	0.569	Valid		
COM6	0.663**	0.485	Valid		
<b>Job Satisfaction (STF)</b>					
STF1	0.526**	0.384	Valid	0.847	Reliable
STF2	0.684**	0.586	Valid		
STF3	0.718**	0.632	Valid		
STF4	0.723**	0.628	Valid		
STF5	0.740**	0.652	Valid		
STF6	0.719**	0.624	Valid		
STF7	0.616**	0.483	Valid		
STF8	0.625**	0.499	Valid		
STF9	0.721**	0.629	Valid		
<b>Performance (EMP)</b>					
EMP1	0.760**	0.682	Valid	0.842	Reliable
EMP2	0.751**	0.645	Valid		
EMP3	0.719**	0.592	Valid		
EMP4	0.586**	0.437	Valid		
EMP5	0.609**	0.509	Valid		
EMP6	0.613**	0.517	Valid		
EMP7	0.740**	0.646	Valid		
EMP8	0.633**	0.532	Valid		
EMP9	0.600**	0.492	Valid		

Table 2 shows that the variables and the indicators are significantly correlated, verified by the *Pearson Correlation* result, close to 1. The *Corrected Item Total Correlation* value is more than the critical value 0.1603 in the r table with  $\alpha = 5\%$  and  $n = 150$ , which confirmed that the indicator is valid (Ghozali, 2018). The *Cronbach Alpha* is more than 0.60 confirmed that each variable is reliable (Ghozali, 2018). The test results indicate that the questionnaire can measure the relationship between the independent variable and dependent variable.

Table 3 Loading Factor

Item	<i>Loading Factor (early stage)</i>	<i>Loading Factor (final stage)</i>	<i>Factor Explanation</i>
<b>Work Flexibility (FLX)</b>			
FLX1	0.704	0.709	
FLX2	0.782	0.784	
FLX3	0.799	0.805	

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FLX4	0.723	0.733	
FLX5	0.762	0.745	
FLX5	0.741	0.723	
<b>Compensation (COM)</b>			
COM4	0.788	0.836	
COM5	0.763	0.817	
COM6	0.674	0.732	
<b>Job Satisfaction (STF)</b>			
STF2	0.720	0.749	
STF3	0.749	0.753	
STF4	0.719	0.736	
STF5	0.754	0.796	
STF6	0.736	0.795	
<b>Performance (EMP)</b>			
EMP5	0.696	0.737	
EMP6	0.713	0.761	
EMP8	0.728	0.823	
EMP9	0.702	0.824	-

Based on table 3, COM1, COM2, COM3, STF1, STF7, STF8, STF9, EMP1, EMP2, EMP3, EMP4, and EMP7 indicators are deleted, due to the *loading factor* value used is 0.70, though the limit value is 0.50-0.60, so it is not reliable to analyze. Whereas the other indicators with a value of more than 0.70 are reliable.

**Table 4 Outer Model Test (Construct Reliability dan Validity)**

Variable	Cronbach's Alpha	Composite Reliability	AVE	Explanation
Work Flexibility	0.848	0.885	0.563	Reliable
Compensation	0.710	0.838	0.634	Reliable
Job Satisfaction	0.824	0.876	0.587	Reliable
Performance	0.795	0.867	0.620	Reliable

According to table 4, the *Average Variance Extracted* (AVE) results have met the minimum criteria above 0.50. The *Composite Reliability* and *Cronbach's Alpha* have also met the criteria above 0.70. Hence, it is reliable to further analyze.

SmartPLS analysis for the Inner Model test uses data of 150 respondents with Complexity: Basic Bootstrapping, Confidence Interval Method: Bias-Correccted and Accelerated (IBCA) Bootstrap, Subsamples: 300, Significance Level: 0.05 and Test Type: Two Tailed.

**Table 5 Direct Relationship**

Variable	Original Sample	Standard Deviation	T Statistic	P Value
FLX-> EMP	0.038	0.014	2.672	0.008
COM-> EMP	-0.299	0.057	5.283	0.000
FLX-> STF	0.035	0.039	0.886	0.376
COM-> STF	0.920	0.024	37.990	0.000
STF-> EMP	1.244	0.048	26.052	0.000

Based on table 5, the effect of work flexibility on performance is significant with t statistics  $2.672 > 1.96$  and significance  $< 0.05$ , equal to 0.008. It indicates that the implementation of work flexibility improves the driver's work performance. Also, the effect of compensation on the performance is confirmed significant with t statistics  $5.283 > 1.96$ , and significance  $< 0.05$ , equal to 0.000, which shows that the received compensation can also improve the driver's work performance. However, the work flexibility does not affect job satisfaction with t statistics  $0.886 < 1.96$ , and significance  $> 0.05$ , equal to 0.376. The flexible work

## Effects of Work Flexibility and Compensation on Employee Performance through Job Satisfaction: Evidence from Shopee-Food East Java, Indonesia

schedule is considered unsatisfactory and causes the drivers to be confused because they have no working operation hours. Moreover, compensation on work satisfaction is significant with  $t$  statistics  $37.990 > 1.96$ , and significance  $< 0.05$ , equal to  $0.000$ . Providing reasonable compensation can stimulate drivers to be more productive and impact increasing work performance and job satisfaction. Job satisfaction significantly affects work performance with  $t$  statistics  $26.052 > 1.96$ , and significance  $< 0.05$ , equal to  $0.000$ , which means that the drivers' job satisfaction impacts work performance.

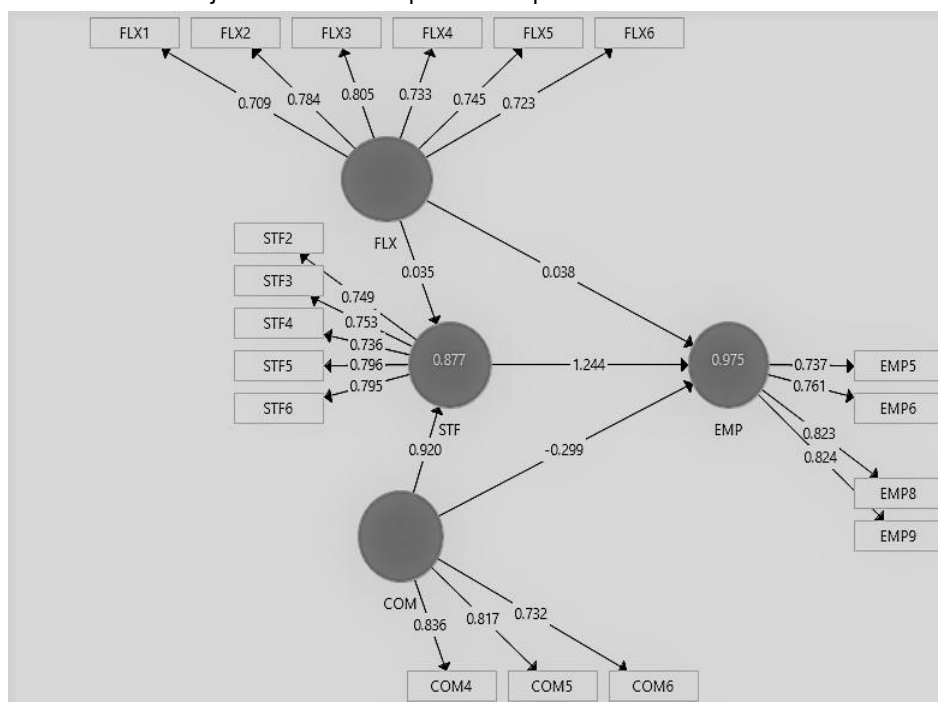


Figure 1. The Structural Model

### 4.3 Discussion

Based on the results of testing the first hypothesis regarding the direct relationship of work flexibility to performance, it shows that work flexibility has a significant effect on performance. These results are in line with the research of Sabuhari *et al.* (2020) and Siregar *et al.* (2021) that work flexibility has a significant effect on performance. The implementation of work flexibility makes it easier for *drivers* to manage work schedules so they can work more productively. However, the results of this study are not in line with the research of Fanda and Slamet (2019) and Saputro *et al.* (2021) which shows the results that work flexibility has no significant effect on performance. Flexible work schedules make *drivers* work as they please which results in decreased performance.

Work flexibility in this study is measured based on six indicators, namely freedom in determining when to start work, freedom in determining the duration of work, freedom in determining *spot points* in carrying out work, freedom in contacting *servers*, freedom in determining colleagues and freedom in determining target performance points. These results prove that the performance of *drivers* increases when they are free to determine when to start working with the duration and *spot point* as desired. In addition, they are also free to contact *the server* if there are problems in working for 24 hours. Freedom in determining co-workers has an impact on improving performance because it reduces work stress. *Drivers* are free to determine the target point system starting from safe one (6 times delivery) to maximum safe (12 deliveries).

The results of testing the second hypothesis of the relationship between compensation and performance, show that compensation has a significant effect on performance. These results are in line with research (Emerole & Ogbu, 2019; Siddiqi & Tangem, 2018; Kafid & Putra, 2020). Providing good compensation can foster the morale of the *drivers* which can have an impact on improving performance. However, the research results are not in line with the research (Rosalia *et al.*, 2020; Siregar *et al.*, 2021; Rinny *et al.*, 2020). This happens because the target point system that is not achieved with insufficient compensation causes a decrease in the performance of the *drivers*.

Compensation in this study is measured based on six indicators, namely the amounts of wages, incentives, facilities provided, protection against work accidents, timely payments, and compensation outside of wages and incentives. These results prove that the work accident protection guarantee provided makes *drivers* work more optimally. *Shopee-food* cooperates with the Salvus company in relation to work accident insurance by providing a fee of Rp. 10,000,000,- for cases related to criminal and permanent

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disability. Cost Rp. 1.000.000,- for minor accidents and costs Rp. 2,000,000, - for the cost of death money. The payment system on time, namely the day after work, has an impact on improving performance. Payments outside of wages and incentives are also very important because when a fictitious order occurs, the *driver* will not feel a loss because their money will be returned on the condition that the purchased food is given to the orphanage and documented as a report.

The results of testing the third hypothesis regarding the direct relationship of work flexibility to job satisfaction, indicate that work flexibility has no effect on job satisfaction. These results are not in line with research (Ma, 2018 ; Siregar *et al.* , 2021 ; Findriyani & Parmin, 2021 ; Maya & Anggresta, 2020) which shows that work flexibility has a significant effect on job satisfaction. The implementation of a flexible work program should be able to increase job satisfaction. However, the results of this study indicate that having a flexible work schedule has no significant effect on *driver job satisfaction*, because with flexible working hours they feel confused in determining the appropriate working hours because there is no main work schedule.

These results prove that job satisfaction cannot be influenced by freedom in determining when to start work, freedom in determining the duration of work, freedom in determining *spot points*, freedom to contact *the server* when an obstacle occurs, freedom in determining colleagues and freedom in determining performance target points. Companies need to provide core hours of work with additional attractive bonuses. Because the culture of Indonesian people work with the rules of core working hours. The facts in the field show that working with very flexible rules, it turns out that *drivers* are still not satisfied. A flexible work schedule sometimes makes *drivers* feel confused about starting work because there are no main hours at work. Unlike the case with Gojek, which enforces main working hours at 16.00-21.00 with additional attractive bonuses.

Testing the fourth hypothesis, namely the relationship between compensation and job satisfaction, shows that compensation has a significant effect on job satisfaction. These results are in line with research (Yusuf *et al.* , 2020; Sudiarditha, 2019 ; Siregar *et al.* , 2021) . Providing compensation in accordance with the expectations of the *drivers* can increase passion in work which can have an impact on increasing job satisfaction. However, the results of the study are not in line with the research of Rosalia *et al.* (2020) which shows the results that compensation has no significant effect on job satisfaction. Giving compensation that is not in accordance with the work that has been done can reduce job satisfaction.

Compensation in this study is measured based on accident protection, timely payment, and compensation outside of wages and incentives. The direct test results show that the compensation variable has a dominant effect on job satisfaction. This happens because the work accident insurance provided makes drivers work more calmly because they have insurance in the event of a work accident. *Drivers* are very satisfied regarding the payment system on time the day after work. *Drivers* also feel safe when they get a fictitious order because their money will be returned by *Shopee-food*, thereby reducing losses at work.

The results of testing the fifth hypothesis of the relationship between job satisfaction and performance, show the results that job satisfaction has a significant effect on performance. In line with research (Sudiarditha, 2019; Sabuhari *et al.* , 2020; Yusuf *et al.* , 2020) . Job satisfaction achieved can have a positive impact, namely the achievement of increased performance. However, it is not in line with the research of Maya and Anggresta (2020) . Someone who is dissatisfied with his job will tend to show negative behavior that can reduce performance.

Job satisfaction is measured through nine indicators, namely the work itself, wages, incentives, co-workers, security at work, organization in management, knowledge of work, skills at work and attitudes at work. These results prove that the wages of Rp. 8.000, - within 1-3 km delivery distance is enough because compared to similar platforms, *Shopee-food delivery fees* are higher. Co-workers who always change will also reduce boredom at work so as to create supportive working conditions. Safety at work with accident insurance coverage gives *drivers a sense of calm* so they can focus on improving performance. Organizations with good management in the form of quick responses to complaints about problems at work also have an impact on increasing *driver satisfaction and performance*.

Based on the results of testing the sixth hypothesis of the *Specific Indirect Effect* of the relationship of work flexibility on performance through job satisfaction, it shows that job satisfaction is not able to mediate the effect of work flexibility on performance. This is consistent with the results of the Sobel test which shows that job satisfaction is not able to mediate the effect of work flexibility on performance. These results are not in line with research (Wicaksono, 2019; Findriyani & Parmin, 2021; Maya & Anggresta, 2020) which shows the results that job satisfaction is able to significantly mediate the effect of work flexibility on performance. If job satisfaction is not achieved it can have an impact on decreasing performance.

The researcher concludes that job satisfaction is not able to mediate the effect of work flexibility on performance. This happens because the implementation of a flexible work schedule is considered confusing for *drivers* in determining the main hours of work. Job satisfaction that is not achieved can reduce the performance of the *drivers*. In contrast to Gojek, although the company provides a flexible work schedule, the main working hours are still determined. *Drivers tend to work during* prime hours with the



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aim of obtaining bonuses determined by the company. Of course, the bonus given when carrying out work during the main working hours is higher than outside the main working hours.

Based on the results of testing the seventh hypothesis of the *Specific Indirect Effect* of compensation relationship on performance through job satisfaction, it shows that job satisfaction is able to mediate the effect of compensation on performance. This is in line with the results of the Sobel test which shows that job satisfaction is able to mediate the effect of compensation on performance. These results are in line with the research of Wicaksono (2019) and Sudiarditha (2019) which showed that job satisfaction was able to significantly mediate the effect of compensation on performance. Provision of adequate and timely compensation can increase job satisfaction which has an impact on improving performance. However, it is not in line with research by Maya and Anggresta (2020), providing compensation that is not commensurate with the sacrifices in work has an impact on decreasing job satisfaction and performance.

The researcher concludes that the better the compensation given in the form of a guarantee of protection against work accidents, the impact on the *driver's feeling of feeling safe at work*. Paying on time the day after work has an impact on increasing job satisfaction and performance. Compensation other than wages and incentives, namely payments for fictitious orders received by *drivers*. The company will provide compensation for the fictitious order on the condition that the food must be delivered to the orphanage and documented.

### 5. CONCLUSION

Work flexibility does not have a significant effect on performance, because a flexible work schedule makes drivers work as they please which has an impact on performance degradation.

A timely payment system is very attractive to drivers, and has an impact on improving performance. Payments outside of wages and incentives are also very important because when a fictitious order occurs, the driver will not feel a loss because their money will be returned on the condition that the purchased food is given to the orphanage and documented as a report.

Job satisfaction cannot be influenced by freedom in determining when to start work, duration of work, determining spot points, contacting servers when problems occur, determining co-workers and determining target performance points. Companies need to provide core hours of work with additional bonuses that are more attractive.

Compensation has a dominant effect on job satisfaction, which is caused by the existence of a work accident guarantee for drivers while working. Drivers are very satisfied with the payment system on time the day after work, and feel safe when they get a fictitious order because their money will be returned by Shopee-food, thereby reducing losses at work. Therefore, the provision of wages is considered sufficient compared to similar platforms.

The results also reveal that job satisfaction is not able to mediate the effect of work flexibility on performance. This happens because the implementation of a flexible work schedule is considered confusing, and will be able to reduce the performance of the drivers.

The next conclusion is that the better compensation in the form of guarantees for protection against work accidents, the impact on the sense of security at work, as well as proper payment.

### REFERENCES

- 1) Asfiah, N. (2021). Do Islamic social entrepreneurship moderate Islamic leadership and emotional intelligence? Evidence from micro and small enterprises fostered by 'Aisyiyah. *Journal of Innovation in Business and Economics*, 5(01), 23–34. <https://doi.org/10.22219/jibe.v5i01.16221>
- 2) Baeza, M. A., Gonzalez, J. A., & Wang, Y. (2018). Job flexibility and job satisfaction among Mexican professionals: a sociocultural explanation. *Employee Relations*, 40(5), 921–942. <https://doi.org/10.1108/ER-12-2016-0236>
- 3) Beede Emerole, D. O., & Ogbu Edeh, F. (2019). The Effect of Compensation on Employee Performance in Nigeria Civil Service: A Study of Rivers State Board of Internal Revenue Service. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3480547>
- 4) Dessler, G. (2020). *Human Resource Management* (Sixteenth). New York : Pearson.
- 5) Fanda, N. M., & Slamet, M. R. (2019). Pengaruh Gaji, Jam Kerja Fleksibel Dan Stres Kerja Terhadap Kinerja Karyawan Pada
- 6) Perusahaan Di Kota Batam. *Journal of Applied Managerial Accounting*, 3(1), 81–95. <https://doi.org/10.30871/jama.v3i1.965>
- 7) Findriyani, F., & Parmin, P. (2021). Pengaruh Self Efficacy dan Fleksibilitas Kerja Terhadap Kinerja Karyawan dengan Kepuasan Kerja sebagai Variabel Mediasi. *Jurnal Ilmiah Mahasiswa ...*, 3(4), 798–816. <http://journal.stieputrabangsa.ac.id/index.php/jimmba/article/view/944>

## Effects of Work Flexibility and Compensation on Employee Performance through Job Satisfaction: Evidence from Shopee-Food East Java, Indonesia

- 8) Ghozali, I. (2018). *Aplikasi Analisis Multivariete dengan Program IBM SPSS 23*. Semarang: Badan Penerbit Universitas Diponegoro.
- 9) Haryono, S. (2017). Metode SEM untuk penelitian manajemen dengan AMOS LISREL PLS. *Luxima Metro Media*, 450.
- 10) Hashim, M., Ullah, M., & Azizullah Khan, M. (2017). Impact of Time Flexibility on Employees' Performance: a Study of Teaching Faculty in Government Colleges of Management Sciences Peshawar. *City University Research Journal Special Issue: AIC, Malaysia PP*, 206–212. [http://www.cityuniversity.edu.pk/curj/Journals/Journal/special\\_aic\\_16/21.pdf](http://www.cityuniversity.edu.pk/curj/Journals/Journal/special_aic_16/21.pdf)
- 11) Kabalina, V., Zelenova, O., & Reshetnikova, K. (2019). Contemporary Human Resource Management Practices in Russia: Flexibility under Uncertainty. *International Studies of Management and Organization*, 49(4), 422–440. <https://doi.org/10.1080/00208825.2019.1646490>
- 12) Kafid, M., & Putra, B. A. (2020). the Effect of Compensation, Motivation, and Work Satisfaction on Ojek Online Driver Performance in Surabaya. *IJEET : International Journal of Electrical Engineering and Information Technology*, 2(2), 10–18. <https://doi.org/10.29138/ijeet.v2i2.1153>
- 13) Ma, X. (2018). The effect mechanism of work flexibility on employee job satisfaction. *Journal of Physics: Conference Series*, 1053(1). <https://doi.org/10.1088/1742-6596/1053/1/012105>
- 14) Marnis dan Priyono. (2008). *Manajemen Sumber Daya Manusia*. Sidoarjo : Zifatama Publisher.
- 15) Maya, S., & Anggresta, V. (2020). Analisis Variabel yang Membentuk Kinerja pada Masa Covid 19. *Sosio E-Kons*, 12(3), 253. <https://doi.org/10.30998/sosioekons.v12i3.7700>
- 16) Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- 17) Purwanto, H., & Trihudiyatmanto, M. (2018). Pengaruh Intensi Berwirausaha, Orientasi Kewirausahaan Terhadap Kinerja Usaha dengan Motivasi Sebagai Variabel Intervening pada Sentra UMKM Carica di Wonosobo. *Journal of Economic, Management, Accounting and Technology*, 1(1), 42–52. <https://doi.org/10.32500/jematech.v1i1.211>
- 18) Rinny, P., Bohlen Purba, C., & Handiman, U. T. (2020). The Influence Of Compensation, Job Promotion, And Job Satisfaction On Employee Performance Of Mercubuana University. *Www.ljbm.Com International Journal of Business Marketing and Management*, 5(2), 2456–4559. [www.webometrics.info/Asia/Indonesia](http://www.webometrics.info/Asia/Indonesia)
- 19) Rivai, V., & Sagala, E. J. (2009). Manajemen sumber Daya Manusia untuk Perusahaan, edisi kedua. In *Rajawali Pers*. Rajawali Pers.
- 20) Robbins, S. P., & Judge, T. A. (2017). *Organizational Behavior*, Seventeenth Edition, Global Edition. *Pearson Education Limited*, 747.
- 21) Rosalia, P. D., Mintarti, S., & Heksarini, A. (2020). The Effect of Compensation and Motivation on Job Satisfaction and Employee Performance at SMK Medika Samarinda. *Saudi Journal of Business and Management Studies*, 5(7), 448–454. <https://doi.org/10.36348/sjbms.2020.v05i07.009>
- 22) Sabuhari, R., Sudiro, A., Irawanto, D. W., & Rahayu, M. (2020). The effects of human resource flexibility, employee competency, organizational culture adaptation and job satisfaction on employee performance. *Management Science Letters*, 10(8), 1777–1786. <https://doi.org/10.5267/j.msl.2020.1.001>
- 23) Sekaran, U. (2003). *Research and Markets: Research Methods for Business - A Skill Building Approach*. In *John Wiley & Sons*. <https://doi.org/http://dx.doi.org/10.1108/17506200710779521>
- 24) Siddiqi, T., & Tangem, S. (2018). Impact Of Work Environment, Compensation, And Motivation On The Performance Of Employees In The Insurance Companies Of Bangladesh. *South East Asia Journal Of Contemporary Business, Economic and Law*, 15(5), 153–162.
- 25) Siregar, L. P., Hetami, A. A., & Bharata, W. (2021). Pengaruh Kompensasi dan Fleksibilitas Driver Gojek Terhadap Kinerja Dengan Kepuasan Kerja Sebagai Variabel Intevening. *Jurnal Administrasi Bisnis*, 1 No.1, 18–29.
- 26) Sudiarditha, I. K. R. (2019). Compensation and Work Discipline on Employee Performance With Job Satisfaction As Intervening. *Trikonomika*, 18(2), 80–87. <https://doi.org/10.23969/trikononika.v18i2.1755>
- 27) Sumardjo, M., Amar, M., & Siswantini, T. (2021). Pengaruh Kompensasi, Pelatihan, dan Motivasi Kerja Terhadap Kepuasan Kerja Driver Grab. *Journal of Business Management, Economic, and Accounting National Seminar*, 2(1), 834–847.
- 28) Tarmidi, D., Simbolon, R., Putra, W. A., Sulaeman, A. R., & Farhan, M. (2021). The Effect of Financial Compensation and Work Stress on the Job Satisfaction of Go\_Jek (Go-Ride) Driver Partners in Bandung Area in the Covid-19 Pandemic. *Turkish Journal of Computer and Mathematics Education*, 12 No.4, 740–746. <https://doi.org/https://doi.org/10.17762/turcomat.v12i4.558>

## Effects of Work Flexibility and Compensation on Employee Performance through Job Satisfaction: Evidence from Shopee-Food East Java, Indonesia

- 29) Wicaksono, I. S. (2019). *Pengaruh Kompensasi dan Fleksibilitas Kerja Driver Gojek Terhadap Kinerja Dengan Kepuasan Kerja Sebagai Variabel Intervening*. Fakultas Ekonomi Universitas Islam Indonesia.
- 30) Yusuf, D. C., Hamzah, D., & Yusuf, R. M. (2020). The Effect of Compensation and Job Environment on Employee Loyalty through Job Satisfaction as an Intervening Variable. *Hasanuddin Journal of Business Strategy*, 2(4), 76–84.  
<https://doi.org/10.26487/hjbs.v2i4.370>



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## The Influence of Company Size and Profitability on Audit Delay with Public Accounting Firm's Reputation as a Moderating Variable (Empirical Study on Manufacturing Companies in the Consumer Goods Industry Sector Listed on the Indonesia Stock Exchange 2016 – 2020)



Erwin Indriyanto<sup>1</sup>, Devi Dwi Rosmalia<sup>2</sup>

<sup>1,2</sup>Fakultas Ekonomi dan Bisnis, Universitas Nasional

**ABSTRACT:** This study aims to obtain empirical evidence on the effect of firm size and profitability on audit delay, which is moderated by the reputation of the public accounting firm. The sample in this research is manufacturing companies in the consumer goods industry sector which are listed on the Indonesia Stock Exchange during the 2016-2020 period. Samples were collected by purposive sampling method. A total of 115 samples were obtained. The data used is secondary data that comes from the company's financial statements. Hypothesis testing using multiple regression analysis techniques and Moderated Regression Analysis (MRA). The results of this study indicate that firm size has no effect on audit delay, and profitability has a negative effect on audit delay. This study proves that Public Accounting Firm reputation cannot moderate the relationship between firm size and audit delay, but Public Accounting Firm reputation is able to moderate the relationship between profitability and audit delay.

**KEYWORDS:** Firm size, profitability, Public Accounting Firm reputation, audit delay.

**JEL Classification:** M41, M42

### INTRODUCTION

Companies that go public are currently growing and the number of audit requests for financial statements is getting higher. Financial statements are the final result of the accounting process which is usually presented on an annual basis which has an important role for the company because it serves to convey financial information to parties in need such as investors, creditors, company owners, and company management. With the financial statements, the party can find out the actual performance and health of the company, therefore, the information submitted in the financial statements must be of high quality. Financial statements will be useful to users if they meet four qualitative characteristics including understandability, comparability, relevance, and reliability. The fulfillment of these characteristics is important in the preparation of the financial statements of an entity.

Financial statements are useful when they are presented accurately and in a timely manner. Timeliness is one of the most important aspects in financial statements, the information contained in it becomes irrelevant for decision making if the financial statements are not presented correctly (Darmawan and Widhiyani, 2017).

With the existence of an auditor as a third party to ensure that financial statements can be presented in a transparent and timely manner so that the interests of the principal can be protected. Therefore, the annual financial statements prepared by the company can be relied upon if it has been audited by the auditor and has been given an opinion by the auditor. Auditors need a duration in the implementation of the audit process until the audit report is issued, this is done so that the audited financial statements can meet the qualitative characteristics and the Auditor Professional Standards (SPAP) issued by the Indonesian Institute of Certified Public Accountants (IAPI). The period of time required by the auditor to complete the audit report starting from the closing date of the financial year until the audit report is issued is called audit delay.

The obligation to submit financial reports has been regulated in the attachment to the decision of BAPEPAM-LK Number KEP-431/BL/2012 No. X.K.6 concerning the submission of periodic annual financial reports of issuers or public companies, that all publicly listed companies that have been registered in the capital market are required to submit periodic reports and other

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incidental reports to the Capital Market and Financial Institution Supervisory Agency (BAPEPAM-LK). In addition, BAPEPAM-LK as the capital market authority also regulates the deadline for submitting financial reports that must be complied with by all public companies, that the submission of annual financial reports must be submitted no later than the end of the fourth month (120 days) after the financial year ends, which is December 31 every year. year (OJK, 2012). With this regulation, companies and auditors are required to complete financial reports and audit reports before the deadline determined by the OJK. Companies that submit after the specified time limit will receive sanctions.

On March 2, 2021, based on the letter of the Financial Services Authority No. S-30/D.04/2021 regarding the affirmation, extension, or revocation of the relaxation policy in the wake of the COVID-19 pandemic, the relaxation regulated based on the previous IDX decision is still valid until it is revoked by the exchange and declared invalid. BEI (2021) through the submission of financial statements ending as of December 31, 2020, there were 52 listed companies that had not submitted audited financial reports until June 30, 2021, so that IDX gave written warning II and a fine of Rp. 50,000,000 to each company.

From the information on the IDX's official website, it can be concluded that between 2016 and 2020 there were companies that were late in submitting financial reports accompanied by audit reports. The delay in submitting audited financial statements from 2016 to 2020 was more than 50 companies. This proves that there are problems that affect the presentation of the audited financial statements. The phenomenon of audit delay can be seen from mass media publications or news coverage throughout 2016-2020.

Based on the background of the problem that has been described, the research question of this study that if company size and profitability affect audit delay. Another research question is that does the reputation of public accountant firm moderated the effect of company size and profitability on audit delay? The purpose of this research is to analyze and obtain empirical evidence of the effect of company size and profitability on audit delay. And also, we analyze does Public Accounting Firm can moderate the effect of company size and profitability on audit delay.

## **LITERATURE REVIEW**

### **Signalling Theory**

According to Suwardjono (2013: 58), signaling theory is very helpful in highlighting information that is very important for outsiders to make investment decisions. One of the information that is used as a signal is the announcement of information in the financial statements made by an issuer. Signal theory states that good quality companies will intentionally give signals to the market, thus the market is expected to be able to distinguish good and bad quality companies. In order for the signal to be effective, it must be able to be captured by the market and perceived properly. The information provided by the company will be responded to the market as a signal that can be in the form of good news or bad news, the signal given by the company is important for investors when making decisions (Putri, 2018). If investors have received this information, they will first interpret and analyze the information that has been obtained, therefore the signal can affect stock prices. The main benefit of this theory is the timeliness in the presentation of financial statements to the public which is a signal from the company regarding the existence of useful information for investors in making decisions. Therefore, financial statements need to be presented in a timely manner, because the longer it takes the auditor to audit the financial statements, the longer the audit delay experienced by the company, so that the information submitted will be hampered and investors will view this as bad news. This will then have an impact on unstable stock price movements.

### **Audit Delay**

In the audit process and when the auditor prepares the audit report, it requires a duration which is known as audit delay. According to Subekti and Widiyanti (2004:18) in (Sari and Mulyani, 2019) audit delay is the length of time required to complete the audit conducted by the auditor, measured by the time difference between the closing date of the financial statements and the date of the audit opinion on the financial statements. According to (Mawikere 2018) Audit Delay is the time span of audit completion from the end of the company's fiscal year until the issuance of the audit report.

### **Company Size**

The size of the company is the greater the assets of a company, the greater the invested capital, the greater the total sales of a company, the more money turnover will be and the greater the market capitalization, the greater the company is known by the public. Therefore, the size of the company can be seen from the amount of assets or total assets owned by the company. Companies that have large equity tend to be under high pressure from outside parties such as investors, capital supervisors from

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the government on the performance of company management in relation to the information available in the financial statements, compared to companies that have little equity (Andi Kartika, 2011) in (Ratnasari and Yennisa, 2017).

## Profitability

Profitability in the company to determine the ratio between profits with assets or profits generated from the capital. In other words, profitability is the company's ability to earn a profit based on the level of assets measured using a ratio (Halim and Hanafi 2012:81). According to Kasmir (2013: 196) who explains that the use of profitability ratios can be done by comparing various components of financial statements, especially balance sheet financial statements and profit/loss reports. Measurements can be made for several operating periods.

## Public Accounting Firm's Reputation

According to David and Butar (2020) Public Accounting Firm is an entity that provides audit services performed by public accountants. This business entity must obtain approval from the Minister of Finance to carry out its activities. The reputation of a public accounting firm is the level or ranking of a public accounting firm which is determined based on an assessment from the public or the public in the implementation of the audit process and the timely completion of the audit process in accordance with its reputation (Ibrahim and Suryaningsih, 2016).

## Analysis Framework

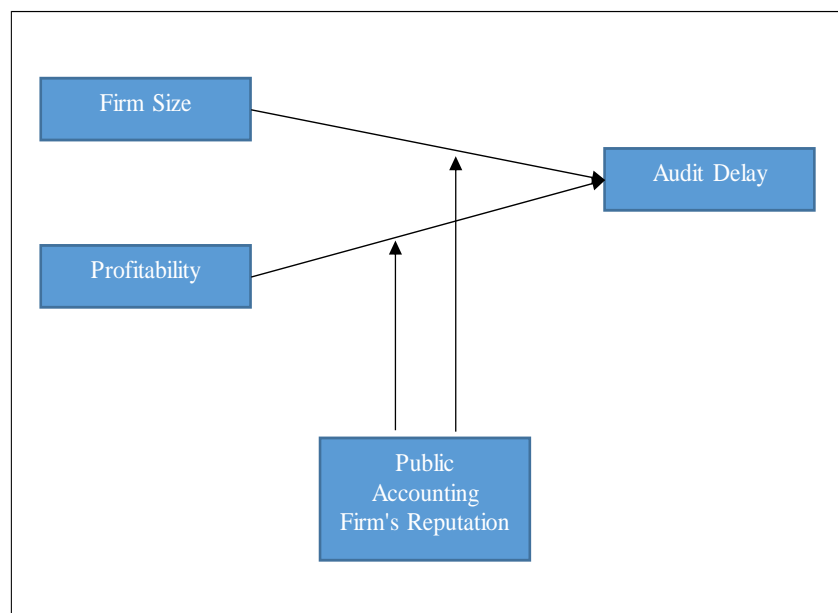


Figure 1. Analysis Framework

Source: Processed by the Author, 2021

## Hypothesis

Based on the description above, the following hypothesis is obtained:

- H1: Firm size has a negative effect on audit delay.
- H2: Profitability has a significant negative effect on audit delay.
- H3: Public accounting firm's reputation moderates the effect of firm size on audit delay.
- H4: Public accounting firm's moderates the effect of profitability on audit delay.

## METHOD

### Object of Research

The object of research in this study is a manufacturing company in the consumer goods industry sector which is listed on the Indonesia Stock Exchange (IDX) with a time span from 2016 to 2020. The data used are annual financial reports and audit reports taken from the IDX official website at [www.idx.co.id](http://www.idx.co.id) dan [www.idnfinancials.com](http://www.idnfinancials.com) .

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## Data Source and Data Type

In this study, the source of data is taken from annual financial statements that have been audited by an independent external auditor and have been declared fair from several manufacturing companies in the consumer goods industry which are listed on the Indonesia Stock Exchange (IDX) in a row during the period 2016 to 2020. Then, the data was obtained through the official website at [www.idx.co.id](http://www.idx.co.id) dan [www.idnfinancials.com](http://www.idnfinancials.com).

In this study, the type of data used is secondary data. Secondary data, namely data obtained indirectly through intermediary media or collected and reported by others, even though what is reported is original data. Secondary data is involved in some information from various existing sources. These data contain the value of this research, namely company size, profitability, and Public accounting firm's reputation in full. The data can be obtained from the annual financial statements that have been audited by an independent auditor.

## Population and Sample

The population used in this study were all manufacturing companies in the consumer goods industry sector listed on the BEI with a total population of 68 companies. The observation period of the study was carried out from 2016-2020.

In this study, the sampling technique using purposive sampling purposive sampling is a sampling technique based on certain considerations. The considerations in taking the sample are as follows: Manufacturing companies in the consumer goods industry sector that are consistently listed on the IDX during the 2016-2020 period.

- 1) Manufacturing companies in the consumer goods industry that submit annual financial reports and audit reports for 2016-2020 on the Indonesia Stock Exchange, respectively.
- 2) Manufacturing companies in the consumer goods industry sector that have profits during the 2016-2020 period.

**Table 1. Operational Variables**

Variable	Indicator	Measurement
Audit Delay (Y) (Amani & Waluyo, 2016)	The difference in duration between the closing date of the financial statements and the date of the audit report. (Nominal Scale)	$Audit\ delay = \text{Audit report date} - \text{year-end closing date.}$
Company Size (X1)	How much operating activity in an entity is proxied by total assets. (Nominal Scale)	$\ln(\text{Total Asset})$
Profitability (X2) (Halim and Hanafi, 2012)	<i>Return On Asset</i> (ROA) (Ratio Scale)	$ROA = \frac{\text{Net Income}}{\text{Total Asset}}$
Auditor Reputation (Z) (David and Butar, 2020)	The quality of Public accounting firm in carrying out audits in a professional and timely manner. Public accounting firm's of Big four or Non big four. (Nominal Scale)	Big four Public accounting firms are coded 1 and for Non big four Public accounting firms are coded 0

Source: Processed by the Author, 2021

## Methods of Analysis and Hypothesis Testing

The method of data analysis in this study is to analyze the data and test hypotheses using descriptive statistics, test hypotheses using moderated multiple regression analysis with the help of SPSS 26.

The data analysis technique used to assess the wide variability of risk disclosure in this study is multiple regression analysis. Multiple regression analysis is used to examine the effect of firm size and profitability on audit delay, with the presence of a moderating variable on Public accounting firm's reputation, then using moderated regression analysis. The interaction test is

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called Moderated Regression Analysis (MRA), because of the reputation of Public accounting firm’s reputation as a moderating variable. Moderated Regression Analysis (MRA) is a special application of multiple linear regression where the regression equation contains interaction elements (Ghozali, 2018) with the following equation formula:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 \dots\dots\dots (Model 1)$$

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_1*Z + \beta_4X_2*Z + e \dots\dots\dots (Model 2)$$

Description:

- $\alpha$  = Constant
- $\beta_1,2,3,4$  = Regression coefficient on each variable
- $X_1$  = Company size
- $X_2$  = Profitability
- $X_1*Z$  = Public Accounting Firm’s reputation moderates firm size
- $X_2*Z$  = Public Accounting Firm’s reputation moderate profitability
- $e$  = error

## RESULT AND DISCUSSION

### Object of Research

This research uses samples from manufacturing companies in the consumer goods industry sector listed on the Indonesia Stock Exchange in 2016-2020. The selection process carried out is as follows:

**Table 2. Sampling Data**

No	Descriptions	Total
1.	Manufacturing Companies in the Consumer Goods Industry Sector listed on the IDX.	68
2.	Manufacturing companies in the consumer goods industry that were not consistently listed on the IDX during the 2016-2020 period.	(28)
3.	Manufacturing Companies in the Consumer Goods Industry Sector that did not submit financial reports & Audit reports during the 2016-2020 period.	(8)
4.	Manufacturing companies in the consumer goods industry sector suffered losses during the 2016-2020 period.	(9)
5.	Number of companies eligible to be sampled	23
6.	Research period	5
<b>Number of Samples (23 x 5 year)</b>		<b>115</b>

Source: Processed by the Author, 2021

### Descriptive Analysis Results

The results of the descriptive analysis were carried out with the aim of providing an overview or description of the research variables, such as audit delay, company size, profitability, and Public accounting firm’s reputation. The data is seen from the minimum, maximum, average (mean), and standard deviation values (Ghozali 2018). The descriptive statistical values of research variables are presented in the following table:



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**Table 3. Statistic Descriptive**

	N	Minimum	Maximum	Mean	Std. Deviation
Audit Delay	115	29	157	79.20	20.828
Company Size	115	25.80	32.73	29.27	1.573
Profitability	115	0.00	0.92	0.13	0.128
Public Accounting Firm’s Reputation	115	0	1	0.54	0.501
Size*Public Accounting’s Reputation	115	0.00	32.73	16.05	14.959
Profitability*Public Accounting’s Reputation	115	0.00	0.92	0.10	0.145

Source: Output SPSS 26, 2021

**Assumption Classic Test**

**Table 4. Normality Test Result**

Model	One-Sample Kolmogorov-Smirnov Test	Result
Model 1	Unstandardized residual Asymp. Sig. (2-tailed) → 0.189	Normally distributed
Model 2	Unstandardized residual Asymp. Sig. (2-tailed) → 0.200	Normally distributed

Model1 = Before moderation variables used; Model 2= After moderation variable used

The results of processing research data before and after moderation using the Kolmogorov-Smirnov test presented in table 4 that the significance of both models are greater than 0.05, which indicates that the research data is normally distributed.

**Table 5. Multicollinearity Test Result**

Variables	Model 1		Model 2	
	VIF	Tolerance	VIF	Tolerance
Company Size	0.994	1.006	0.289	3.465
Profitability	0.994	1.006	0.039	25.720
Public Accounting Firm’s Reputation	-	-	0.002	444.750
Size*Public Accounting’s Reputation	-	-	0.002	469.750
Profitability*Public Accounting’s Reputation	-	-	0.031	32.254
Result	Free of multicollinearity		Free of multicollinearity	

Model1 = Before moderation variables used; Model 2= After moderation variable used

Source: Output SPSS 26, 2021

From the multicollinearity test before moderation presented in table 5, it can be seen that there are no symptoms of multicollinearity between research variables. This is shown in the VIF (variance inflation factor) number, from X1 (company size) and X2 (profitability) which shows < 10 and tolerance value > 0.10. From the multicollinearity test after the moderation that occurs in table 7, it can be seen that there are symptoms of multicollinearity between research variables. This is shown in the VIF (variance inflation factor) number of X1 (Company Size), X2 (Profitability), Z (Public accounting firm’s Reputation), X1\*Z (interaction of company size with Public Firm Accounting Firm’s reputation), and X2\*Z (interaction of profitability with reputation which shows >10 and a tolerance value of <0.10.

**Table 6. Autocorrelation Test Result**

Model	Durbin Watson Test	Result
Model 1	1.742	Free of autocorrelation
Model 2	1.837	Free of autocorrelation

Model1 = Before moderation variables used; Model 2= After moderation variable used

Source: Output SPSS 26, 2021

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Based on table 8, the results of the Durbin-Watson test can be concluded that there is no autocorrelation. It can be seen that the Durbin-Watson value is 1.742 with a significance table value of 5%, the number of samples (n) = 115 and the number of independent variables k = 2, then the dU value is 1.7313, and the dL value is 1.6606. The DW value of 1.742 is greater than the upper limit (dU) which is 1.7313 and less than (4-dU), then  $4-1.7313 = 2.2687$ .

Based on table 9, the results of the Durbin-Watson test can be concluded that there is no autocorrelation. It can be seen that the Durbin-Watson value is 1.837 with a significance table value of 5%, the number of samples (n) = 115 and the number of independent variables k = 4, then the dU value is 1.7683, and the dL value is 1.6246. The DW value of 1.837 is greater than the upper limit (dU) which is 1.7683 and less than (4-dU), then  $4-1.7683 = 2.2317$ .

## Goodness of Fit Test

**Table 7. F-Test Result**

Model	F-Test Significance	Result
Model 1	0.000	Fit model
Model 2	0.000	Fit model

Model1 = Before moderation variables used; Model 2= After moderation variable used

Source: Output SPSS 26, 2021

Based on Table. 7 obtained that both model 1 and model 2 have a significance value of  $0.000 < 0.0$ . All independent and moderating variables are simultaneously affect the dependent variable.

**Table 8. Coefficient Determination Test**

Model	Adjusted R-Square	Result
Model 1	0.272	Fit model
Model 2	0.317	Fit model

Model1 = Before moderation variables used; Model 2= After moderation variable used

Source: Output SPSS 26, 2021

In Table 8 the Adjust R Square value is 0.272 which means that only 27.2% of the dependent variable (audit delay) can be explained by company size and profitability, and the remaining 72.8% (100% - 27.2%) is influenced by other variables not analyzed in this study. For Model 2, the value of Adjust R Square is 0.317 which means that only 31.7% of the dependent variable (audit delay) can be explained by company size, profitability, Public Accounting Firm's reputation. Besides, the remaining 68.3% (100% - 31.7%) was influenced by other variables not analyzed in this study.

**Table 9. Partial T-Test and Moderate Regression Analysis**

Variables	Coefficient	Std. Error	T-Statistics	Significance	Conclusion
Constant	120.990	35.251	3.751	0.000	
Company Size	-1.498	1.129	-1.326	0.736	H1 Rejected
Profitability	37.838	27.602	1.371	0.000*	H2 Accepted
Size*Public Accounting's Reputation	2.153	1.383	1.556	0.123	H3 Rejected
Profitability*Public Accounting's Reputation	-74.905	28.277	-2.649	0.009*	H4 Accepted

\*Significant 5%.

Source: Output SPSS 26. (2021)

$$Y = 120,990 - 1,498 X_1 + 37,838 X_2 - 58,890 Z + 2,153 X_1 * Z - 74,905 X_1 * Z + e$$

Based on the table above, it can be seen as follows:

- It is known that the probability value (Sig) of the firm size before moderation is  $0.736 > 0.05$  and then the firm size variable has no significant effect on audit delay at a significance level of 5%.

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- b. It is known that the probability value (Sig) of profitability before moderation is  $0.000 < 0.05$ , then the profitability variable has a significant effect on audit delay at a significance level of 5%.
- c. It is known that the probability value (Sig.) of the interaction between firm size and Public Accounting Firm's reputation variables is  $0.123 > 0.05$ , then Public Accounting Firm's reputation variable cannot moderate the effect of firm size on audit delay. It is known that the probability value (Sig.) of the interaction between the profitability and Public Accounting Firm's reputation variables is  $0.009 < 0.05$ , then the Public Accounting Firm's reputation variable can moderate the effect of profitability on audit delay.

### **DISCUSSION AND SUMMARY OF RESEARCH RESULTS**

#### **1) The Effect of Firm Size on Audit Delay.**

The first hypothesis is to determine whether there is a negative effect of firm size on audit delay. There is no effect of firm size on audit delay, then H1 is declared rejected. Based on the results obtained, it can be concluded that the size of the company does not affect the audit delay. This is because every company listed on the IDX, all financial statements owned are always supervised by investors, capital supervisors, government, etc. So they have the same strategy in dealing with pressure on the submission of financial statements, even though the total assets owned are different, it does not affect the length of the audit delay. Therefore, the auditor in carrying out the auditing process will not look at how many assets each company has, because the examination will be carried out in the same way in accordance with the procedures applicable in the professional standards of public accountants. This study is in line with research by Annisa (2018) and Darmawan & Widhiyani (2017) which state that company size has no significant effect on audit delay.

#### **2) The Effect Profitability on Audit Delay.**

The second hypothesis is to determine whether there is a negative effect of profitability on audit delay. This is indicated by the significance value on the t-test of  $0.000 < 0.05$  so it can be concluded that profitability has a negative effect on audit delay. Then H2 is declared accepted.

This shows that companies that have high profitability will require a faster process of auditing financial statements. This needs to be done because it is to inform the public of the good news of the company and will increase the value of the company in the eyes of interested parties. The company's ability to generate profits based on assets owned has a significant influence on the period of submission of audited financial statements. Companies with high profitability will make the company's management to immediately complete the financial statements and submit the financial statements as soon as possible, so that when the audit of the financial statements carried out by the Public accounting firm does not experience delays, the audit delay rate will be shorter. This research is in line with the research of Suparsada & Putri (2017) and Meidiyustiani & Febisianigrum (2020) which state that profitability has a negative effect on audit delay.

#### **3) Public Accounting Firm's Reputation in Moderating the Effect of Firm Size on Audit Delay.**

This third hypothesis is to determine the reputation of Public Accounting Firm's reputation can moderate the effect of firm size on audit delay. From table 9, it is obtained that the significant value  $0.123 > 0.05$ . So it can be said that the reputation of Public Accounting Firm's reputation cannot moderate the effect of firm size on audit delay, so H3 is declared rejected.

Public Accounting Firm's reputation is not a variable that can moderate the effect of firm size on audit delay. Because this shows that companies with both large and small total assets will not affect the process of completing the audit of financial statements, because the auditor appointed by the Public Accounting Firms must have provided time that is in accordance with the need for the time period to complete the process of auditing the company's assets. Public Accounting Firm's reputation affiliated with the big four or non-big four will work professionally to maintain client trust and improve their reputation, regardless of the size of the company being audited. This study is in line with the research of Elvienne & Apriwenni (2019) and Firstiyanendro & Utomo (2021) which state that the Public Accounting Firm's reputation cannot moderate the effect of firm size on audit delay.

#### **4) Public Accounting Firm's Reputation in Moderating the Effect of Profitability on Audit Delay.**

This fourth hypothesis is to determine Public Accounting Firm's reputation can moderate the effect of profitability on audit delay. From table 9, the interactions variable Profitability and Public Accounting Firm's reputation have a significant value of 0.009. This is indicated by the significance value on the t-test of  $0.009 < 0.05$ . The adjusted R square value in the first regression equation (before moderation) is 27.2%, after the moderating variable in the second regression equation the adjusted R square value increases to 31.7%. So it can be concluded that Public Accounting Firm's reputation can moderate and strengthen the influence of profitability on audit delay, then H4 is declared accepted.

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Public Accounting Firm's reputation can moderate the effect of profitability on audit delay, this shows that with the large Public Accounting Firm's reputation, the relationship between profitability and audit delay will increase, this means that with high profitability and good Public Accounting Firm's reputation will speed up the time in submitting audited financial statements. Every company certainly wants its financial statements to be audited by the services of an auditor from a large Public Accounting Firm's reputation or big four because investors will assume that companies that use large Public Accounting Firms can produce better audit quality and the auditors will be more punctual in completing financial reports, so as to improve the quality of their financial statements, profitability and value of the company. This research is in line with research by Prbasari & Merkusiwati (2017) and Devi & Suaryana (2016) which state that Public Accounting Firm's reputation is able to moderate the effect of profitability on audit delay.

## CONCLUSIONS

1. The size of the company does not affect the audit delay, meaning that the size of the company which is determined by the total assets owned does not affect the occurrence of audit delay. Because their company is always supervised by interested parties, they will try to submit financial reports in a timely manner.
2. Profitability has a negative effect on audit delay, meaning that companies with high profitability values will have a shorter audit delay level. Because high profitability is good news for the company, its financial statements must be immediately submitted to the public.
3. The reputation of Public Accounting Firm's reputation cannot moderate the effect of company size on audit delay, meaning that large or small companies that have different total assets will not affect the auditor in completing the audit of financial statements. Because of the reputation of Public Accounting Firm affiliated with the big four and non-big four, they will work professionally to increase the trust of their clients.
4. Public Accounting Firm's reputation moderates the effect of profitability on audit delay, meaning that the greater Public Accounting Firm's reputation, the stronger the relationship between profitability and audit delay. Due to the high profitability and good reputation of the Public Accounting Firm, it will speed up the delivery time of the audit report. The reputation of the big Public Accounting Firm or big four has a good image in the eyes of the public so that it can increase the company's profitability and the value of the company.

## RECOMMENDATIONS

1. For further research, it is expected to add more variations of independent variables that can affect audit delay to get better results.
2. Further research should be able to expand the research sample by considering the use of all companies listed on the Indonesia Stock Exchange (IDX) or those from other sectors as the research population.
3. For companies, it is expected to be more thorough in the process of recording financial statements and to be able to publish financial reports on time.
4. For investors, they can make the right investment decisions in manufacturing companies in the consumer goods industry sector by considering company size, profitability, and Public Accounting Firm's reputation which have an influence on audit delay.
5. Auditors can estimate the duration of the audit process to be faster in submitting audited financial statements and can be published on time, so as to reduce the level of audit delay.
6. Creditors may consider granting credit to manufacturing companies in the consumer goods industry by looking at company size, profitability, and Public Accounting Firm's reputation.
7. For the Indonesia Stock Exchange, it can determine policies in reducing the level of audit delay by looking at the level of profitability, company size, and Public Accounting Firm's reputation.
8. For academics, they can deepen their knowledge and insight into the causes of audit delays in manufacturing companies in the consumer goods industry sector from the research that has been done.

## REFERENCES

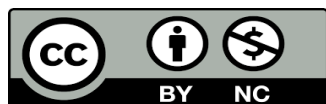
- 1) Alfiani, Dhita, and Putri Nurmala. 2020. "Pengaruh Ukuran Perusahaan, Profitabilitas, Solvabilitas Dan Reputasi Kantor Akuntan Publik Terhadap Audit Delay (Pada Perusahaan Property Dan Real Estate Yang Terdaftar Di Bursa Efek Indonesia Tahun 2013-2017)." *Journal of Technopreneurship on Economics and Business Review* 1(2):79–99.
- 2) Amani, Fauziah Althaf, and Indarto Waluyo. 2016. "Pengaruh Ukuran Perusahaan, Profitabilitas, Opini Audit, Dan Umur

## The Influence of Company Size and Profitability on Audit Delay with Public Accounting Firm's Reputation as a Moderating Variable (Empirical Study on Manufacturing Companies in the Consumer Goods Industry Sector Listed on the Indonesia Stock Exchange 2016 – 2020)

- Perusahaan Terhadap Audit Delay (Studi Empiris Pada Perusahaan Property Dan Real Estate Yang Terdaftar Di Bursa Efek Indonesia Pada Tahun 2012-2014)." *Nominal, Barometer Riset Akuntansi Dan Manajemen* 5(1). doi: 10.21831/nominal.v5i1.11482.
- 3) Annisa, Dea. 2018. "Pengaruh Ukuran Perusahaan, Jenis Opini Auditor, Ukuran Kap Dan Audit Tenure Terhadap Audit Delay." *Jurnal Akuntansi Berkelanjutan Indonesia* 1(1):108. doi: 10.32493/jabi.v1i1.y2018.p108-121.
  - 4) Arens, Alvin A., Randal J. Elder, and Mark S. Beasley. 2015. *Auditing & Jasa Assurance Pendekatan Terintegrasi Jilid 1 Edisi 15*. 15th ed. Jakarta: Erlangga.
  - 5) Bahri, Syamsul, Khojanah Hasan, and Bernardete De Carvalho. 2018. "Pengaruh Ukuran Perusahaan, Profitabilitas, Solvabilitas, Dan Ukuran Kantor Akuntan Publik Terhadap Audit Delay." *Jurnal ULTIMA Accounting* 9(2):33–49. doi: 10.31937/akuntansi.v9i2.728.
  - 6) Darmawan, Yoga, and Sari Widhiyani. 2017. "Pengaruh Ukuran Perusahaan, Kompleksitas Operasi Perusahaan Dan Komite Audit Pada Audit Delay." *E-Jurnal Akuntansi Universitas Udayana* 21:254–82.
  - 7) David, Hilda Azalia, and Sansaloni Butar Butar. 2020. "Pengaruh Tata Kelola Perusahaan, Reputasi KAP, Karakteristik Perusahaan Dan Opini Audit Terhadap Audit Delay." 18(1):105–12.
  - 8) Devi, Ni Luh Lemi Sushmita, and I. Gusti Ngurah Agung Suaryana. 2016. "Pengaruh Profitabilitas Dan Solvabilitas Terhadap Ketepatan Waktu Dengan Reputasi Kantor Akuntan Publik Sebagai Pemoderasi." *E-Jurnal Akuntansi Universitas Udayana* 17(1):395–425.
  - 9) Elvienne, Ruth, and Prima Apriwenni. 2019. "Pengaruh Profitabilitas, Solvabilitas, Dan Ukuran Perusahaan Terhadap Audit Delay Dengan Reputasi KAP Sebagai Pemoderasi." 8(021):125–47.
  - 10) Firstiyanendro, Lulut, and Dwiarto Utomo. 2021. "Pengaruh Profitabilitas, Ukuran Perusahaan Terhadap Audit Delay Dengan Reputasi Kantor Akuntan Publik Sebagai Variabel Moderasi." *Proceeding SENDIU* 978–79.
  - 11) Ghozali, Imam. 2018. *Aplikasi Analisis Multivariate Dengan Program IBM SPSS 25*. 9th ed. Semarang: Badan Penerbit Universitas Diponegoro.
  - 12) Halim, Abdul, and M. Hanafi. 2012. *Analisis Laporan Keuangan*. Yogyakarta: UPP STIM YKPN.
  - 13) Hery. 2015. *Praktis Menyusun Laporan Keuangan*. Jakarta: PT. Grasindo.
  - 14) Ibrahim, Alwin Malik, and Rosita Suryaningsih. 2016. "Pengaruh Profitabilitas, Leverage, Reputasi KAP Dan Opini Audit Terhadap Audit Delay." *Ultimaccounting : Jurnal Ilmu Akuntansi* 8(1):1–21. doi: 10.31937/akuntansi.v8i1.574.
  - 15) Kasmir. 2017. *Analisis Laporan Keuangan*. Jakarta: Rajawali Pers.
  - 16) Liwe, Alther GAbriel, Hendrik Manossoh, and Lidia M. Mawikere. 2018. "Analisis Faktor-Faktor Yang Mempengaruhi Audit Delay (Studi Empiris Pada Perusahaan Property Dan Real Estate Yang Terdaftar Di Bursa Efek Indonesia)." 13(2):99–108.
  - 17) Meidiyustiani, Rinny, and Putri Febisianigrum. 2020. "Pengaruh Profitabilitas, Solvabilitas, Dan Opini Audit Terhadap Audit Delay Dimoderasi Oleh Ukuran Perusahaan." *AKUNSIKA: Jurnal Akuntansi Dan Keuangan* 1(2). doi: 10.31963/akunsika.v1i2.2119.
  - 18) Murti, Ni Made Dwi Ari, and Ni Luh Sari Widhiyani. 2016. "Pengaruh Ukuran Perusahaan Dan Profitabilitas Pada Audit Delay Dengan Reputasi KAP Sebagai Variabel Pemoderasi." *E-Jurnal Akuntansi Universitas Udayana* 9876 LNCS:462–71. doi: 10.1007/978-3-319-45246-3\_44.
  - 19) Permatasari, Maulina Dyah, and Muhammad Mahessa Saputra. 2021. "Analisis Faktor-Faktor Yang Mempengaruhi Audit Delay." *Jurnal Akuntansi Bisnis Pelita Bangsa* 6(1):19–33.
  - 20) Prabasari, Igusti Agung Ayu Ratih, and Ni Ketut Lely Aryani Merkusiwati. 2017. "Pengaruh Profitabilitas, Ukuran Perusahaan, Dan Komite Audit Pada Audit Delay Yang Dimoderasi Oleh Reputasi Kap." *E-Jurnal Akuntansi* 20(2):1704–33. doi: 10.24843/EJA.2017.v20.i02.p30.
  - 21) Ratnasari, Novi, and Yennisa. 2017. "Pengaruh Ukuran Perusahaan, Ukuran Kap Dan Auditor Internal Terhadap Audit Delay." *Jurnal Akuntansi* 5(2):159–66. doi: 10.24964/ja.v5i2.286.
  - 22) Saemargani, Fitria Ingg. 2015. "Pengaruh Ukuran Perusahaan, Profitabilitas, Solvabilitas Dan Opini Auditor Terhadap Audit Delay." *Jurnal Analisa Akuntansi Dan Perpajakan* 2(2). doi: 10.25139/jaap.v2i2.1397.
  - 23) Saputra, Alan Darma, Chalisa Rahmi Irawan, and Wenny Anggresia Ginting. 2020. "Pengaruh Ukuran Perusahaan, Opini Audit, Umur Perusahaan, Profitabilitas Dan Solvabilitas Terhadap Audit Delay." *Owner (Riset Dan Jurnal Akuntansi)* 4(2):286. doi: 10.33395/owner.v4i2.239.
  - 24) Saputro, Echsan Handhi. 2017. "Pengaruh Profitabilitas, Komite Audit, Dan Opini Audit Terhadap Audit Delay Dengan Reputasi Kantor Akuntan Publik Sebagai Variabel Pemoderasi."

## The Influence of Company Size and Profitability on Audit Delay with Public Accounting Firm's Reputation as a Moderating Variable (Empirical Study on Manufacturing Companies in the Consumer Goods Industry Sector Listed on the Indonesia Stock Exchange 2016 – 2020)

- 25) Sari, Dina Puspita, and Erly Mulyani. 2019. "Faktor-Faktor Yang Mempengaruhi Audit Delay (Studi Empiris Pada Perusahaan Pertambangan Yang Terdaftar Di Bursa Efek Indonesia Tahun 2014-2017)." *Universitas Negeri Padang* 1(2):648.
- 26) Sihombing, Tanggor. 2021. "Pengaruh Audit Opinion, Audit Tenure, Dan Profitabilitas Terhadap Audit Delay Dengan Reputasi Kantor Akuntan Publik(Kap) Sebagai Variabel Moderasi." *Jurakunman (Jurnal Akuntansi Dan Manajemen)* 14(1):26. doi: 10.48042/jurakunman.v14i1.59.
- 27) Suparsada, Ni Putu Yulianda Damayanti, and IGAM Asri Dwija Putri. 2017. "Pengaruh Profitabilitas, Reputasi Auditor, Ukuran Perusahaan, Dan Kepemilikan Institusional Terhadap Audit Delay." *E-Jurnal Akuntansi* 18(1):60–87.
- 28) Sutjipto, Vanessa Fonda, Bambang Sugiarto, and Dheny Biantara. 2020. "Analisis Pengaruh Ukuran Perusahaan, Profitabilitas, Solvabilitas, Reputasi KAP Dan Opini Auditor Terhadap Audit Delay Pada Perusahaan Yang Terdaftar Di Bursa Efek Indonesia Tahun 2016- 2018." *Accounting Cycle Journal Universitas Agung Podomoro* 1(2):85–99.



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## Physical Fitness as a Predictor of Elementary School Student Concentration



Rizki Zidane Pramadi<sup>1</sup>, Hedi Ardiyanto Hermawan<sup>2</sup>, Andrian Rahman Ayudi<sup>3</sup>

<sup>1,2,3</sup>Department of Sport Science, Yogyakarta State University, Yogyakarta Indonesia

**ABSTRACT:** This study aims to determine the relationship between physical fitness and the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta. This type of research is quantitative with a correlational approach. The population in this study were high school students in State Elementary Schools throughout Sleman Yogyakarta, amounting to 256 students who were taken based on the purposive sampling technique. Physical fitness instruments use the Indonesian Physical Fitness Test for ages 10-12 years, while concentration uses the Grid Concentration Test. The data analysis technique used Pearson Correlation Product Moment analysis. The results showed that there was a significant relationship between physical fitness and the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta, with an  $r$  count of 0.396 and a significance value of  $0.000 < 0.05$ . These results indicate that if the physical fitness is getting better or fulfilled, the concentration will also be better. For other researchers, research with other independent variables can be carried out, so that more variables that affect physical fitness can be identified.

**Keywords-** physical fitness, the concentration of learning

### INTRODUCTION

In the current era of modernization, learning is no longer a preferred routine for students. This is because there are many things that make students lazy or bored with learning. Students prefer to play mobile phones, online games, or other activities that come from the surrounding environment ((Sydorenko et al., 2019); (Gao et al., 2020); (Frahasini et al., 2018); (Yang et al., 2021)). Children feel very comfortable playing games without feeling bored for a long period of time. The use of smartphones also has a negative impact on the development of students which is marked by the laziness of students in carrying out movement and interacting activities ((Triana & Nugroho, 2021); (Pitoyo, 2020); (Sudiyono & Astuti, 2021); (Andujar & Rodriguez, 2020)). The term physical activity is the movement of limbs that causes energy expenditure which is very important for the maintenance of physical and mental health, as well as maintaining the quality of life in order to stay healthy and fit throughout the day ((Hammami et al., 2022); (Santos et al., 2021)). Reduced physical activity will certainly result in weak physical condition or physical fitness abilities. Weak physical fitness results in reduced productivity of a person in carrying out daily activities ((Di Santo et al., 2020); (Branquinho et al., 2020)).

Physical fitness possessed by each individual is different, this depends on how the individual performs a physical activity. The development of everyone's physical fitness through a sports activity that has the intention to increase endurance and physical condition. Students must have a good level of physical fitness while in the school environment so that when carrying out learning activities they can be carried out optimally ((Mashud, 2020); (Pavlovic et al., 2021); (Churiyah et al., 2020)).

A person's level of physical fitness will affect physical and mental readiness to be able to accept the workload. This also applies to students, students with a good level of physical fitness will be able to carry out their learning activities smoothly (Jago et al., 2020). Through good physical fitness, students will be able to accept and absorb every lesson given by the teacher, so that the goals of education can be achieved. Having good concentration, of course, must have a good level of fitness, because when physical fitness is good, it is likely that the person will easily feel tired and will be susceptible to disease, so that it has an impact on learning concentration and academic achievement to be achieved. The level of physical fitness is very necessary to support daily activities, so that someone who has a good level of fitness will not have significant fatigue. Therefore, all human activities require physical fitness.

A good level of physical fitness will make a student able to work effectively and efficiently, not susceptible to disease, learn to be more passionate and enthusiastic, and be able to optimally and be able to face challenges in life both in the school environment

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and in the community. In addition, through good physical fitness, it is hoped that every student will also have confidence in learning activities. Students will not get tired easily or easily fall ill because their immune system decreases and of course it is not easy to lose concentration.

The most basic problem of learning is that it requires high concentration (Jin et al., 2018). Students are required to stay focused until the lesson is over. Concentration is one of the main factors that can affect learning. The higher a person's concentration, the more effective the learning activities are, but on the contrary if the concentration is low, the results obtained are not optimal. Concentration itself means the concentration of thoughts on one thing to the exclusion of all other unrelated things (Vygotsky, 2017). In learning, concentration means focusing the mind on a subject by putting aside all other things that are not related to the lesson.

Concentration of learning is to focus all the attention of students when learning takes place ((Foley, 2020); (Bower, 2019)). This means that students pay attention to the teacher, listen, see and concentrate on what the teacher says, and respond to the stimulus given by the teacher and put aside all things that are not related to the lesson. The role of concentration in the context of learning is very important. Without concentration, the act of learning will result in futility and even disappointment. A person's inability to concentrate in learning is caused by the dispersal of attention to an object. Concentration is the driving force for all student learning activities, ensuring the continuity of the learning process, providing direction for the learning process, enabling the achievement of learning subject objectives, and enabling students to achieve learning at school (Rusmana et al., 2019).

Children who are active in sports or in other words, children who have high physical fitness will produce a longer concentration level compared to children who have low physical fitness (Piercy et al., 2018); (Yarımkaya & Esentürk, 2022)). . Weak physical fitness results in reduced productivity of a person in carrying out daily activities. Concentration is the ability to focus on a task without being distracted and influenced by external and internal stimuli, while its implementation refers to a broad dimension and focuses on specific tasks. So important is concentration for students, so concentration can be a prerequisite for students in learning in order to successfully achieve learning objectives. This was also stated in research (Nuryadi et al., 2018) that other effects of physical fitness cause significant changes in the endocrine system. The results of the study also stated that the higher the physical fitness, the lower the cortisol response in terms of concentration and the ability to release anxiety was also higher. The importance of concentration can make students better master the material provided and increase enthusiasm and motivation to be more active during the learning and teaching process. Concentration has a big effect on the success of the learning process, if students have difficulty concentrating, the teaching and learning process is not optimal. For students who are less concentrated in learning, of course, learning achievement will also decrease.

### METHOD

This type of research is correlational research. Correlational research is research conducted to determine whether there is a relationship between two or several variables. The population in this study were senior class students aged 10-12 years in State Elementary Schools throughout Sleman Yogyakarta Regency, amounting to 256 students. The instrument used to measure physical fitness is the Indonesian Physical Fitness Test for the age of 10-12 years which consists of a 40-meter run test (speed), an elbow bending test (arm muscle strength), lying down for 30 seconds (abdominal muscle strength), jumping upright (leg power), and running 600 meters (endurance). The concentration instrument uses the Grid Concentration Test. Grid Concentration Test is a form of measuring instrument to determine the level of concentration by using numbers. In this test, there are 100 numbers with 2 digits consisting of the numbers 00 to 99 which are placed randomly in 10 rows x 10 columns. The data analysis technique is the Correlation Product Moment. Previously, the normality and linearity prerequisite tests were carried out.

### FINDING

The results of the descriptive analysis are intended to determine the physical fitness and concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The full results are in Table 1.

**Table 1. Descriptive Statistics of Physical Fitness Variables**

Statistic	
<i>N</i>	256
<i>Mean</i>	12,76
<i>Median</i>	13,00



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<i>Mode</i>	14,00
<i>Std. Deviation</i>	2,51
<i>Minimum</i>	8,00
<i>Maximum</i>	18,00

When displayed in the form of a frequency distribution, the physical fitness of upper-class students in State Elementary Schools throughout Sleman Yogyakarta is presented in Table 2.

**Table 2. Frequency Distribution of Physical Fitness Variables**

No	Interval	Category	Frequency	Percentage
1	22 - 25	Vey Good	0	0,00%
2	18 - 21	Good	6	2,34%
3	14 - 17	Medium	104	40,63%
4	10 - 13	Less	122	47,66%
5	5 - 9	Very poor	24	9,38%
<b>Total</b>			<b>256</b>	<b>100%</b>

Based on Table 2 above, it shows that the physical fitness of upper-class students in State Elementary Schools throughout Sleman Yogyakarta Regency is in the "very poor" category of 9.38% (24 students), "less" of 47.66% (68 students), "medium" by 40.63% (104 students), "good" 2.34% (6 students), and "very good" 0.00% (0 students).

The statistical description of the concentration data of upper-class students in State Elementary Schools throughout Sleman Yogyakarta Regency is in full in Table 3.

**Table 3. Descriptive Statistics of Concentration Variables**

Statistic	
<i>N</i>	256
<i>Mean</i>	12,30
<i>Median</i>	13,00
<i>Mode</i>	15,00
<i>Std. Deviation</i>	5,11
<i>Minimum</i>	2,00
<i>Maximum</i>	21,00

When displayed in the form of a frequency distribution, the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta is presented in Table 4.

**Table 4. Frequency Distribution of Concentration Variables**

No	Interval	Category	Frequency	Percentage
1	21 ≤	Good	6	2,34%
2	11-20	Medium	150	58,59%
3	0-10	Less	100	39,06%
<b>Total</b>			<b>256</b>	<b>100%</b>

Based on Table 4 above, it shows that the concentration of upper class students in State Elementary Schools throughout Sleman Yogyakarta is in the "less" category of 39.06% (100 students), "medium" is 58.59% (150 students), and "good" by 2.34% (6 students).

The normality test of the data in this study used the Kolmogorov-Smirnov method. The results of the data normality test carried out in each group were analyzed using the SPSS version 20.0 software program for windows with a significance level of 5% or 0.05. Summary of data is presented in Table 5.

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**Table 5. Normality Test Results**

No	Variable	<i>p</i>	Sig	Description
1	Physical fitness (X)	0,524	0,05	Normal
2	Concentration (Y)	0,425	0,05	Normal

Based on the statistical analysis of the normality test that has been carried out using the Kolmogorov-Smirnov test in Table 5, the variables of physical fitness and student concentration obtained normality test results with a significance value of  $p > 0.05$ , which means the data is normally distributed.

The linearity test of the relationship was carried out through the F test. The relationship between the independent variable (X) and the dependent variable (Y) was declared linear if the sig value  $> 0.05$ . The results of the linearity test can be seen in Table 6 below:

**Table 6. Linearity Test Results**

Functional Relationship	<i>p</i>	Sig.	Description
Physical fitness (X)* Concentration (Y)	0,436	0,050	Linier

From Table 6 above, it can be seen that the significance value of  $p > 0.05$ . So, the relationship between physical fitness variables and the concentration of students is stated to be linear.

The correlation coefficient significance test was carried out by consulting the r table. If the r count is consulted with the r table using an error rate of 5%. If the significance value of  $p < 0.05$ , then the hypothesis is accepted and the significance value of  $p > 0.05$ , then the hypothesis is rejected. The results of hypothesis testing are presented as follows.

**Table 7. Correlation Test Results**

<i>Model Summary</i>				
<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	0,396 <sup>a</sup>	0,157	0,153	4,70642
a. Predictors: (Constant), Physical fitness (X1)				

Based on Table 7 above, the calculated r coefficient is 0.396, while the significance value is 0.000. With the calculated r value of 0.396 and a significance value of  $0.000 < 0.05$ , it can be interpreted that there is a significant relationship between physical fitness and the concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The correlation coefficient is positive, meaning that the better the physical fitness, the better the concentration.

The value of the coefficient of determination R Square or the contribution of physical fitness with the concentration of upper-class students in State Elementary Schools in Sleman Yogyakarta Regency is 0.157 or 15.70%. This means that the physical fitness variable affects the concentration of upper-class students in State Elementary Schools throughout Sleman Yogyakarta by 15.70%. The rest is influenced by other factors of 84.30% outside this study.

## DISCUSSION

Based on the results of the study shows that there is a significant relationship between physical fitness and the concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The results of this study are supported by research conducted (Krissanthy et al., 2020); (Shalar et al., 2019), which shows a significant relationship between the level of physical fitness and the level of concentration of students. The result of the determinant coefficient is 33.4%, and the rest of the calculation results is 66.6%. Again, the concentration level is determined by other factors.

The study (Putra, 2019) concluded that there was a relationship between physical fitness and the concentration level of students, with a significance value of 0.01. Further studies (Hermawan et al., 2022) show a relationship between physical fitness and concentration levels. In the study, (Nuryadi et al., 2018) also stated that physical fitness has a relationship with concentration with the results of the correlation test of  $r = 0.4338$  and the coefficient of determination of 9.18%.

Based on descriptive analysis, it shows that most of the physical fitness levels of upper-class students in State Elementary Schools throughout Sleman Yogyakarta are in the poor category. This lack of physical fitness is caused because students are excessive smartphone users with an average use of 3-8 hours/day, five students are moderate users with an average use of 2-3 hours/day, and the rest are light users with less intensity of use. Then 1 hour per day. Students prefer to play online games over

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other activities such as sports or taking extracurricular activities. High intensity in playing online games can make students addicted, so it has an impact on the laziness of students to do activities. Students even rarely do sports activities, especially during the Covid-19 pandemic.

Based on descriptive analysis, it shows that most of the concentration levels of upper-class students in State Elementary Schools throughout Sleman Yogyakarta are in a good category. These results are by observations made by researchers, showing that students find it difficult to concentrate and are often sleepy when participating in online learning. Students also often lose concentration when doing assignments.

Physical fitness has a positive correlation with academic achievement and learning outcomes ((Vasconcellos et al., 2020); (Erickson et al., 2019); (Singh et al., 2019)). Physical fitness can increase concentration and focus in at least a short time; it can contribute positively to the academic achievement of students at school ((Fidan & Tuncel, 2019); (Hinojo-Lucena et al., 2018)), so physical fitness is closely related to physical condition physique. It is hoped that students with good physical fitness will be able to absorb more knowledge from each subject at school.

Concentration is essential for daily activities. Concentration is a learned skill not to react or be distracted by irrelevant stimuli, where our mind must be directed to a point in a job. Concentration is how a person focuses on doing something so that the work can be done in the allotted time. A person's ability to concentrate also varies according to his age. Concentration is one aspect that supports students to achieve good performance, and if this concentration is reduced, then taking lessons in class and private learning will be disrupted.

Students who have good concentration must, of course, have a good level of fitness because when someone does not have a good level of physical fitness, it is likely that person will quickly feel tired and will be susceptible to disease, so that his level of health will have an impact on learning concentration and academic achievement. Will be achieved. The level of physical fitness is essential to support daily activities so that someone with a good fitness level will not have significant fatigue. Therefore, all human activities require physical fitness.

Physical fitness can be improved through exercise. Sports are physical training activities, namely physical activities to enrich and enhance abilities and basic movement skills as well as movement skills (sports branches). This activity is a form of approach to aspects of physical well-being or physical health, which also means dynamic health, which is healthy accompanied by the ability to move that meets all the demands of daily life. This means that everyone who does physical education through sports activities has an adequate level of physical fitness. The more you exercise, the more your concentration will increase. This is in accordance with the theory that a person who exercises frequently has a better metabolic function than someone who does not exercise frequently or who does not exercise at all. Exercise can facilitate the circulatory system so that the nutritional and energy needs of the brain are fulfilled and make the brain work optimally ((Schulkin & Sterling, 2019); (Woods et al., 2020); (Özugur et al., 2021)). For students, this research can be used as information about their physical fitness status, so that it can be used as motivation and a measuring tool to do more routine and regular exercise every day, this information is also beneficial for students who are facing the teaching and learning process in the classroom, so that you know how big the level of fitness and concentration.

## CONCLUSION

The conclusion of the study shows that there is a significant relationship between physical fitness and the level of concentration of upper-class students in State Elementary Schools in Sleman Regency, Yogyakarta. The contribution of physical fitness to the concentration level of upper-class students in State Elementary Schools in Sleman Yogyakarta Regency is 15.70%. In comparison, the rest is influenced by other factors of 84.30% outside this study. For other researchers, research with different independent variables can be carried out to identify more variables that affect physical fitness.

## REFERENCES

- 1) Andujar, A., & Rodriguez, J. M. F. (2020). WhatsApp and Jitsi to Foster Student Engagement in an American-Spanish Telecollaboration Exchange. In *Recent Tools for Computer-and Mobile-Assisted Foreign Language Learning* (pp. 60–78). IGI Global.
- 2) Bower, M. (2019). Technology-mediated learning theory. *British Journal of Educational Technology*, 50(3), 1035–1048.
- 3) Branquinho, C., Kelly, C., Arevalo, L. C., Santos, A., & Gaspar de Matos, M. (2020). "Hey, we also have something to say": A qualitative study of Portuguese adolescents' and young people's experiences under COVID-19. *Journal of Community Psychology*, 48(8), 2740–2752.
- 4) Churiyah, M., Sholikhah, S., Filianti, F., & Sakdiyyah, D. A. (2020). Indonesia education readiness conducting distance learning in Covid-19 pandemic situation. *International Journal of Multicultural and Multireligious Understanding*, 7(6),

## Physical Fitness as A Predictor of Elementary School Student Concentration

491–507.

- 5) Di Santo, S. G., Franchini, F., Filiputti, B., Martone, A., & Sannino, S. (2020). The effects of COVID-19 and quarantine measures on the lifestyles and mental health of people over 60 at increased risk of dementia. *Frontiers in Psychiatry, 11*, 578628.
- 6) Erickson, K. I., Hillman, C., Stillman, C. M., Ballard, R. M., Bloodgood, B., Conroy, D. E., Macko, R., Marquez, D. X., Petruzzello, S. J., & Powell, K. E. (2019). Physical activity, cognition, and brain outcomes: a review of the 2018 physical activity guidelines. *Medicine and Science in Sports and Exercise, 51*(6), 1242.
- 7) Fidan, M., & Tuncel, M. (2019). Integrating augmented reality into problem based learning: The effects on learning achievement and attitude in physics education. *Computers & Education, 142*, 103635.
- 8) Foley, G. (2020). Introduction: The state of adult education and learning. In *Dimensions of adult learning* (pp. 3–18). Routledge.
- 9) Frahasini, F., Astuti, T. M. P., & Atmaja, H. T. (2018). The Impact of The Use of Gadgets in School of School Age Towards Children's Social Behavior in Semata Village. *Journal of Educational Social Studies, 7*(2), 161–168.
- 10) Gao, F., Li, L., & Sun, Y. (2020). A systematic review of mobile game-based learning in STEM education. *Educational Technology Research and Development, 68*(4), 1791–1827.
- 11) Hammami, A., Harrabi, B., Mohr, M., & Krusturup, P. (2022). Physical activity and coronavirus disease 2019 (COVID-19): specific recommendations for home-based physical training. *Managing Sport and Leisure, 27*(1–2), 26–31.
- 12) Hermawan, I., Sonjaya, A. R., & Raswan, M. S. (2022). Hubungan antara tingkat kebugaran jasmani dengan konsentrasi belajar pendidikan jasmani siswa. *Holistic Journal of Sport Education, 1*(2), 52–59.
- 13) Hinojo-Lucena, F. J., Mingorance-Estrada, Á. C., Trujillo-Torres, J. M., Aznar-Díaz, I., & Cáceres Reche, M. P. (2018). Incidence of the flipped classroom in the physical education students' academic performance in university contexts. *Sustainability, 10*(5), 1334.
- 14) Jago, R., Salway, R., Emm-Collison, L., Sebire, S. J., Thompson, J. L., & Lawlor, D. A. (2020). Association of BMI category with change in children's physical activity between ages 6 and 11 years: A longitudinal study. *International Journal of Obesity, 44*(1), 104–113.
- 15) Jin, C., Allen-Zhu, Z., Bubeck, S., & Jordan, M. I. (2018). Is Q-learning provably efficient? *Advances in Neural Information Processing Systems, 31*.
- 16) Krissanthy, A., Kurniawan, F., & Resita, C. (2020). Hubungan Kebugaran Jasmani Terhadap Tingkat Konsentrasi Siswa di SMAN 9 Bekasi. *Jurnal Literasi Olahraga, 1*(1).
- 17) Mashud, M. (2020). The Effectiveness of Physical Education Learning in Elementary School Located in Wetland Environment. *The Effectiveness of Physical Education Learning in Elementary School Located in Wetland Environment, 5*(2), 265–270.
- 18) Nuryadi, N., Negara, J. D. K., Juliantine, T., Slamet, S., & Gumilar, A. (2018). Hubungan kebugaran jasmani dengan kemampuan konsentrasi dan respon kortisol. *Jurnal Pendidikan Jasmani Dan Olahraga, 3*(2), 122–128.
- 19) Özugur, S., Chávez, M. N., Sanchez-Gonzalez, R., Kunz, L., Nickelsen, J., & Straka, H. (2021). Green oxygen power plants in the brain rescue neuronal activity. *Iscience, 24*(10), 103158.
- 20) Pavlovic, A., DeFina, L. F., Natale, B. L., Thiele, S. E., Walker, T. J., Craig, D. W., Vint, G. R., Leonard, D., Haskell, W. L., & Kohl, H. W. (2021). Keeping children healthy during and after COVID-19 pandemic: meeting youth physical activity needs. *BMC Public Health, 21*(1), 1–8.
- 21) Piercy, K. L., Troiano, R. P., Ballard, R. M., Carlson, S. A., Fulton, J. E., Galuska, D. A., George, S. M., & Olson, R. D. (2018). The physical activity guidelines for Americans. *Jama, 320*(19), 2020–2028.
- 22) Pitoyo, A. (2020). A meta-analysis: Factors affecting students' reading interest in Indonesia. *International Journal of Multicultural and Multireligious Understanding, 7*(7), 83–92.
- 23) Putra, E. P. (2019). Hubungan Kebugaran Jasmani Terhadap Tingkat Konsentrasi Peserta Didik (Studi Pada Peserta Didik Smp Negeri 1 Gondang Mojokerto). *Jurnal Pendidikan Olahraga Dan Kesehatan, 7*(3).
- 24) Rusmana, N., Suryana, D., & Utama, A. (2019). Collaborative Action Research Application of Socratic Methods in Learning in Primary School. *International Journal of Innovation, Creativity and Change, 5*(5), 501–514.
- 25) Santos, I. K. dos, Medeiros, R. C. da S. C. de, Medeiros, J. A. de, Almeida-Neto, P. F. de, Sena, D. C. S. de, Cobucci, R. N., Oliveira, R. S., Cabral, B. G. de A. T., & Dantas, P. M. S. (2021). Active video games for improving mental health and physical fitness—An alternative for children and adolescents during social isolation: An Overview. *International Journal of Environmental Research and Public Health, 18*(4), 1641.
- 26) Schulkin, J., & Sterling, P. (2019). Allostasis: a brain-centered, predictive mode of physiological regulation. *Trends in*

## Physical Fitness as A Predictor of Elementary School Student Concentration

*Neurosciences*, 42(10), 740–752.

- 27) Shalar, O., Huzar, V., Strykalenko, Y., Yuskiv, S., Homenko, V., & Novokshanova, A. (2019). Psycho-pedagogical aspects of interaction between personality traits and physical qualities of the young gymnasts of the variety and circus studio. *Journal of Physical Education and Sport*, 19, 2283–2288.
- 28) Singh, A. S., Saliasi, E., Van Den Berg, V., Uijtdewilligen, L., De Groot, R. H. M., Jolles, J., Andersen, L. B., Bailey, R., Chang, Y.-K., & Diamond, A. (2019). Effects of physical activity interventions on cognitive and academic performance in children and adolescents: a novel combination of a systematic review and recommendations from an expert panel. *British Journal of Sports Medicine*, 53(10), 640–647.
- 29) Sudiyono, L., & Astuti, A. D. (2021). Interest Student Learning: Empirical Study of The Use of Gadget and Learning Environment. *Ilkogretim Online*, 20(1).
- 30) Sydorenko, T., Hellermann, J., Thorne, S. L., & Howe, V. (2019). Mobile augmented reality and language-related episodes. *Tesol Quarterly*, 53(3), 712–740.
- 31) Triana, Y., & Nugroho, A. (2021). Brief ELT in digital classroom for lazy creative lecturers (option after post pandemic recovery): lecturers' perspectives. *Indonesian Journal of EFL and Linguistics*, 6(1), 79–99.
- 32) Vasconcellos, D., Parker, P. D., Hilland, T., Cinelli, R., Owen, K. B., Kapsal, N., Lee, J., Antczak, D., Ntoumanis, N., & Ryan, R. M. (2020). Self-determination theory applied to physical education: A systematic review and meta-analysis. *Journal of Educational Psychology*, 112(7), 1444.
- 33) Vygotsky, L. S. (2017). The Problem of Teaching and Mental Development at School Age [Problema obuchenija i umstvennogo razvitija v shkol'nom vozraste]. *Changing English*, 24(4), 359–371.
- 34) Woods, J. A., Hutchinson, N. T., Powers, S. K., Roberts, W. O., Gomez-Cabrera, M. C., Radak, Z., Berkes, I., Boros, A., Boldogh, I., & Leeuwenburgh, C. (2020). The COVID-19 pandemic and physical activity. *Sports Medicine and Health Science*, 2(2), 55–64.
- 35) Yang, X., Zhao, X., Tian, X., & Xing, B. (2021). Effects of environment and posture on the concentration and achievement of students in mobile learning. *Interactive Learning Environments*, 29(3), 400–413.
- 36) Yarım kaya, E., & Esentürk, O. K. (2022). Promoting physical activity for children with autism spectrum disorders during Coronavirus outbreak: benefits, strategies, and examples. *International Journal of Developmental Disabilities*, 68(4), 430–435.



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## A Comprehensive Healthcare Model: Dimension, Status, and Approach



Lung-Tan Lu

Department of Management, Fo Guang University, Taiwan

**ABSTRACT:** According to the WHO definition, health as a state of physical, mental and social integrity, not just the absence of disease, the truly healthy (first state) and patients (third state) are less than 25%, and 75% of the people are in the Sub-health state (second state). This paper distinguishes a fourth state: recovering, outside the three statuses. When the patient in the second state enters the fourth state and is handled properly, he can move to the first state, otherwise, if the patient is not handled properly, he will return to the second state. We propose a Comprehensive Healthcare Model to integrate the three parts: (1) Physical, Mental, Spiritual and Social Dimensions, (2) Western Medicine, Eastern Medicine and Folklore Therapy, Religions and Beliefs, Sports and Martial Arts Approaches, and (3) Health, Sub-health, Illness, and Recovering Status for the further research..

**KEYWORDS:** healthcare, spiritual, medicine, religion, sports

### I. INTRODUCTION

In 1948, the World Health Organization (WHO) defined health as "not merely the absence of disease or infirmity, but the physical, mental and social wellbeing of the body". In addition to maintaining good physical condition and not getting sick, mental, emotional and social aspects are equally important to health (WHO, 2022). In 1986, the World Health Organization (WHO) defined health promotion as "the process of enabling people to increase control over their own health and to promote their health" at the first Global Conference on Health Promotion in Ottawa of enabling people to increase control over, and to improve, their health". This definition emphasizes health promotion as a process of empowering citizens to improve their health autonomously.

In the mean time, five action plans for the implementation of health promotion also be formulated. These included: (1) formulating healthy public policies, (2) creating a supportive environment for health, (3) strengthening community actions, (4) developing personal skills and (5) adjusting the direction of health services. In 1998, the World Health Organization (WHO) stated that "health is not merely the elimination of disease or infirmity, but a state of complete physical, mental, spiritual and social health". This definition reaffirmed that physical, mental, spiritual and social are equally important to health (WHO, 2011).

The Helsinki Statement (WHO, 2013b), emphasizing that health in all policies, including: (1) the need and priorities for building cross-sectoral health policies, (2) Plan action plans, (3) identify supporting structures and processes, (4) ensure monitoring, evaluation, and (5) people and capacity development issued by the 2013 Global Conference on Health Promotion (WHO, 2014). The Shanghai Declaration emphasized that good governance is crucial to health, and that cities and communities are key places to achieve health, which can be empowered through health awareness and empowerment. ) to achieve equality for all citizens after the 2016 Global Conference on Health Promotion held in Shanghai (WHO, 2016).

The above definitions and declarations emphasize the three basic spirits of health promotion, namely, enable, advocate, and mediate, which can be used as the overall thinking framework for health promotion. The definition of health has been as "not only the elimination of disease or infirmity, but the state of complete physical, mental and social health" by WHO since 1948 (WHO 2016). The whole person are only the body and mind, and without spirit in this definition.

In 1983, representatives of 22 countries in the 36th World Health Assembly formally proposed that the spiritual dimension should be included in the definition of health. The amended definition of health was: Health is a dynamic state of complete physical, mental, spiritual and social wellbeing and not merely the absence of disease or infirmity. However, in the working group of the 52nd World Health Assembly in 1999, the participants could not reach an agreement on wording of "mental" and "spiritual". In the end, this definition was not handed into the 52nd Assembly for discussion (Simone and Parati, 2001).

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### **II. PHYSICAL, MENTAL, SPIRITUAL AND SOCIAL DIMENSIONS**

Most people believe that the human body without disease is healthy since ancient times. This dualism of health has been slowly but surely replaced by the concept of "Whole Person Wellness" from the end of the twentieth century. The Interactionism advocates that human body and mind can influence each other. For example, when a person's body is injured by an impact, the psychological experience will produce a "pain" feeling; then, the "pain" experience will affect the person's future behavior and avoid the situation of bodily injury (Hodapp, 1999).

The Interactionism believes that human life is composed of body, psychology and spirit. Meaning, so that the three are balanced and harmonious, people can maintain health and develop in an all-round way. Human physical and mental factors interact with each other. Both physical illness and psychological discomfort should be adjusted from a holistic perspective. The Interactionism focuses on the following health issues. Firstly, health should be seen as integration of physical, spiritual, social and mental health. Secondly, people must take main responsibility for their own health or illness. Thirdly, practitioners are obliged to act as teachers to teach or help people in developing attitudes, dispositions, beliefs, habits and practices in order to promote wellbeing. Fourthly, healthcare delivery systems should be changed to deal with the behavioral, social, and environmental sources of disease. Finally, personal healthcare services should focus on natural or non-invasive techniques in order to promote health. (Twenge, Baumeister, Tice, & Stucke, 2001).

In the early 1990s, Professor Chen was inspired by traditional Chinese fitness methods such as vegetarianism, Chinese qigong, and worshipping Buddha, and proposed and created a "whole-person health counseling model", which was used to counsel cancer patients. The model was initially mainly used for the counseling of chronically ill patients and has been used in Hong Kong for 20 years (Chen, 2022). Western culture is based on Christianity, and most people are familiar with the word of "spirituality". However, in the non-Christian world, it is quite difficult for most people to perceive its meaning. Therefore, wholeperson healthcare including spirituality is an imported concept based on the Western Christian world. The concept of "spiritual" must be integrated and modified according to the local cultural and religious characteristics, in order to practice whole-person healthcare with local significance. Understanding the spiritual dimension to imply a phenomenon that is not material in nature but belongs to the realm of ideas, beliefs, values and ethics that have arisen in the minds and conscience of human beings, particularly ennobling ideas. (WHO, 1984).

It can be seen that the concept of holistic health includes the following categories. Firstly, physical health refers to the normal functioning of the body's organs and systems, with adequate functions to meet the needs of daily life. Secondly, mental health refers to Ability to think evidently and thoroughly, state one's emotions, and deal with stress, sadness and anxiety. Thirdly, spiritual health refers to have self-belief, three views of harmony with society, and the ability to love and be loved, and having proper sympathy. Finally, social health refers to the ability to preserve harmonious relationships with others and to fit happily into the social system (Clark, Drain and Malone, 2003).

The Hierarchy of Needs Theory was put forward by Maslow in 1943 to describe how human needs motivation progresses in terms of "physiology", "safety", "belonging" and "love", "self-esteem", "self-actualization" and "self-transcendence". He believes that human needs start from low-level needs (physiology) and gradually progress to high-level needs (such as selftranscendence). The hierarchy of needs includes: (1) Physiological needs, such as food, water, sleep and other necessities to maintain good health. (2) Safety needs include: personal safety, life stability, physical health and self-security. (3) Love and belonging needs (also known as social needs), such as love and friendship needs. (4) esteem needs, such as achievement, reputation and status. (5) Self-actualization needs (need for self-actualization), such as self-actualization, development of potential, etc. These five needs may appear 2-5 at the same time, not as Maslow said that the upper class can be satisfied only after the lowest class needs to be satisfied. Physical and mental health is to include (1) physiological needs, (2) safety needs, and (3) love and belonging needs, also known as social needs) and (4) esteem needs (Maslow, 1943).

### **III. WESTERN MEDICINE, EASTERN MEDICINE AND FOLKLORE THERAPY, RELIGIONS AND BELIEFS, SPORTS AND MARTIAL ARTS APPROACHES**

Western medicine, which forms the basis of many of the world's modern health systems, dates back thousands of years. While Greek mythology held that health and disease were determined by the gods, the ancient Greeks were the first to observe the body through biological means. They study health by looking at four body fluids or "fluids" - blood, black bile, yellow bile and phlegm. Western medicine is an emerging modern medical scientific theoretical system based on anatomy, biology and modern science and technology. Western medicine focus on how medical professionals, such as doctors and nurses, use medical procedures such as drugs, radiation, and surgery to treat diseases. Western medicine makes a diagnosis based on a person's individual symptoms. Western medicine has preventive aspects of diet and exercise, but usually focuses on the use of drugs. Most of the world's modern

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healthcare systems are based on Western medicine. Western medicine is performed by physicians with formal degrees and allied health professionals. Until the 21st century, Western medicine remained largely based on principles established by the ancient Greeks. As Western medicine has evolved over the past 3,000 years, the key foundations of medical practice have remained the same. These include: (1) inquiries and examinations of the body and its symptoms, (2) the use of clinically validated scientific evidence to diagnose disease, and (3) health is a human right to be protected (Li, 1996).

Dr Yang Dingyi, as a MD, found that there are many diseases that modern Western medicine cannot handle by his 24 years of medical practice. For example, chronic diseases are quite difficult to treat well by Western medicine. In the past, Western medicine used to take medicine to suppress the symptoms as soon as they had. Instead of solving them from the origin, they focus on solving the symptoms. Therefore, patients with chronic diseases would take medicines for all their lifetime. Dr Yang Dingyi believes that we should not do nothing until we are sick. We should incorporate our body and mind to do a whole preventive medicine. He also believes that people are not to be treated as machines, but should be viewed as a whole person (Yang, 2012).

Many people use elements of Eastern medicine as their way of improving their health. Eastern medicine includes traditional Chinese medicine, Indian Ayurvedic healing techniques, and other traditional medicine in Asia. Chinese medicine can be traced back to more than 2,000 years ago. Chinese medicine focuses on the invisible meridians in the human body to achieve healthy balance. Chinese medicine mainly includes: (1) Acupuncture, (2) Chinese herbal medicine, (3) Oriental nutrition and dietary therapy practices, (4) Tuina and (5) Tai Chi and Qigong.

Oriental medicine places great emphasis on prevention, Oriental medicine diagnoses diseases by examining the entire body, focusing on the overall health being out of balance, and the treatment of Oriental medicine is also more comprehensive and balanced in physical health rather than individual organs (Taipei Economic and Cultural Center in India, 2020). Ayurvedic healing techniques in India focus on the balance of the three elemental energies (fire, water and air). Ayurveda patients recover their health through dietary changes, massage, herbal medicine and meditation. Oriental medicine places great emphasis on prevention, Oriental medicine diagnoses diseases by examining the entire body, focusing on the overall health being out of balance, and the treatment of Oriental medicine is also more comprehensive and balanced in physical health rather than individual organs (Lin, 2013).

Chinese medicine has been used in the medical system for the prevention, diagnosis and treatment of diseases for thousands of years. Chinese medicine includes acupuncture, diet, herbal remedies, meditation, martial arts and massage. The purpose of Chinese medicine is to maintain or restore balance and harmony between the body's natural opposing forces of yin and yang, which when out of balance can block qi and cause disease. It believes that qi (the vital energy of the body) flows along the meridians (channels) of the body, keeping the spirit, mind and body in balance and achieving a healthy state of the whole person (Lin, 2013).

Complementary and alternative medicine (CAM), as defined by the National Institutes of Health, refers to "a diverse set of medical and health care systems, practices, and products not generally considered part of modern Western medicine. The boundaries between CAM and conventional medicine are not absolute, and specific CAM practices may become widely accepted medicine with formal research findings. According to the 2002 health census conducted by the US National Center for Health Statistics, 62% of adults over the age of 18 in the United States use complementary and alternative medicine, and the proportion of cancer patients in particular as high as 70%. Complementary treatments in some Complementary and Alternative Medicine (CAM) and Western medical treatments can have complementary results, such as the use of acupuncture to help patients relieve pain. Alternative medicine in Complementary and Alternative Medicine (CAM) refers to treatments used to replace Western medicine. Integrative Chinese and Western medicine refers to the combination of Western medicine and Chinese medicine in complementary and alternative medicine (CAM) that has been shown to be safe and effective.

Complementary and Alternative Medicine (CAM) can be divided into five categories on the website of the National Institutes of Health (NIH). Firstly, natural products: refers to the intake of various botanicals, vitamins, minerals, probiotics and other natural products. In the NIH definition, it is specifically stated that general dietary supplements sold over the counter are not considered complementary and alternative medicine (CAM) products (NIH, 2005). Secondly, psychosomatic Medicine: Focusing on the interaction between the brain, mind, body and behavior, attempts to use the mind to influence physical function to promote health, which includes biofeedback, meditation, relaxation, group support, yoga, acupuncture, hypnosis, qigong and tai-chi and so on. Thirdly, body-based manipulations: massages including physical therapy and chiropractic manipulations. The main focus is on body structure and body-based manipulative systems, including bones, joints, soft tissues, circulatory and lymphatic systems. There are two common treatment methods, one is chiropractic, chiropractic, osteopathy, and the other is massage therapy.

Fourthly, energy medicine: It can be divided into two categories, one is bio-electromagnetic applications, including EEG, ECG, diathermy, energy medicine, laser, and radiofrequency surgery. The second is the impact of different energy fields on health, such as magnetic therapy and light therapy in electromagnetic fields, or biological fields called hypothetical energy fields, such as



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qigong, reiki, and touch therapy. These are all about vitality. Finally, whole medical system: Existing in different cultures and traditions, with a complete theoretical system and practical experience, such as Indian Ayurveda medicine, traditional Chinese medicine, Tibetan medicine, and modern homeopathy and natural treatment (Chien, 2021).

Although the American Medical College will offer courses in alternative therapy and award a certificate of completion. However, alternative medicine is still subject to controversy in the Western medical community in other countries. Medicine has moved towards evidence-based medicine in recent decades, and any effective treatment requires large-scale research data before it can be used. But most alternative medicines do not present scientific research data to prove the effectiveness of the treatment. The current alternative therapies mostly use "witness" methods to prove their therapeutic effects, which do not conform to the norms of Western medicine (Padit, Deepti, Srivastava, Shukla, Goyal, and Behari, 2016).

### **IV. HEALTH, SUB-HEALTH, ILLNESS, AND RECOVERING STATUS**

When the International Classification of Impairments, Disabilities, and Handicaps (ICIDH) led by British physician Wood was proposed, the main research team of WHO was. Based on the principle of taxonomy, he believes that a good classification system needs to be extended and mutually exclusive. The first version of ICIDH is based on the concept of disease taxonomy and constructs the entire model under the Disease Classification Dictionary (ICD 9), which is considered to be only a medical model (WHO, 1980). In the framework of the International Classification of Functioning, Disability and Health (ICF), the most important breakthrough is to change the measurement of disability from one-dimensional measurement to multi-dimensional data collection and measurement. , the disorder concept is covered in three main areas, body systems, functional activity, and participation. The first level of active pathology refers to our body's use of all immune and internal energy to fight against the defense mechanisms adopted by the body when it encounters external bacteria, trauma, etc., which is the so-called disease process (Nagi, 1965). The second level is the abnormal state of psychosocial, body system and organization, which is called damage. The third concept, functional limitations, refers to physical impairments that limit an individual's ability to perform activities of daily living and perform the individual's general roles and tasks. These roles include roles within the family, peer group roles, community, work and other interpersonal interactions or behaviors related to self-care. He believes that the so-called disorder refers to the type of behavior that involves physical, psychological long-term or persistent impairment, and limits the functioning of the individual (Wang, 2010).

The International Classification of Health, Functioning and Disability (ICF) is used to describe people's health, function or physical disability. It is a classification system, an assessment tool, a common language and a common basis for the world, and is applicable to different countries, A set of evaluation systems for different races, different professions, and different service areas. The International Classification of Health, Function and Disability (ICF), as a classification system for the state of mental and physical disabilities, is a collection of overall information on the health status and care services of people with disabilities after evaluation by a clinical professional team. The ICF scales are coded to describe physical function (codes begin with b), body structure (s), activity and participation (d), and environmental factors (e). The classification method is composed of four English codes and numbers, and the numbers represent the chapter codes of the ICF (Wang, and Yen, 2011).

The WHO defines health as a state of physical, mental and social integrity, not just the absence of disease. According to this definition, after statistics, the truly healthy (first state) and patients (third state) are less than 2/3, and more than 1/3 of the population is in the middle state between healthy and patients (third state). The health organization calls it the "third state", also known as the "sub-health" state. According to the survey results of the World Health Organization, only 5% of the people in the world are really healthy (the first state), only 20% of the people who have been checked and diagnosed by a doctor are patients (third state), and 75% of the people are in the Sub-health state (second state).

Sub-health can be divided into (1) physical sub-health, (2) mental sub-health, (3) spiritual sub-health, and (4) social sub-health. Firstly, body is on sub-healthy status, due to improper diet, lacking of exercise, weak functions in all aspects of the body, and prone to diseases. Secondly, mental sub-health originates from pressure of life, work and study, and resulting in abnormal behavior and unhappiness. Thirdly, spiritual sub-health would result in the mind and conscience, and the noble concepts belonging to concepts, beliefs, values and ethics, in which have not reached the healthy level. Finally, social sub-healthy, indifferent to the external environment and has no enthusiasm for life and society, making oneself more and more closed in body and mind, and the scope of activities is more and more narrow. If the sub-health statuses are handled properly, the body can be transformed from the third state to the first state; otherwise, it will enter the second state. This paper also distinguishes a fourth state, "recovery", under these three states. When the patient in the second state enters the fourth state and is handled properly, he can move to the first state, otherwise, if the patient is not handled properly, he will return to the second state. In the fourth state, methods such as oriental medicine adjuvant therapy and exercise are often used.

Based on the above discussion, this paper proposes an integrated whole-person health model as follows.

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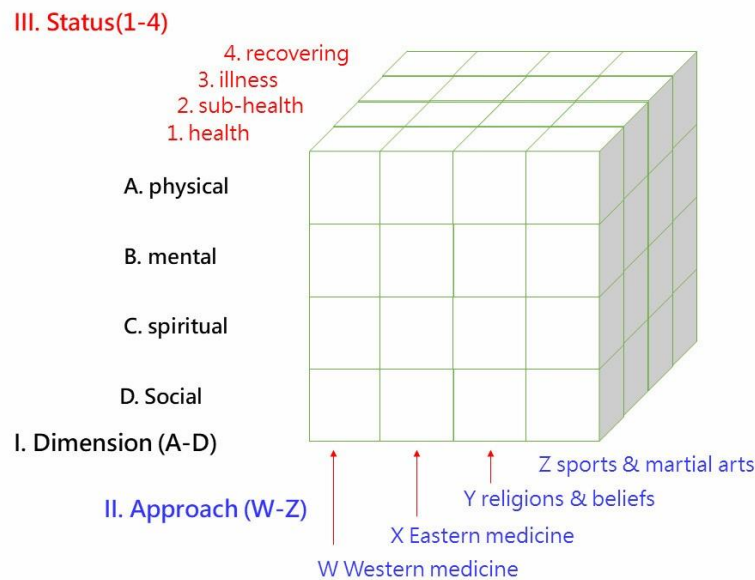


Chart 1 A Comprehensive Healthcare Model

### V. CONCLUSIONS

The definition of health has been as "not only the elimination of disease or infirmity, but the state of complete physical, mental and social health" by WHO since 1948 (WHO 2016). The whole person are only the body and mind, and without spirit in this definition and could be changed in the near future. The Interactionism believes that human life is composed of body, psychology and spirit. People can maintain health and develop in an all-round way as the three dimensions are balanced.

According to the WHO definition, health as a state of physical, mental and social integrity, not just the absence of disease, the truly healthy (first state) and patients (third state) are less than 25%, and 75% of the people are in the Sub-health state (second state). This paper distinguishes a fourth state: recovering, outside the three statuses. When the patient in the second state enters the fourth state and is handled properly, he can move to the first state, otherwise, if the patient is not handled properly, he will return to the second state. We propose a Comprehensive Healthcare Model to integrate the three parts: (1) Physical, Mental, Spiritual and Social Dimensions, (2) Western Medicine, Eastern Medicine and Folklore Therapy, Religions and Beliefs, Sports and Martial Arts Approaches, and (3) Health, Sub-health, Illness, and Recovering Status for the further research.

### REFERENCES

- 1) Chen, L.M. (2022) Integrative: Body, Mind, Spirit, source: <https://learning.hku.hk/ibms/home/about/what-is-ibms/>
- 2) Chien, T. J. (2021) A Balance Between Complementary and Alternative Medicine (CAM) and Mainstream Medicine, *Taipei City Med J* 2021; 18(4): 385-392.
- 3) Clark, P. A., Drain, M. and Malone, M. P. (2003) Addressing patients' emotional and spiritual needs, *Joint Commission Journal on Quality and Safety*, 29: 659-70.
- 4) G de Simone, and G Parati (2001) Imaging techniques for non-invasive assessment of coronary heart disease in hypertension: value of an integrated approach, *Journal of Hypertens*, 19(4):679-82.
- 5) Hodapp, R. M. (1999) Indirect Effects of Genetic Mental Retardation Disorders: Theoretical and Methodological Issues, *International Review of Research in Mental Retardation*, 22:27-50.
- 6) Li, J.W. (1996) East-West Medical Exchange and Integration of Chinese and Western Medicine, *Journal of Chinese Medicine*, 7(4):211-216.
- 7) Lin, Z.P. (2013) The Holistic Perspective: Chinese Medical Civilization and Spiritual Cultivation, *Journal of Religious Philosophy*, 64: 71-80.
- 8) Maslow, A.H. (1943) A theory of human motivation, *Psychological Review*, 50(4): 370-96.
- 9) Nagi, S. Z. (1965) Some conceptual issues in disability and rehabilitation., In Sussman, Marvin (Ed.), *Sociology and Rehabilitation*, 100-113, Washington D.
- 10) NIH (2005) Complementary and Alternative Medicine in the United States, source:

## A Comprehensive Healthcare Model: Dimension, Status, and Approach

<https://www.ncbi.nlm.nih.gov/books/NBK83799/>

- 11) Padit, A. K., Deepti, V., Srivastava, A. K., Shukla, G., Goyal, V. and Behari, M. (2016) Complementary and alternative medicine in Indian Parkinson's disease patients, *Journal of Traditional and Complementary Medicine*, 6(4): 377-382.
- 12) Taipei Economic and Cultural Center in India (2020) Introduction to Ayurvedic Medicine Industry in India, *Chinese Natural Medicine Research*, 3(2): 27-31.
- 13) Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behavior. *Journal of Personality and Social Psychology*, 81(6): 1058–1069.
- 14) Wang, K. Y. and Yen, C. F. (2011) The Evaluation Consistency of Professionals for People with Disabilities: International Classification of Functioning, Disability and Health Practical Applications, *Journal of Disability Research*, 9(4): 207-227. 15) Wang, K.Y. (2010) The Analysis of Nagi's Concept on Functional Limitation and Its Implication on ICF Coding System, *Journal of Disability Research*, 8(1): 1-17.
- 15) WHO (1980) International classification of impairments, disabilities, and handicaps : a manual of classification relating to the consequences of disease, published in accordance with resolution WHA29.35 of the Twenty-ninth World Health Assembly, May 1976. World Health Organization, source: <https://apps.who.int/iris/handle/10665/41003>
- 16) WHO (1984) Health promotion: a discussion document on the concept and principles : summary report of the Working Group on Concept and Principles of Health Promotion, Copenhagen, 9-13 July 1984. Source: <https://apps.who.int/iris/handle/10665/107835>
- 17) WHO (2011) Presentation: "Designing the Road to Better Health and Well-Being in Europe" at the 14th European Health Forum Gastein, source: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0003/152184/RD\\_Dastein\\_speech\\_wellbeing\\_07Oct.pdf](http://www.euro.who.int/_data/assets/pdf_file/0003/152184/RD_Dastein_speech_wellbeing_07Oct.pdf)
- 18) WHO (2013) Health in all policies: Helsinki statement. Framework for country action, source: <https://www.who.int/publications/i/item/9789241506908>
- 19) WHO (2016) Shanghai Declaration on promoting health in the 2030 Agenda for Sustainable Development, source: <https://www.who.int/publications/i/item/WHO-NMH-PND-17.5>
- 20) WHO (2022) Health and Well-Being, source: <https://www.who.int/data/gho/data/major-themes/health-and-well-being>
- 21) Yang, D. I. (2012) Returning to the energy of the heart Comprehensive medicine for body and mind - Authentic Medicine, *Zan World*, 97: 107-109.



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## Effect of Pre-Fabricated Toe Separator in Standing and Walking Balance in Individuals with Bilateral Hallux Valgus



Rina Fitriana Rahmawati<sup>1</sup>, Renaldy<sup>2</sup>, Tri Riana Lestari<sup>3</sup>, Agusni Karma<sup>4</sup>, Deby Eka Supadma<sup>5</sup>

<sup>1,2,3,4,5</sup> Department of Prosthetics and Orthotics, Poltekkes Kemenkes Jakarta I, Jakarta, Indonesia

**ABSTRACT:** Hallux valgus is deviation of forefoot's first ray toward midline of the body. Hallux valgus identified with proximal phalanx deviating laterally, first metatarsal head deviating medially with angle greater than 15°. The deformity is complex and affect standing balance and walking balance, causing disturbance to daily activities. Pre-fabricated toe separator is widely used in individuals with hallux valgus in order to prevent progression of deformity. It is cheap, easy to find in market, and simply fit inside shoes.

**Objective:** analyzed the effect of silicone toe separator on individual with bilateral hallux valgus in standing balance and walking balance.

**Methods:** There were 26 participants with bilateral hallux valgus joined the study, they were asked to stand and walk on a footscan. RSscan Footscan® measurement system was used to record and analyze standing and walking. Pressure and force distribution of foot without and with toe separator were analyzed. Then, participant asked to walk for 3 gait cycles without and with silicone toe separator. Center of Pressure Displacement (CoP) to base of support and forefoot balance were collected in this process.

**Results:** Using paired t-test, it was revealed that there are significant differences (P value 0.001) in center of pressure movement, forefoot balance are significant different with p-value 0.036; both without and with silicone toe separator in participants with bilateral hallux valgus conditions.

**Conclusion:** Silicone toe separator improves standing balance and walking balance in individual with bilateral hallux valgus.

**KEYWORDS:** Hallux valgus, standing and walking balance, pre-fabricated toe separator

### I. INTRODUCTION

Hallux valgus is deviation toward midline of the body of forefoot's first ray. Hallux valgus identified with proximal phalanx deviating laterally, first metatarsal head deviating medially with angle greater than 15° [1]. The deformity is complex and affect static balance, dynamic balance, painful, and causing disturbance to daily activities. Hallux valgus associated with Body Mass Index (BMI), foot pain, flat foot [2]. Footwear; pointed shoes and heel height also associated this condition [3]. The prevalence of hallux valgus is 23% in adults; 44% in women and 22% in men [4].

Hallux valgus causes metatarsal pronation and foot pronation, these position prevents the foot from moving into supination. Furthermore, it makes subtalar joint becomes too flexible and creates unbalance foot during standing. The pronated foot causes greater center of pressure (COP) shift medially than in normal foot, causing lack of stability during standing [5]. In normal gait, especially during push off, ankle joint requires dorsiflexion and supination movements to help strengthen the structure of the foot before swinging the leg. This mechanism requires rigid foot structure created by hallux extension to raise medial longitudinal arch thus provide power during push-off [6-7]. The mechanism fails in individual with hallux valgus because of great toe extension limitation during push-off, thus creates lack of stabilisation during walking [8]. Treatment of hallux valgus should be initiated as soon as possible to prevent worse progression in the future [9]. Pre-fabricated toe separator is widely used in individuals with hallux valgus in order to prevent progression of deformity. The device is made of foam, silicone, gel, rubber, designed to fit among toes. It is cheap, easy to find at market, and simply fit inside shoes. Wearing prefabricated silicone toe separator in proper shoes could prevent the progression of hallux valgus [10].

II. METHOD AND MATERIAL

Participants recruited in this study consisted of 26 subjects ranging in age between 19 and 25 years old. (Table I summarizes participant’ characteristics). Inclusion criterias, participants were having bilateral hallux valgus with >15 degrees angle, correctable hallux valgus (mild to moderate). Exclusion criterias, participants were age younger than 19 or older than 45 years, has unilateral hallux valgus, pregnant woman, and has underlying disease. Human research ethics committee of Health Polytechnic Jakarta I approved the study protocol, all participants taking part in the study given informed consent.

Exclusion criterias, participants were age younger than 19 or older than 45 years, has unilateral hallux valgus, pregnant woman, and has underlying disease. Human research ethics committee of Health Polytechnic Jakarta I approved the study protocol, all participants taking part in the study given informed consent. The researchers conducted assessment using Manchester scale to determine degree of hallux valgus. After all inclusions have been met, data collection processes began. RSscan Footscan® measurement system was used to record and analyze standing and walking plantar pressure data of participants. It recorded up to 500 frames of data a second uses sensors, allowing depth analysis of pressure and force distribution of the foot. The participants stood on force plate for 15 seconds and walked for 3 gait cycles without and with silicone toe separator. Center of Pressure displacement and forefoot balance were collected in this process.

Table 1. Characteristics of participants

VARIABLE	FREQUENCY	PERCENTAGE
Gender		
Male	6	23.1
Female	20	76.9
Total	26	100
Age		
18-19	11	42.3
20-21	13	50
>22	2	7.7
BMI		
>18.5	5	19.2
18.5-23	11	42.3
23-25	3	11.5
25-30	5	19.2
>30	2	7.7

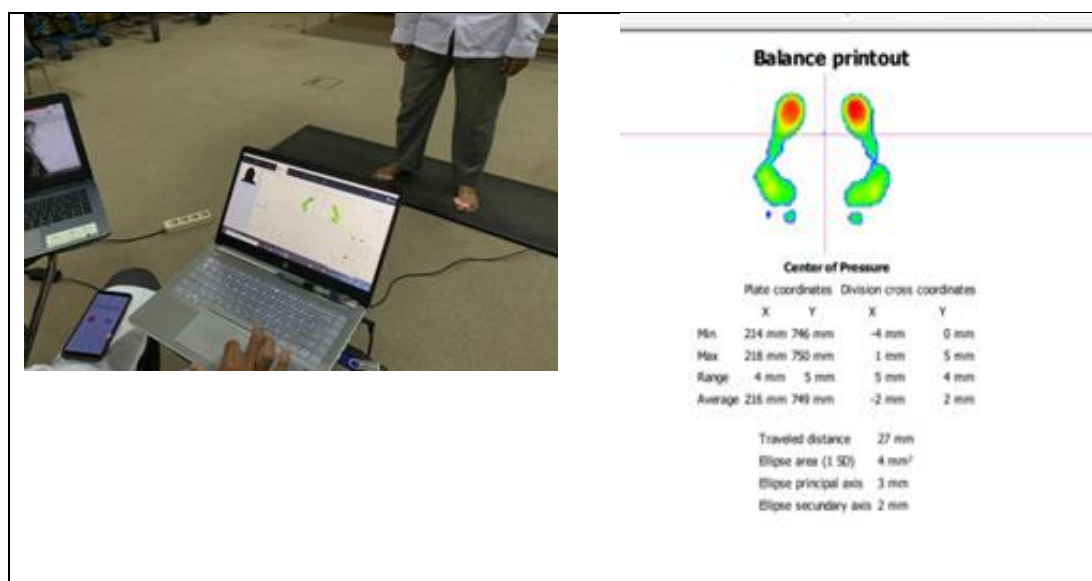


Figure 1. Data collection with footscan

# Effect of Pre-Fabricated Toe Separator in Standing and Walking Balance in Individuals with Bilateral Hallux Valgus

## III. RESULT

**Table 2. Frequency Distribution of Centre of Pressure Displacement With and Without Toe Separator**

Centre of Pressure displacement	Without		With	
	Frequency	%	Frequency	%
0-50 mm	20	76.9	33	88.5
50-355 mm	6	23.21	3	11.5
>355 mm	0	0	0	0
Total	26	100	26	100

Table 2 shows Frequency distribution of participants based on COP displacement

**Table 3. Frequency Distribution of Participants Based on Differences in Forefoot Balance**

Forefoot balance	Without		With	
	Frequency	%	Frequency	%
-40 - -20 Very stable	1	3.8	5	19.2
-20 - -0 stable	12	46.2	12	46.2
0 - 20 unstable	11	42.3	7	26.9
20-40 Very unstable	1	3.8	2	7.7
>40 Severe	1	3.8	0	0
Total	26	100	26	100

Table 3 shows frequency distribution of participants based on differences in forefoot balance.

The normal distribution of data was tested with Saphiro-Wilk test. Data obtained for all variables are normally distributed with p value > 0.05. Using paired t-test, it was revealed that there are significant differences (P value < 0.05) in center of pressure movement with p-value 0.001, forefoot balance p-value 0.036 both without and with silicone toe separator in participants with bilateral hallux valgus conditions. (Table 4).

**Table 4. Data Comparisons of Study Variables without and With Silicone Toe Separator**

	without	with	mean	p-value (p<0.05)	Description
CoP displacement	4.05	2.70	1.350	0.001	significance
Forefoot balance	2.09	-4.27	6.365	0.036	significance

Based on result, mediolateral center of pressure displacement in the dependent paired t-test stated that there was significant difference in the change of center of pressure position to base of support with P-value 0.001. There were significant difference in forefoot balance as well with P-value 0.036.

## V. DISCUSSION

Usage of toe-separator caused reduction of centre of pressure displacement in participants. The displacement reduced because toe separator provides better standing alignment of toes, those increase balance. The toe separator decreases pronation of foot, creates better structure of foot. This investigation is accordance with research conducted by [11], stated that the condition of the foot with pronation has greater center of pressure shift than the normal foot. More pronation of foot creates unstable foot. In this study, significant results were obtained. Silicone toe separator reduced medially displaced Centre of Pressure, thus reduced pronated foot, and creates better standing balance.

Data obtained shows significance value of forefoot balance with usage of silicone toe separator. The results of this study are in line with [11], which stated silicone toe separator can improve dynamic balance in participants with hallux valgus. This study

## Effect of Pre-Fabricated Toe Separator in Standing and Walking Balance in Individuals with Bilateral Hallux Valgus

obtained significant results, toe separator improved forefoot balance, spreading pressure more to great toe, provides better foot structure, reduce pronation of the foot thus make the foot more stable. Hallux is easier to extend, creates more rigid and stable foot for push off.

### VI. CONCLUSIONS

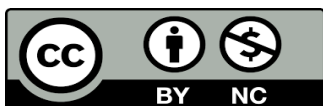
Silicone toe separator proven to be effective in standing and walking balance in patient with bilateral hallux valgus. It is reduced pronation, provides evenly distributed pressure, and creates rigid foot during walking. Stability and walking power, especially during push off were better. However, there are some variables excluded in this research because of investigators's limitations. In future research, it is recommended to add variables such as speed, cadence, and energy expenditure.

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### REFERENCES

- 1) Saltzman CL, et al. Reliability of standard foot radiographic measurements. *Foot Ankle International* 1994;661-665.
- 2) Nguyen, Uyen-Sa D.T. et al. Factors Associated with Hallux Valgus in a Population-Based Study of Older Women and Men: the MOBILIZE Boston Study'. *Osteoarthritis and Cartilage* 2010; 41-46. doi: 10.1016/j.joca.2009.07.008.
- 3) Puszczalowska-Lizis, E. et al. Foot deformities in women are associated with wearing high-heeled shoes. *Medical Science Monitor* 2019;25,:7746–7754. doi: 10.12659/MSM.917983.
- 4) Dufour, A. B. et al. Characteristics associated with hallux valgus in a population-based foot study of older adults. *Arthritis Care and Research* 2014; 66(12):1880–1886. doi: 10.1002/acr.22391.
- 5) Wagner, E. and Wagner, P. Metatarsal Pronation in Hallux Valgus Deformity: A Review. *Journal of the American Academy of Orthopaedic Surgeons Global Research and Reviews* 2020;4(6). doi: 10.5435/JAAOSGlobal-D-20-00091.
- 6) Kharb, A. et al. A review of gait cycle and its parameters. *IJCEM Int J Comput Eng Manag* 2011;13:78–83.
- 7) Farris, D. J., Birch, J. and Kelly, L. Foot stiffening during the push-off phase of human walking is linked to active muscle contraction, and not the windlass mechanism. *Journal of the Royal Society Interface* 2020;17(168). doi: 10.1098/rsif.2020.0208.
- 8) Perera, A. M., Mason, L. and Stephens, M. M. The pathogenesis of hallux valgus', *Journal of Bone and Joint Surgery - Series A* 2019; 93(17):1650–1661. doi: 10.2106/JBJS.H.01630.
- 9) Kuhn J, Alvi F. Hallux Valgus. [Updated 2022 Jun 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK553092/>
- 10) Kelly, A. R. ISU ReD : Research and eData The Effects of a Foot-Toe Orthosis on Dynamic Balance and Hallux Valgus Angle 2014
- 11) Kim, J. ah, Lim, O. bin and Yi, C. hwi. Difference in static and dynamic stability between flexible flatfeet and neutral feet. *Gait and Posture* 2015;41(2):546–550. doi: 10.1016/j.gaitpost.2014.12.012.



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## Impact of Shoes Characteristics to Lower Back Pain in Orthotics Prosthetics Students in Jakarta



Deby Eka Supadma<sup>1</sup>, Nabila Alya Azzahra<sup>2</sup>, Agusni Karma<sup>3</sup>, Tri Riana Lestari<sup>4</sup>,  
Rina Fitriana Rahmawati<sup>5</sup>

<sup>1,2,3,4,5</sup>Prosthetics Orthotics Department, Health Polytechnic of Jakarta I, Indonesia

**ABSTRACT:** Standing for more than 20 minutes causes low back pain (LBP). Students majoring in prosthetics orthotics need to practice and stand for more than 2 hours per day. Long standing requirement is un-avoided in students, causing musculoskeletal disorder such as low back pain. The characteristics of shoes are important in development and treatment of lower back conditions. Shoes have several features, which play important roles in posture stability. Usage of shoes with certain characteristics may contribute to low back pain in students.

**Objective:** To determine relationship between shoes characteristics and standing duration on low back pain in orthotic prosthetics students.

**Method:** Correlational quantitative method with cross-sectional design. Purposive sampling used in order to obtain sample of 30 people. Independent variables are the suitability of the shoes used, firmness of shoes soles, *heel counter of shoes*, and standing duration. Dependent variable is low back pain.

**Result:** The relationship between the suitability of the shoes used and low back pain obtained p value of 0.141. Relationship between firmness of shoes sole and low back pain obtained p value of 0.355. Relationship between shoes *heel counter* and low back pain obtained p value of 0.948. Relationship between standing duration and low back pain obtained p value of 0.01. Conclusion: Appropriate of shoes used, firmness of shoes soles, heel counter of shoes, do not have significant relationship with the LBP. Standing duration has significant relationship with LBP.

**Conclusion :** Appropriate of shoes used, firmness of shoes soles, heel counter of shoes, do not have significant relationship with the LBP. Standing duration has significant relationship with LBP.

**KEYWORDS:** Low Back Pain, Shoes Characteristics, orthotics prosthetics

### I. INTRODUCTION

Effectiveness of standing at work causes workers to perform this position for long period of time [17]. Despite of its productivity, standing can cause loss of movement in back, increased load on the tissues and leads to pain [14]. Standing for more than 4 hours a day increased lower back pain by 100% [2, 18]. Standing for more than 20 minutes will slowly reduce tissue elasticity, increases muscle pressure and causes discomfort in lower back area [35].

Low back pain (LBP) is clinical syndrome characterized by pain or unpleasant feeling in lower back area. It may be experienced as a pain, burning, stabbing, sharp or dull, or vague, ranging in intensity from mild to severe. The exact incidence of low back pain in Indonesia is unknown, estimated varies between 7.6% to 37% [36].

Students majoring in orthotic prosthetics need to implement their knowledge in practical session based on prosthetics/orthotics course. Standing time spent during practical session may varies among courses, but it takes more than 4 hours per day. For example, standing time to perform rectification of prosthesis/orthosis, fabrication of devices, and fitting process with model patient. Long standing requirement is un-avoided in students, causing musculoskeletal disorder such as low back pain.

A pair of shoes causes changes in standing posture, as well as changes in force and movement. The shoes are the only connection between body and ground during standing. Changing shoes may change standing posture and whole alignment of entire body [6]. The characteristics of shoes are important in development and treatment of various foot, lower limb, and lower back conditions [8]. Shoes have several features which play important roles in posture stability [30]. In addition, shoes are useful for providing weight support and additional shock absorption for the wearer [11].



## Impact of Shoes Characteristics to Lower Back Pain in Orthotics Prosthetics Students in Jakarta

Shoes with firm heel counter can control neutral position of heel, prevent it from collapsing to medial side [34]. Shoes can protect user from foot pronation, thus provide better balance and prevent low back pain [22]. Assessment of shoe characteristics can be done with Footwear Suitability Scale instrument [26]. This assessment determines how many characteristics of shoes are in accordance with the user's feet. Assessment of these characteristics are important to ensure that usage of shoes do not cause problems with the feet or back [8, 37]. Shoes used by students at Department of Prosthetics Orthotic during practical session are diverse. Commonly it is a pair of sneakers or sport shoes. The purpose of this study is to investigate relationship between shoe characteristics, standing duration, and lower back pain in students at Orthotic Prosthetic Department, polytechnique of health science of Jakarta I, Indonesia. Human research ethics committee of Health Polytechnic of Jakarta I approved study protocol, all participants taking part in the study given informed consent.

### II. METHOD AND MATERIAL

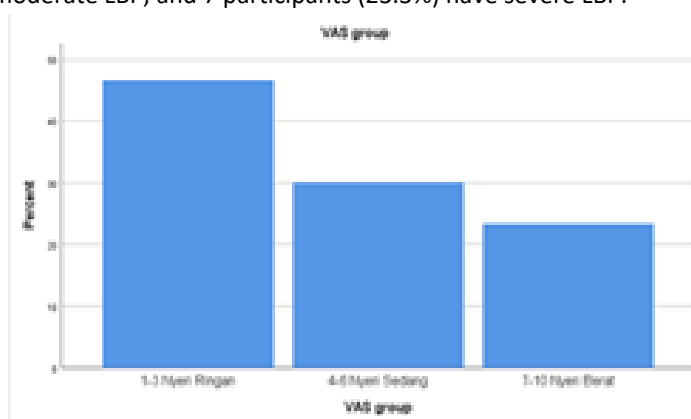
Correlational quantitative method with cross-sectional design was used for this investigation. Population in this study were students of Department of Prosthetic Orthotics, polytechnique of health science of Jakarta I, used purposive sampling method for participant sampling. The inclusion of this study were students of the Department of Orthotic Prosthetics, experienced at least 1 hours standing per day and experienced low back pain. Exclusion criteria are student with history of trauma, disease, or spine abnormalities.

Questionnaire contains Visual Analogue Scale (VAS) was used to describe level of low back pain. Participant's standing duration was asked. The Footwear Suitability Scale was used as a tool for measuring shoes characteristics of participants. It contains of suitability of shoes, firmness of soles, and heel counter features. SPSS v.25 for Windows was used to analyze the data. Bivariate data analysis used Kendall's tau-b test used to test relationship between two variables.

### III. RESULT

Table I summarizes participants' characteristics with highest age frequency of 20 years (66.7%), followed with 33.3% participant with 21 years old of age. By gender, 20 participants were female and 10 participants were male. There were 16 participants has normal body mass index/ BMI (53.3%), 7 participants (23.3%) in obese category, and 5 participants (16.7%), in thin category and 2 participants (6.7 %) in fat category.

In shoes characteristic, 12 participants wear quite appropriate shoes (40%), 11 participants wear appropriate shoes (36.7%), 7 participants wear quite appropriate shoes. In standing duration carried out by participants, the numbers are diverse. 12 participants (40%) stand for less than 2 hours per day, 9 participants (30%) stand 2-4 hour per day, 9 participants (30%) stand for more than 4 hour per day. **Figure 1** shows Lower Back pain scale experienced by participants. 14 participants (46.7%) have mild LBP, 9 participants (30%) have moderate LBP, and 7 participants (23.3%) have severe LBP.



**Figure 1** Bar Chart of LBP pain scale

## Impact of Shoes Characteristics to Lower Back Pain in Orthotics Prosthetics Students in Jakarta

**Table 1. Participants' characteristics**

Demographic	N	%
<b>Age</b>		
≤ 20 years old	20	66.7%
≥ 21 years old	10	33.3%
<b>Gender</b>		
Female	20	66.7%
Male	10	33.3%
<b>Body Mass Index (BMI)</b>		
Thin	5	16.7%
Normal	16	53.3%
Fat	2	6.7%
Obese	7	23.3%
<b>Shoe Characteristics</b>		
<b>Suitability Scale Assessment</b>		
Very Appropriate	7	23.3%
Appropriate	11	36.7%
Quite Appropriate	12	40%
<b>Standing Duration</b>		
≤ 2 hours	9	30%
2-4 hours	12	40%
≥ 4 hours	9	30%

Kendall's tau test was used to determine the relationship between suitability of shoes and low back pain. Result obtained with p-value 0.141, shows no significant relationship between two variables with correlation coefficient 0.245. (Table 2)

**Table 2. Relationship between suitability of shoes and low back pain**

Shoes suitability scale	Visual Analogue Scale						Total	
	Mild		Moderate		Severe		f	%
	f	%	f	%	f	%		
Very Suitable	5	35.7%	1	11.1%	1	14.3%	7	23.3%
Appropriate	4	28.6%	6	66.7%	1	14.3%	11	36.7%
Quite Suitable	5	35.7%	2	22.2%	5	71.4%	12	40%
Total	14	100%	9	100%	7	100%	30	
Correlations coefficient (Kendall's tau)							0.245	
P_value ( Kendall's tau)							0.141	

Table 3 shows results of non-parametric Kendall's tau to test relationship between each shoes characteristics and low back pain. "Firmness of sole" category shows significant relationship with p-value 0.355. With p-value > 0.05, it shows that there is no significant relationship between two variables with correlation coefficient of 0.163. Heel counter shows significant relationship with p-value 0.948. With p-value > 0.05, it shows that there is no significant relationship between two variables with correlation coefficient of -0.12.

## Impact of Shoes Characteristics to Lower Back Pain in Orthotics Prosthetics Students in Jakarta

**Table 3. Relationship between characteristics of shoes and low back pain**

Shoe Characteristics Against Low Back Pain			
Firmness of sole	Correlation coefficient	1.000	0.163
	Sig. (2-tailed)		0.355
Heel counter	Correlation coefficient	1.000	-0.12
	Sig. (2-tailed)		0.948

Table 4 shows Kendall's tau result to determine relationship between standing duration and low back pain, obtained p-value 0.01. It shows significant relationship between two variables with correlation coefficient of 0.541. The correlation coefficient shows two variables have strong relationship, and positive correlation (unidirectional). Positive correlation indicates that the longer the duration of standing, intensity of low back pain is higher.

**Table 4. Relationship between standing duration and low back pain**

Standing duration	Visual Analogue Scale						Total	
	Mild pain		Moderate pain		Severe pain		f	%
	f	%	f	%	f	%		
< 2 hours	8	57.1%	1	11.1%	0	0%	9	16.7%
2 – 4 hours	5	35.7%	4	44.4%	3	42.9%	12	53.3%
> 4 hours	1	7.1%	4	44.4%	4	57.1%	9	16.7%
Total	14	100%	9	100%	7	100%	30	
Correlation coefficient (Kendall's tau)							<b>0.541</b>	
P_value ( Kendall's tau)							<b>0.01</b>	

### V. DISCUSSION

Standing duration and low back pain have significant relationship. Longer standing duration creates more lower back pain in participants. The results of this study are in accordance with Susanti et al. (2015); discussed relationship between standing duration and myogenic low back pain in cashiers. Workers who carry out long standing activities in the same position for more than 20 minutes feel LBP. The results of this study also in accordance with Nelson-Wong (2010) conducted with 15 healthy respondents who were asked to stand for 2 (two) hours continuously while they're doing 4 (four) different jobs. There were discomfort in the lower back area turned into lower back pain when respondents were asked to stand for 4 hours every day [27].

### VI. CONCLUSIONS

Characteristics of shoes based on shoes suitability do not have significant relationship to LBP. Firmness of shoes sole and shoes heel counter do not have significant relationship with the LBP. Standing duration has significant relationship with LBP.

### ACKNOWLEDGMENT

This study was done by self-funding from the authors. The authors thank to all participants and research assistant.

### REFERENCES

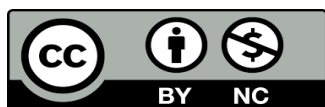
- 1) Aghazadeh, J., Ghaderi, M., Azghani, M. R., Khalkhali, H. R., Allahyari, T., & Mohebbi, I. (2015). Anti-fatigue mats, low back pain, and electromyography: An interventional study. *International Journal of Occupational Medicine and Environmental Health*, 28(2). <https://doi.org/10.13075/ijomeh.1896.00311>
- 2) Andersen, J. H., Haahr, J. P., & Frost, P. (2007). Risk factors for more severe regional musculoskeletal symptoms: A two-year prospective study of a general working population. *Arthritis and Rheumatism*, 56(4), 1355–1364. <https://doi.org/10.1002/ART.22513>
- 3) Anderson, J., Nester, C., & Williams, A. (2018). Prolonged occupational standing: the impact of time and footwear. *Footwear Science*, 10(3), 189–201. <https://doi.org/10.1080/19424280.2018.1538262>

## Impact of Shoes Characteristics to Lower Back Pain in Orthotics Prosthetics Students in Jakarta

- 4) Anderson, J., Williams, A. E., & Nester, C. (2020). Development and evaluation of a dual density insole for people standing for long periods of time at work. *Journal of Foot and Ankle Research*, 13(1), 1–13. <https://doi.org/10.1186/s13047-020-00402-2>
- 5) Anderson, J., Williams, A. E., & Nester, C. (2021). Musculoskeletal disorders, foot health and footwear choice in occupations involving prolonged standing. *International Journal of Industrial Ergonomics*, 81(July 2020). <https://doi.org/10.1016/j.ergon.2020.103079>
- 6) Anderson, J., Williams, A. E., & Nester, C. J. (2017). A narrative review of musculoskeletal problems of the lower extremity and back associated with the interface between occupational tasks, feet, footwear and flooring. *Musculoskeletal Care*, 15(4), 304–315. <https://doi.org/10.1002/msc.1174>
- 7) Baker, M. D., & Bell, R. E. (1991). The role of footwear in childhood injuries. *Pediatric Emergency Care*, 7(6), 353–355. <https://doi.org/10.1097/00006565-199112000-00009>
- 8) Barton, C. J., Bonanno, D., & Menz, H. B. (2009). Development and evaluation of a tool for the assessment of footwear characteristics. *Journal of Foot and Ankle Research*, 2(1), 1–12. <https://doi.org/10.1186/1757-1146-2-10>
- 9) Darmawan, D. D. (2013). *Metode Penelitian Kuantitatif* (Cetakan ke). PT Remaja Rosdakarya.
- 10) Devereaux, M. (2009). Low Back Pain. *Medical Clinics of North America*, 93(2), 477–501. <https://doi.org/10.1016/j.mcna.2008.09.013>
- 11) Dickinson, J. A., Cook, S. D., & Leinhardt, T. M. (1985). The measurement of shock waves following heel strike while running. *Journal of Biomechanics*, 18(6), 415–422. [https://doi.org/10.1016/0021-9290\(85\)90276-3](https://doi.org/10.1016/0021-9290(85)90276-3)
- 12) Ellis, S., Branthwaite, H., & Chockalingam, N. (2022). Evaluation and optimisation of a footwear assessment tool for use within a clinical environment. *Journal of Foot and Ankle Research*, 15(1), 1–9. <https://doi.org/10.1186/s13047-022-00519-6>
- 13) Gabell, A., Simons, M. A., & Nayak, U. L. S. (1985). Falls in the healthy elderly: predisposing causes. *Ergonomics*, 28(7), 965–975. <https://doi.org/10.1080/00140138508963219>
- 14) Gallagher, K. M., & Callaghan, J. P. (2015). Early static standing is associated with prolonged standing induced low back pain. *Human Movement Science*, 44, 111–121. <https://doi.org/10.1016/j.humov.2015.08.019>
- 15) Haefeli, M., & Elfering, A. (2006). Pain assessment. *European Spine Journal*, 15(Suppl 1), S17. <https://doi.org/10.1007/S00586-005-1044-X>
- 16) Hagen, M., & Hennig, E. M. (2009). Effects of different shoe-lacing patterns on the biomechanics of running shoes. *Journal of Sports Sciences*, 27(3), 267–275. <https://doi.org/10.1080/02640410802482425>
- 17) Halim, I., & Rahman Omar, A. (2011). *A review on health effects associated with prolonged standing in the industrial workplaces Development of a Decision Support System for Analysis and Solutions of Prolonged Standing in the Workplace. July 2015.* [www.arpapress.com/Volumes/Vol8Issue1/IJRRAS\\_8\\_1\\_03.pdf](http://www.arpapress.com/Volumes/Vol8Issue1/IJRRAS_8_1_03.pdf)
- 18) Harkness, E. F., Macfarlane, G. J., Nahit, E. S., Silman, A. J., & Mcbeth, J. (2003). Risk factors for new-onset low back pain amongst cohorts of newly employed workers. *Rheumatology* 42 *β* *British Society for Rheumatology*, 42, 959–968. <https://doi.org/10.1093/rheumatology/keg265>
- 19) Hasan, I. (2008). Analisis Data Penelitian Dengan Statistik. Cetakan Ketiga. In PT. Bumi Aksara. Jakarta. Bumi Aksara.
- 20) Hawker, M. (2012). Pain assessment. *Developing Healthcare Skills Through Simulation*, 15, 55–66. <https://doi.org/10.4135/9781446269954.n5>
- 21) Kendall, J. C., Bird, A. R., & Azari, M. F. (2014). Foot posture, leg length discrepancy and low back pain - Their relationship and clinical management using foot orthoses - An overview. *Foot*, 24(2), 75–80. <https://doi.org/10.1016/j.foot.2014.03.004>
- 22) Menz, H. B., Dufour, A. B., Riskowski, J. L., Hillstrom, H. J., & Hannan, M. T. (2013). Foot posture, foot function and low back pain: the Framingham Foot Study. *Rheumatology*, 52(12), 2275–2282. <https://doi.org/10.1093/rheumatology/keq298>
- 23) Menz, H. B., Lord, S. R., & McIntosh, A. S. (2001). Slip resistance of casual footwear: implications for falls in older adults. *Gerontology*, 47(3), 145–149. <https://doi.org/10.1159/000052788>
- 24) Menz, H. B., & Morris, M. E. (2005). Footwear characteristics and foot problems in older people. *Gerontology*, 51(5), 346–351. <https://doi.org/10.1159/000086373>
- 25) Menz, H. B., & Sherrington, C. (2000). The footwear assessment form: A reliable clinical tool to assess footwear characteristics of relevance to postural stability in older adults. *Clinical Rehabilitation*, 14(6), 657–664. <https://doi.org/10.1191/0269215500cr375oa>

## Impact of Shoes Characteristics to Lower Back Pain in Orthotics Prosthetics Students in Jakarta

- 26) Nancarrow, S. A. (1999). Footwear suitability scale: a measure of shoe fit for people with diabetes. In *Australasian Journal of Podiatric Medicine* (Vol. 33, Issue 2, pp. 57–62). <http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=1999059157&site=ehost-live>
- 27) Nelson-Wong, E., Howarth, S. J., & Callaghan, J. P. (2010). Acute biomechanical responses to a prolonged standing exposure in a simulated occupational setting. *Ergonomics*, 53(9), 1117–1128. <https://doi.org/10.1080/00140139.2010.500400>
- 28) Nuryadi, Tutut Dewi Astuti, Endang Sri Utami, & Martinus Budiantara. (2017). *Dasar-Dasar Statistika Penelitian*. Sibuku Media. <http://lppm.mercubuana-yogya.ac.id/wp-content/uploads/2017/05/Buku-Ajar-Dasar-Dasar-Statistik-Penelitian.pdf>
- 29) Ogon, M., Krismer, M., Söllner, W., Kantner-Rumplmair, W., & Lampe, A. (1996). Chronic low back pain measurement with visual analogue scales in different settings. *Pain*, 64(3), 425–428. [https://doi.org/10.1016/0304-3959\(95\)00208-1](https://doi.org/10.1016/0304-3959(95)00208-1)
- 30) Özkan, Ö. H. (n.d.). *A Research Of Footwear and Foot Interaction Through Anatomy And Human Engineering*. Retrieved May 9, 2022, from <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.427.6698&rep=rep1&type=pdf>
- 31) Patrianingrum, M., Oktaliansah, E., & Surahman, E. (2015). Prevalence and Risk Factors of Lower Back Pain in the Anesthesiology Workplace in Dr. Hasan Sadikin General Hospital Bandung. *Jurnal Anestesi Perioperatif [JAP]*, 3(1), 47–56.
- 32) Ramdas, J., & Jella, V. (2018). Prevalence and risk factors of low back pain. *Int J Adv Med*.
- 33) Rawls, Alan & Fisher, Rebecca, E. (2010). Development and Functional Anatomy of the Spine. *Spine, The Genetics and Development of Scoliosis*, 21–46.
- 34) Sevinsky, S. (2004). *Choosing Proper Footwear*. [http://scottsevinsky.com/pt/presentations/in-service\\_footwear.pdf](http://scottsevinsky.com/pt/presentations/in-service_footwear.pdf)
- 35) Susanti, N., Hartiyah, & Kuntowato, D. (2015). Hubungan Berdiri Lama Dengan Keluhan Nyeri. *Jurnal Pena Medika*, 5(1), 60–70.
- 36) Widiyanti, E. L., Endang, B., & Jannis, J. (2009). Lifting and transferring patient as risk factors for low back pain among female nurses. *Journal of the Indonesian Medical Association: Majalah Kedokteran Indonesia*.
- 37) Williams, A. (2007). Footwear Assessment and Management. *Podiatry Management, supplement*(October), 165–178.
- 38) Winata, S. (2014). Diagnosis dan Penatalaksanaan Nyeri Punggung Bawah dari Sudut Pandang Okupasi. *Jurnal Kedokteran Meditek*, 1607(20 (54): 20-27.).
- 39) Yohana, V. F., & Winata, H. (2017). Pengaruh Pemakaian Sepatu Hak Tinggi terhadap Low Back Pain pada Sales Promotion Girl Di Pekan Raya Jakarta 2016. *Jurnal Kedokteran Meditek*, 23(62). <https://doi.org/10.36452/JKDOKTMEDITEK.V23I62.1549>



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## Career Path Progression Model and Work Competency: A Design for Entrepreneurship Engagement University



Daryono<sup>1</sup>, Ary Yunanto<sup>2</sup>, Irma Suryahani<sup>3</sup>, Bambang<sup>4</sup>, Viviana Mayasari<sup>5</sup>

<sup>1,2,3,4,5</sup>Faculty of Economics and Business UNSOED & Jl. Prof. Dr. H.R. Boenyamin No.708 Grendeng Purwokerto, Central Java INDONESIA 53122

**ABSTRACT:** Entrepreneur Engagement University (EEU) complete model with learning tools needed by teaching staff to provide problem based learning teaching patterns that can touch the entrepreneurial side. It is time for lecturers to direct creativity and dedicate to students that educated entrepreneurs will provide enormous benefits. Not just teaching, but has penetrated to create new job opportunities for graduates in the future. The role of the lecturer is as an inspiration, motivator, and facilitator to produce graduates who are able to make a major contribution to themselves and others. Therefore, every lecturer and teacher must be equipped with a project based system learning methodology, to foster entrepreneurs for students.

This study aimed to find a proven Career Path Progression (CCP) model so that it could be used as a bridge in forming the work readiness of Universitas Jenderal Soedirman International Program graduates. This study used a research and development model from Gall, Gall and Borg (2014). A test was conducted to test whether the model developed met practical and effective criteria. The test was carried out with conceptual validation in the model planning building stage. The validated planning concept was then built on an initial product that could be applied. The test subjects were selected purposively, that was taking the test subjects. The results of the validation of the model guide quantitatively were that the model guide could be well understood by the validators. The resulting evaluation was not enough to measure only the level of satisfaction of participants during the implementation of the program, but also seen in the acquisition of knowledge and skills indicated by changes in behavior and products generated after they implemented CPP.

**KEYWORDS:** Curriculum Development; Career Path Progression Model. Entrepreneur Engagement University (EEU)

### I. INTRODUCTION

Improving the quality of human resources must be a priority for the development of the Indonesian people today. In 2015, Indonesia entered the era of the ASEAN Economic Community (AEC), so that the employment sector will be the main focus (Nam, 2009). In the era of industrialization and globalization, many changes in life occur quickly, thus requiring humans to have the ability to deal with these changes. Efforts to improve the quality of human resources are through improving the quality of education, both at the level of basic education to higher education.

The phenomenon of university graduates who are not absorbed in the world of work requires a change in the pattern of providing education, so that it can improve responses to various challenges. The lack of responsiveness towards changes in the surrounding environment is caused by the content of the university curriculum which is still scientific oriented. This situation causes challenges for universities, and what must be answered in the perspective of higher education with the world of work is how universities play a role in preparing graduates to immediately get a job. In this case, higher education needs to emphasize the importance of acquiring knowledge in relation to job descriptions. Related to its role, higher education as stated above and the problems encountered in the field, it is necessary to have a learning model that intervenes in career through courses so that the resulting model can be used as a bridge by students to be better prepared to enter the workforce (Pinchack, 2011; Cunningham, Dawes and Bennett, 2004).

### RESEARCH ROADMAP

This research was based on the results of preliminary research, analysed to find a solution in order to obtain components or devices that could be used as models to achieve work readiness. Some solutions were obtained through theoretical studies and

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empirical studies through FGD, then the solutions were proposed through the Career Path Progression (CPP) model. It is assumed that the CPP model as a treatment can be used as a bridge to achieve work readiness for students of the International Program at Universitas Jenderal Soedirman.

### **LITERATURE REVIEW**

#### **Career Path Progression direction**

One of the desired outcomes of CPP is job readiness which is the development of the knowledge and skills gained in working. This is in line with the soul of vocational education. Referring to various literatures (Leithwood and Hallinger, 2012; Knowles, Holton III and Swanson, 2014; Ragin and Amoroso, 2011; Ghauri, Grønhaug and Strange, 2020), the function of vocational education is: (1) preparing students to become fully Indonesian people who are able to improve the quality of life, be able to develop themselves and have the expertise and courage to open opportunities to improve income; (2) preparing students to become productive workforce; (3) meeting the needs of the workforce in the business and industrial world; (4) creating employment opportunities for themselves and for others; (5) changing student status from dependency to productive people; (6) preparing students to master science and technology; (7) being able to follow, master and adjust to the progress of science and technology; and (8) having the basic ability to be able to develop themselves in a sustainable manner.

The development of the CPP model in principle develops competence. Competence underlies the characteristics of people and shows how to behave or think, and generalize the situation and stay for a long time. Spencer and Spencer (2008) put forward five types of motivational characteristics, namely: (1) motives, one's consistency in what is desired, motives are direct impulses; (2) traits, characteristics and responses that are consistent with the situation or information; (3) self-concept, attitudes, values and self-image of a person; (4) knowledge, a description of someone in a specific context; and (5) skill, the ability to perform certain physical or mental tasks.

Career Path Progression (CPP) is one of the approaches used in developing career guidance courses in students' self-development efforts. It includes guidance on personal life, social skills, insight and career planning (Gysbers, Heppner and Johnston, 2003). Guidance is usually carried out programmed and not programmed (Herr, Cramer and Niles, 2004). Programmed activities are carried out through special planning in a certain period of time to meet the needs of students by individually, groups and / or classes attended by students according to their personal needs and conditions. Unprogrammed activities (routine, spontaneous, and exemplary) are carried out directly by educators and education staff in schools / madrasas, which are attended by all students (MONE, 2009).

#### **Perspectives of value and choice of work**

One of the perspectives of higher education and the world of work is the perspective of values and choices. Bauer and Liou (2020) explained that the perspective of values and choices is a challenge to the consensus of economic motives and social status that underlies someone to work. These values include: (1) intrinsic value in the form of pride in professionalism; (2) autonomy in work, namely the power to set their own work goals, processes and scheduling; (3) values related to the systematic function of knowledge innovation, for example conducting research, interest in new things, desire for innovation and invention as well as ideal values for changing lives for the better; (4) working conditions and work environment are considered increasingly important in the selection of work; and (5) socio-communicative environment outside the world of work such as reasons related to family and values of gender equality in the world of work.

#### **Learning theories underlying Career Path Progression (CPP)**

In connection with theoretical construction, there are several theories that underlie the use of approaches in the development of career guidance courses, namely cognitive learning theory. This cognitive learning theory emphasizes that learning is an activity that involves a very complex thought process. Parts of a situation are interconnected with the entire context of the situation. This theory holds that learning is an internal process that includes memory, retention, information processing, emotions and other aspects of the psyche (Slavin, 2019).

### **RESEARCH METHODS**

#### **Test design**

As an initial step in the test, the design stage of the model development was made. The test was carried out with the conceptual validation in the model planning building stage. The validated planning concept was then built on an initial product that could be applied. In this case, the concept model and the device model were built. The resulting product was then validated. The validation results were then analysed. If the results of the analysis showed valid, then produce a product of prototype 1. If a revision or invalid was suggested, then a revision was made and then produce a product of prototype 2.

## Test subject

The test subjects were selected purposively, that was taking the test subjects. Limited tests were conducted in the International Program.

## RESEARCH RESULTS AND DISCUSSION

### Research results of research stage

In accordance with the purpose of the research that was to get input on what aspects needed for the implementation of Career Path Progression, surveys, interviews and Focus Group Discussion (FGD) were conducted. The Focus Group Discussion was attended by various components that were considered able to provide input on the design of the CPP model. Some input from FGD results laid the foundation that career is not just a job, but as a life choice (path). One option is to get a job. The results showed that the aspects needed as a basis for designing a Career Path Progression model include: (1) orientation and information about the world of work; (2) self-introduction; and (3) skills in gaining employment and self-development in the world of work. Meanwhile, the solutions for designing the Career Path Progression model are: (1) preparing learning tools in the form of books or handouts that provide information about the world of work and learning guides that are able to bring students to recognize themselves; and (2) using relevant learning strategies such as job shadowing, field trips, discussions, simulations, games, case studies and assignments.

The following aspects can be identified to be used as materials for designing Career Path Progression model for International Program students as presented in Table 4, Table 5 and Table 6 below.

**Table 1. Work orientation and information**

- Competency information needed.
- Industry introduction orientation (management, facilities, organization and rules).
- Orientation of work type that graduates can enter.
- Information about job requirements.
- Information about wages and salaries, social security, layoffs and workers' organizations).
- Information on values and rules contained in career choices (work culture and work agreements).
- Local job market information.
- International job market information.
- Information on the advantages and obstacles of doing business.
- Identifying key job skills.

Based on the results of the FGD, the orientation and information on the world of work could be identified that there are 10 (ten) aspects that need to be treated, including competency information needed, industry introduction, information about industrial policies and various obstacles that are commonly encountered in running a business. The results of this FGD then needed to be synchronized with alternative input implementation in learning.

**Table 2. Introduction of self-ability**

- Getting to know self-potential.
- Understanding self-personality.
- Identifying self-motivation.
- Seeing self-performance.
- Seeing self-academic-abilities.
- Understanding the types of skills possessed.
- Tips for channelling talent and interest.
- Understand the "dream" work.

The second aspect after being grouped, it was found that an introduction to self-ability was needed. The identification results found that there were 8 (eight) items of self-introduction needed to be treated through a Career Path Progression model.

### Data on model development stage results

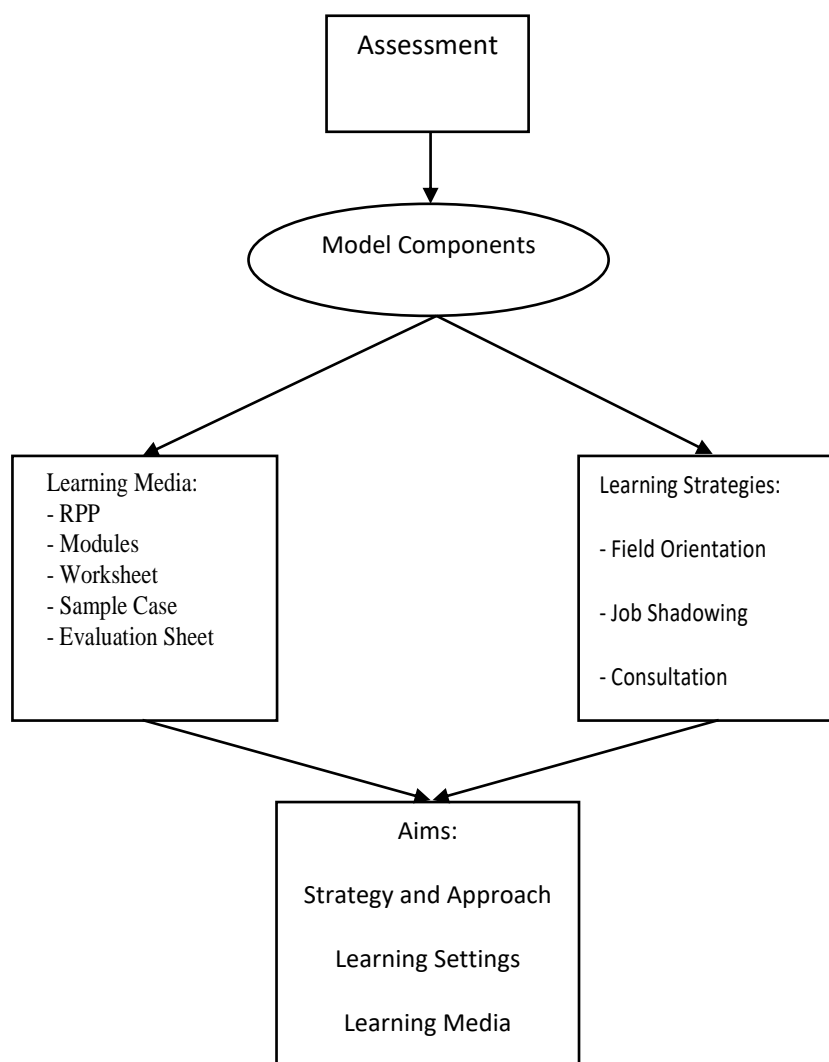
At this stage of model development, these activities were carried out: (1) designing the model; (2) developing a model set; (3) validating the model by relevant experts; (4) conducting limited tests; and (5) conducting extensive tests.



### Designing of the CPP hypothetical model

The model is defined as a conceptual framework that is used as a guide in carrying out an activity. In the context of learning, what is meant by the learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve certain learning goals. The basic design of the model rested on the results of the research consisting of theoretical and empirical studies of the results of need assessment in the field. Based on the results of the research stage, a design model emerged, the components of which were taken from the solutions and methods of achievement that were examined from theoretical and field studies. As a learning model implemented in vocational career guidance learning, the conceptual framework had systematic procedures, so this model was used as a guide in planning learning with appropriate learning tools and was used to help students achieve certain learning goals.

The design of the model was described as follows:



**Figure 1. CPP Hypothetical Model**

The characteristics of CPP for learning refer to the results of need assessment, namely:

- CPP can be done in the form of education or training.
- Learning is carried out in conditions that are quite conducive.
- PP development can be implemented for all students who need work readiness, especially International Program students.
- CPP program is intended as a “treatment” to prepare students to enter the workforce.
- CPP model requires 3 main things, namely: (1) information and work world orientation; (2) knowing self-abilities; and (3) job-grabbing skills and ability for self-development in the workforce.
- Tools needed for CPP learning are RPS and worksheets, case examples and evaluation sheets.

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- CPP model learning strategies involve methods of field orientation learning, job shadowing, discussion, case studies, assignments and simulations.
- Stage of learning includes introduction, core learning and closing.

Based on the characteristics of the model built, the implementation of the CPP model at the classroom practice level is described by the following model components:

**Table 3. Components of the Career Path Progression learning model**

No.	Model Components	Explanation
1.	Objectives	<ul style="list-style-type: none"> <li>• Providing information about the world of work to students.</li> <li>• Assisting students to make self-recognition</li> <li>• Providing skills to students to gain employment and self-development in the world of work</li> </ul>
2.	Stages	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Field visits</li> <li>• Learning the module</li> <li>• Self-recognition</li> <li>• Integration of communication, social and independence skills in learning</li> <li>• Evaluation</li> </ul>
3.	Strategies and Methods	<ul style="list-style-type: none"> <li>• Job shadowing</li> <li>• Problem based learning role play</li> <li>• Assignment</li> <li>• Field visits</li> <li>• Individual learning</li> <li>• Discussion</li> <li>• Group work</li> <li>• Games</li> </ul>
4.	Learning Settings	<ul style="list-style-type: none"> <li>• Inside the classroom</li> <li>• Outside the classroom</li> <li>• Field studies</li> </ul>
5.	Learning Tools	<ul style="list-style-type: none"> <li>• Model guidelines</li> <li>• Modules</li> <li>• Worksheets</li> </ul>
6.	Evaluation	<ul style="list-style-type: none"> <li>• Self-assessment</li> <li>• Work readiness</li> </ul>

The six model components support the Career Path Progression learning model. The component consists of learning objectives that will provide information about the world of work to students, help students make self-recognition and provide skills to students to get a job.

Stages of the activity in question are activities consisting of field visits, learning modules, self-recognition and how to learn skills to enter the workforce. Strategies and approaches used are job shadowing with the aim of introducing students to the world of work, problem-based learning to conduct learning based on problem case, role play to do the role of communication exercises, conducting competency tests and assignments.

### Learning support tools

- **Learning Plan (Action Plan)**, which is used by lecturers to direct students to achieve competency. Action plan is a learning plan that is made separately from the guide.

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- **CPP Model Guidebook**, contains prescriptions about the model, hypothetical models, model components and procedures as well as activities that must be carried out in implementing the model. In this case, there are guidelines that cover what must be done by students as learners and supervisors as well as value-setting procedures.
- **Evaluation Tools**, in this case, the evaluation of learning outcomes takes the form of self-evaluation after completing career guidance learning.
- **Supporting Formats**
  - Format of the participant's identity containing the student's name and number.
  - Field visit notes, descriptions of meeting results and signatures.

### EVALUATION

Basically, the objective of this assessment is to see the extent of the implementation of the CPP model in preparing graduates who are ready to work for International Program students. Evaluation of learning outcomes is basically developed based on 3 (three) basic aspects, namely knowledge, attitudes and skills. Furthermore, the results of this evaluation will be processed according to specified criteria.

### Preparation of the CPP learning model tools

The model tools are the product produced from this research. In accordance with the learning components, the learning tools are arranged to be the product of this development research, namely: (1) model guide; (2) CPP module; and (3) evaluation tools. In detail, learning tools can be explained as follows:

#### 1) Model guide

The model guidebook is information about the CPP development model. The contents contained in it consists of 3 chapters. Chapter I, namely the introduction, contains background, namely the background of the CPP model and the objectives of the CPP. Chapter II is in the form of mechanisms and procedures for implementing CPP. Chapter III contains guidelines for evaluating the CPP model.

#### 2) CPP modules

The modules produced by this research are modules that contain: (1) a description of the competencies needed; (2) modules containing employment; and (3) modules that are equipped with worksheets that contain self-recognition and job search skills.

#### 3) Evaluation tools

The evaluation needed by the CPP model is an evaluation of the feasibility of the model and an evaluation to test the effectiveness of the model. Evaluation of the feasibility of the model is to see whether the model can be implemented. Evaluation of the effectiveness of the model is to see how far the model can be effectively implemented in terms of benefits for work readiness of graduates.

### Validation and revision test results for the CPP model tools

First year research aimed to produce validated model tools. The model tools were tested qualitatively and quantitatively from both the content and language aspects.

The results of the validation of the model guide showed some criticism and were suggested to be improved. The points of criticism were aspects of the content: (1) the explanation was lacking in detail, the theory about CPP shall be added more; (2) the stages for studying material content needed to be illustrated in the model; (3) the name of the model needed to be written explicitly; (4) the urgency of applying the model needed to be explained; and (6) the standards that must be met in the model needed to be explained. Meanwhile, input on aspects of language and format were: (1) guidelines shall be arranged per chapter and table of contents needed to be provided; and (2) writing needed to be fixed.

Based on the validation results from the experts, the researcher revised the guidebook and formulated all the suggestions from the experts and integrated it into the guidebook. The learning guide was made separately, so that it became: (1) Career Based Intervention Model Guidebook which contained general information about rationalization, concepts and the mechanism of model implementation; and (2) an explanation of the role of the supervisor and the mechanism for implementing guidance and monitoring, as well as an overview of the design of learning activities.

Table 8. Validation results for the model guide

No.	Aspects	Validators			Score	Explanation
		A	B	C		
Chapter 1	Background: the background of why CPP is important to be developed	3	4	4	3.66	Very understandable
	Understanding of CPP in theoretical and empirical studies	4	4	4	4.00	Very understandable
Chapter II	CPP process	3	3	4	3.33	Understood
	Career Path Progression development model	4	4	3	3.66	Very understandable Very understandable Very understandable Very understandable
	The tacit knowledge learning model tools needed	3	4	4	3.66	Can be understood
Chapter III	Plan for implementing learning model for CPP development	3	2	2	2.33	Sufficiently understood
	Procedure for implementing the model	4	3	3	3.33	Can be understood
	Average				3.37	Can be understood

The results of the validation of the model guide quantitatively were that the model guide could be well understood by the validators. Some written inputs suggested that it was necessary to write down this guide for whom, whether for students or for supervisors. Needed to include the forms and strategies for applying the treatment given to students and how to evaluate the results of learning activities that had been carried out.

**CONCLUSIONS**

There were 2 groups of instruments used in the study. First, the instrument as the model tools. Second, the instrument for model development. The model instrument was a measurement that was produced through the implementation of CPP development. Meanwhile, the model development instrument was used to produce practical and effective model according to the user. This instrument referred to the evaluation of the Kirkpatrick (2013) model, namely: (1) reaction, looking at how the participants responded to the activity; (2) learning, seeing how the results of the learning process to improve competency at the time; and (3) behaviour, changes in attitudes caused and the results of how they used it, so that the resulting evaluation was not enough to measure only the level of satisfaction of participants during the implementation of the program, but also seen in the acquisition of knowledge and skills indicated by changes in behaviour and products generated after they implemented CPP.

**REFERENCES**

- 1) Bauer, K. D. & Liou, D. (2020). Nutrition counseling and education skill development. Boston: Cengage Learning.
- 2) Cuningham, I., Dawes, G., & Bennett, B. (2004). The handbook of work-based learning. Burlington: Gower Publishing Company.
- 3) Gall, M. D., Gall, J. P., & Borg, W. R. (2014). Applying educational research: how to read, do, and use research to solve problems of practice. Boston: Pearson Higher Ed.
- 4) Ghauri, P., Grønhaug, K., & Strange, R. (2020). Research methods in business studies. Cambridge: Cambridge University Press.
- 5) Gysbers, N. C, Heppner, M. J. Johnston, J. A. (2003). Career counselling proses, issues and techniques. Boston: Pearson Education, Inc.
- 6) Herr, E. L., Cramer, S H. Niles, S. G. (2004). Career guidance and counselling: through the lifespan. Boston: Pearson Education, Inc.
- 7) Kirkpatrick, D. (2013). Kirkpatrick four levels. Newnan: Kirkpatrick Partners, 201, 22-3.

## Career Path Progression Model and Work Competency: A Design for Entrepreneurship Engagement University

- 8) Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2014). *The adult learner: the definitive classic in adult education and human resource development*. London: Routledge.
- 9) Leithwood, K. A. & Hallinger, P. (Eds.). (2012). *Second international handbook of educational leadership and administration* (Vol. 8). Berlin: Springer Science & Business Media.
- 10) MONE. (2009). *The face of Vocational High Schools in Indonesia*. Jakarta: Bureau of Planning and International Cooperation, Secretariat General of the Ministry of National Education.
- 11) Nam, Y. J. J. (2009). *Pre-employment skills development strategies in the OEED*. USA: Word Bank.
- 12) Pinchack, J. (2011). *Syllabi course: Department Workforce Development and Education Section (WDE)*. Columbus: Ohio State University.
- 13) Ragin, C. C. & Amoroso, L. M. (2011). *Constructing social research: the unity and diversity of method*. Thousand Oaks: Pine Forge Press.
- 14) Slavin, R. E. (2019). *Educational psychology: theory and practice*. Boston: Allyn and Bacon.
- 15) Spencer, L. M. & Spencer, P. S. M. (2008). *Competence at work: models for superior performance*. New York: John Wiley & Sons.



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# Empirical Study of Temple Visitors in Indonesia: Mediation Role of Brand Engagement on the Relationship between Destination Brand Self-Congruence and Behavioral Intention



Ika Barokah Suryaningsih

Faculty of Economics and Business, University of Jember, Indonesia

**ABSTRACT:** The purpose of this study is to prove the Mediation Role of Brand Engagement in the Relationship between Destination Brand Self-Congruence and the Behavioral Intention to Visitors of Kwan Sing Bio Temple in Tuban Regency, Indonesia. This study uses an explanatory research approach using path analysis. The type of data used is qualitative which is quantified, with the source of data obtained from distributing questionnaires. The sampling method used purposive sampling. The sample used as many as 90 visitors to the temple. The results of this study indicate that destination brand self-congruence affects brand engagement. Destination brand self-congruence affects the intention to recommend. Brand engagement affects the intention to recommend. The Sobel Test (Sobel Test) proves that the role of brand engagement can mediate the effect of destination brand self-congruence on the intention to recommend to visitors to the Kwan Sing Bio Temple in Tuban Regency, Indonesia.

**KEYWORDS:** Destination, Brand Self-Congruence, Brand Engagement, Behavioral Intention, Temple.

## I. INTRODUCTION

Tourist visits to a tourist attraction will cause continuous stimuli. This means that tourists will decide to revisit or be loyal to these attractions. According to (Kotler & Keller, 2016) loyalty is a deeply held commitment to buy or support a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause customers to switch. The emergence of a loyal attitude will have an impact on the intention to recommend the tourist attraction visited by friends, family, or other consumers. This statement is reinforced by the research of (Zeithaml, Bitner, 2006), which revealed that loyalty attitudes include two main indicators, namely the customer's intention to repurchase and the intention to recommend services to other potential customers.

Intention to recommend part of loyalty according to C. F. Chen & Tsai (2007), is the assessment of tourists whether there is a desire to tell and convey an area to be visited by others. Tourists who carry out activities intending to recommend to friends or family will tend to judge a destination as having an attachment to the passion of the tourist. Consumers will have a strong attachment when consumers consume a product or brand that is attachment to themselves, this will lead to loyalty in consumers (Kang et al., 2015). Intention to recommend to others indirectly arises from the existence of brand engagement on someone. Kotler (2000) defines customer brand engagement as a manifestation of customer behavior towards the brand outside of purchasing activities resulting from individual customer motivation such as word of mouth, recommendations, interactions between consumers, blogging, writing reviews and other similar activities.

Perceptions of tourists in expressing their identity will tend to choose destinations that they believe have characteristics following their self-concept. This statement is reinforced by research by Solomon (2011), which reveals that consumptive activities are closely related to self-concept. Self-concept refers to how people think about themselves which will be very influential in explaining consumer behavior in destination selection. The psychological process of consumers' attachment to their perceptions of a product or brand towards their self-concept is called self-congruence (Sirgy et al., 2017). The research of

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Usakli & Baloglu (2011) reveals that the creation of self-congruence refers to the consistency between the individual's self-concept and brand image.

The relationship between self-concept (Kumar, 2016) and this destination can also lead to an intention to recommend (Suryaningsih et al., 2020), it's just that this activity of intention to recommend can be positive or negative considering that when someone visits a tourist destination he will feel whether his self-concept appropriate or not with the destinations that tourists visit. If the destination visited is deemed to follow its self-concept, tourists will tend to be loyal to that destination. This statement is supported by the research of Haj-Salem et al., (2016), which revealed that a brand that is associated with the consumer's self-concept is able to create an attachment within himself so that consumers view the brand as part of themselves and create a loyal attitude (Mishra, 2014). Brand engagement will make tourists tend to carry out positive activities to recommend to others the tourist destinations they visit.

Kwan Sing Bio Temple, which is located in Tuban Regency, Indonesia, is one of the largest pagodas in Southeast Asia, where the Kwan Sing Bio Temple building is very spacious and the place directly faces the wide sea. This pagoda uses a crab statue as a decoration on the gate. Apart from being a place of worship for the Tri Dharma people, this pagoda is also a tourist attraction. Kwan Sing Bio Temple is usually very crowded with tourists, both local and out-of-town tourists. Tourists who visit the Kwan Sing Bio temple are mostly not tri-dharma religious, but non-tri-dharma tourists. This gives rise to the perception of a destination brand of self-congruence between visitors and destinations, this is supported by the purpose of tourists, namely to enjoy the beautiful scenery in the inner courtyard of the pagoda. In addition to the beautiful scenery, this pagoda also has instagramable photo spots through the unique combination of building architecture, and also the statue of Kong Co Kwan Sing Tee Koen which is the statue of the tallest god in Southeast Asia. This makes Kwan Sing Bio Temple able to attract tourists to visit. The number of tourists visiting the Kwan Sing Bio temple will certainly lead to various assessments, such as the assessment of the Kang Sing Bio temple tourism rating on the Google website, then various reviews about this tourist destination. Based on the background, phenomena, theoretical and empirical that have been described, the urgency of this research is to examine the effect of destination brand self-congruence on the intention to recommend through brand engagement to visitors to the Kwan sing bio pagoda in Tuban Regency, Indonesia.

## **II. LITERATURE REVIEW AND HYPOTHESIS**

### **The Effect of Destination Brand Self-Congruence on Brand Engagement**

Usakli & Baloglu (2011) define destination brand self-congruence as referring to the consistency between the tourist's self-concept and the destination's brand image derived from the construct of self-concept. Self-congruence occurs when a consumer's self-concept is consistent with a brand so that consumers are more likely to generate preferences, positive emotions, and a sense of belonging to the brand. Thus, brand self-congruence can be conceptualized as the main driver of brand engagement (France et al., 2016). This opinion is supported by research by De Vries & Carlson (2014) which reveal that destination brand self-congruence has a significant effect on brand engagement. Thus the hypothesis can be formulated:

H1: Destination brand self-congruence affects brand engagement.

### **The Effect of Destination Brand Self-Congruence on Behavioral Intention**

Research results by Zhang et al., (2017), show that destination brand self-congruence has a significant effect on loyalty. Consumers prefer goods or services that express their identity. This is corroborated by the opinion of Haj-Salem et al., (2016), that a brand that is associated with the consumer's self-concept is able to create an attachment within itself so that consumers view the brand as part of themselves and create a loyal attitude (Duong et al., 2022). Based on the description above, the following hypothesis can be formulated:

H2: Destination brand self-congruence affects behavioral intention.

### **The Influence of Brand Engagement on Behavioral Intention**

Brand engagement is defined as the level of a consumer's motivation related to the brand and context-dependent thinking characterized by specific stages, namely cognitive, emotional and behavioral that interact directly with the brand (Khan et al., 2020). Brand engagement is an important method for building loyalty in the practical field (Bowden, 2009), this opinion is corroborated by the research of France et al., (2016) that brand engagement and consumer loyalty are interrelated with one another. Studies have indicated that highly engaged customers are advocates for a brand and are more likely to recommend it to others (Khan et al., 2020). Based on this description, the following hypothesis can be formulated:

H3: Brand engagement affects behavioral intention.

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## Indirect Effect of Destination Brand Self-Congruence on Behavioral Intention through Brand Engagement

Brand engagement variable can be used as a mediating variable between destination brand self-congruence and behavioral intention through social media as studied by H. Chen & Rahman, (2018) and R. Chen et al., (2020). Based on the findings of previous studies, the proposed hypothesis is:

H4: Destination brand self-congruence affects behavioral intention through brand engagement.

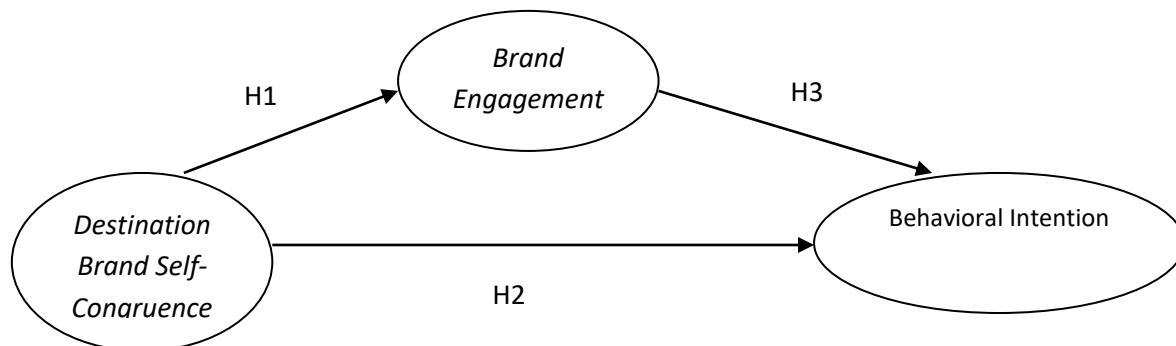


Figure 1. Conceptual Framework

### III. METHODS

This research is explanatory research or explanatory research, namely research that explains the causal relationship between variables and examines the relationship between several variables through hypothesis testing or explanatory research. This study was used to examine the causal relationship between several variables, namely Destination Brand Self-Congruence, Brand Engagement, and Intention to Recommend. In this study, the selected population was visitors to the Kwan Sing Bio Temple in Tuban Regency. This study uses a non-probability sampling technique in sampling, this is because the number of tourists visiting the Kwan Sing Bio Temple is not known. In this study, the sampling technique used is the purposive sampling technique. Several criteria were set by the researcher, namely respondents aged over 17 years, active internet users to measure behavioral intention through social media, and having visited the Kwan Sing Bio temple in person. The type of data in this study is qualitative data which is measured so that it becomes quantitative data which is then processed using statistics...This study uses primary and secondary data. The data collection technique used in this study was a questionnaire.

A validity test is used to measure whether a questionnaire is valid/valid or not (Raykov, 2012). A reliability test is a tool to measure a questionnaire which is an indicator part of a variable or construct. Items of questions or statements are said to be reliable or reliable if someone's answers are consistent. Path analysis is used for the data analysis method. Path analysis is part of the regression analysis used to analyze the relationship between variables, where the independent variables affect the dependent variable either directly or indirectly through one or more intermediate variables (Ghozali, 2016). Path analysis will estimate the causal effect between variables and the position of each variable in the path, either directly or indirectly.

The classical Assumption Test (Gujarati, 2013) is a test that aims to provide certainty that the regression equation results are unbiased and consistent. In this study, multicollinearity can be seen from the tolerance value and its opposite variance inflation factor (VIF). The cut-off value commonly used to indicate the presence of multicollinearity is the Tolerance value of 0.10 or the same as the VIF value of 10. In this study, the Glejser test was used to test heteroscedasticity. Hypothesis testing is used to determine the level of significance of the influence of the independent variable on the dependent variable by proving the truth of the research hypothesis. Test the hypothesis of this study using a t-test (partial). Path calculation explains the relationship of destination brand self-congruence (x) directly or indirectly to the intention to recommend (y) through the intervening brand engagement variable (z). Mediation Test with Sobel Test. The Sobel test is a test used to determine whether the relationship through a mediation variable is significantly capable of being a mediator in the relationship between the independent variable and the dependent variable (Fernandes & Solimun, 2018). If the results of the Sobel Test calculation show  $> 1.96$  and a significance value of 5%, it can be proven that the intervening variable is able to mediate the effect of variable X on variable Y.

### IV. RESULT AND DISCUSSION

In the following, descriptive statistics for each of the variables used in this study and data on the characteristics of the respondents are presented. The data used in this study include the following data: gender, age, occupation/profession, the origin of tourists, and purpose of visit. Descriptive data of respondents showed that the number of respondents who visited the



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Kwan Sing Bio Temple was dominated by young respondents with an average age of 18-25 years, namely 45 people or 50%, and ages 26-33 by 25 people or 27.8%. This shows that respondents among young and productive age groups visit the Kwan Sing Bio Temple more than older respondents because teenagers still have a lot of free time. Respondents who visited the Kwan Sing Bio Temple were dominated by respondents from among students, namely 40 people or 44.4%, and respondents with self-employed jobs 26 people or 29%. The student category is the most dominating because at a young age the desire for adventure is still very high, this is in line with the characteristics of respondents based on the age of 18-25 years who are also dominant in intending to travel. Tourists from the Kwan Sing Bio Temple were dominated from within the city or from the Tuban district as many as 70 people or 77.7% and those from outside the city as many as 30 people or 33.3%. Based on observations, most tourists from outside the city come from Lamongan, Gresik, Surabaya, Bojonegoro, and Rembang. The following descriptive statistical data of respondents are shown in table 1.

**Table 1. The Descriptive of Respondents**

<b>Gender</b>	<b>Percentage</b>	<b>Origin of Respondents</b>	<b>Percentage</b>
Male	53,4	In Tuban Regency	77,7
Female	46,6	Outside Tuban Regency	33,3
<b>Age</b>	<b>Percentage</b>	<b>Tujuan Berkunjung</b>	<b>Percentage</b>
18-25	50	Travel	90
26-33	27,8	Worship	3
34-40	17,8	Educational Activities	7
>40	4,4		
<b>Occupation</b>	<b>Percentage</b>		
Armed Forces/Police	3,3		
Civil servant	11,1		
Entrepreneur	29		
Student	44,4		
Others	12,2		

The purpose of the respondent's visit is to travel as much as 90%. However, as many as 7% of tourists come to the Kwan Sing Bio Temple for educational activities, such as study tour activities as much as 7%, and for worship as much as 3%. This shows that most of the visitors to the Kwan Sing Bio Temple are for tourism activities. The photo spots combine the scenery and Chinese architecture, this affects most tourists choosing to travel to the Kwan Sing Bio Temple.

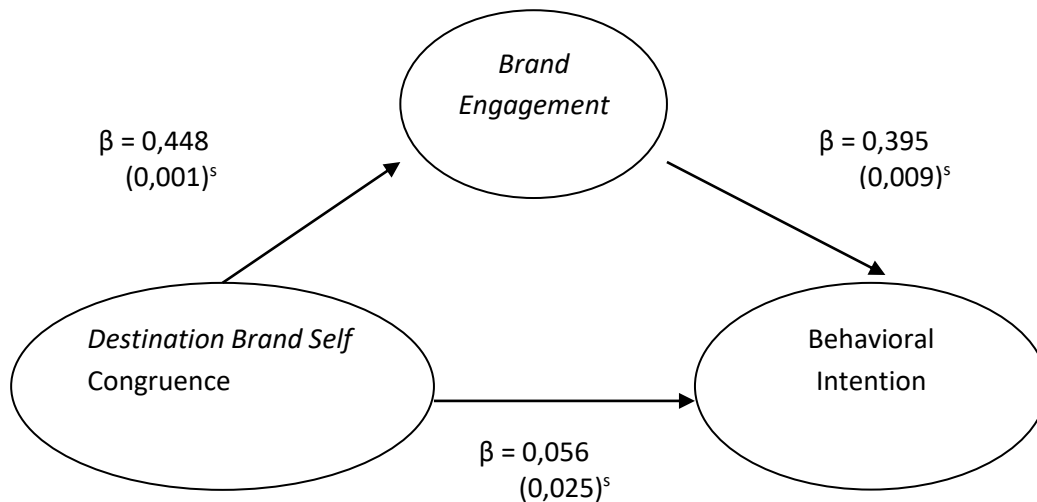
**Table 2. Validity and Reliability Test Results**

<b>Variables</b>	<b>Item</b>	<b>r-table</b>	<b>r-count</b>	<b>Description</b>	<b>Cronbach's alpha</b>	<b>Description</b>
Destination Brand Self-Congruence (x)	X1.1	0.1745	0,738	Valid	0,682	Reliable
	X1.2	0.1745	0,697	Valid		
	X1.3	0.1745	0,782	Valid		
Brand Engagement (z)	Z1.1	0.1745	0,583	Valid	0,681	Reliable
	Z2.2	0.1745	0,701	Valid		
	Z3.3	0.1745	0,644	Valid		
Behavioral Intention (y)	Y1.1	0.1745	0,659	Valid	0,789	Reliable
	Y2.2	0.1745	0,727	Valid		
	Y3.3	0.1745	0,714	Valid		

Based on the results of the validity test, it can be seen that the correlation between each variable indicator of Destination Brand Self-Congruence (X), Brand Engagement (Z), and Behavioral Intention (Y) shows that r-count r-table with Sig 0.05. From these results, it can be concluded that all statement items from Destination Brand Self-Congruence (X), Brand Engagement (Z), and Behavioral Intention (Y) are declared valid and can be used as tools for collecting research data. The results of the reliability test

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instrument show that each variable has a Cronbach's Alpha value of 0.60. From these results, it can be concluded that all statement items in the questionnaire can be said to be reliable and can be used as a tool for collecting research data. The results of the normality test show that the destination brand self-congruence (X) variable has a significance value of 0.062, the brand engagement variable (Z) has a significance value of 0.200, and the behavioral intention variable (Y) has a significance value of 0.200. The value is greater than 0, 05. Thus, it can be stated that the data in this study are all normally distributed variables.



**Figure 2. Path Analysis Test Results**

To analyze the first path, it can be explained that destination brand self-congruence (x) and brand engagement (z) have a significant effect. It can be seen by the results of a significant value that is 0.000 smaller than = 0.05. The second path between destination brand self-congruence (x) and the intention to recommend (y) has a significant effect, which is 0.025, which is smaller than = 0.05. The third path, between brand engagement (z) and behavioral intention (y), has a significant effect of 0.000, which is smaller than = 0.05.

**Table 3. Multicollinearity Test Results**

Path	Collinearity Statistics		Description
	Tolerance	VIF	
X Z →	1,000	1,000	There is no multicollinearity
X Y →	0,799	1,251	There is no multicollinearity
Z Y →	0,799	1,251	There is no multicollinearity

Based on table 3, it can be seen that there is no multicollinearity in the path. This can be seen from the results of the multicollinearity test where the VIF value of each variable is smaller than 10, and the tolerance value is 0.01., so it can be concluded that all variables consisting of destination brand self-congruence, brand engagement and intention to recommend no symptoms of multicollinearity. Hasil uji heteroskedastisitas pada jalur satu (x – z), jalur 2 (x-y), maupun jalur 3 (z-y) menunjukkan bahwa nilai signifikansi masing- masing variabel lebih besar dari 0,05, sehingga dari hasil tersebut dapat diketahui bahwa tidak terjadi heteroskedastisitas dari persamaan yang diuji.

**Table 4. t-test results**

Hypothesis	t-count	t-table	p-value	Description
H1	4,701	1,663	0,000	H <sub>0</sub> is rejected, H <sub>a</sub> is accepted
H2	1,719	1,663	0,025	H <sub>0</sub> is rejected, H <sub>a</sub> is accepted
H3	3,637	1,663	0,000	H <sub>0</sub> is rejected, H <sub>a</sub> is accepted

Calculating direct effect (Direct Effect or DE):

The effect of destination brand self-congruence (x) on brand engagement (z)

DE XZ = X → Z is 44.8%

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The effect of destination brand self-congruence (x) on intention to recommend (y)

DE XY = X → Y is 5.6%

The effect of brand engagement variable (z) on the intention to recommend (y)

DE ZY = Z → Y is 39.5%

Calculating indirect effects (Indirect Effect or IE):

The effect of destination brand self-congruence (x) on intention to recommend (y) through brand engagement (z)

IE XYZ = X → Z → Y is equal to (0.448 x 0.395) = 0.176

Calculating Total Effect:

Total effect : Y X→Z→Y, 0,056 + 0,176= 0,232 or 23,2%

**Table 5. Sobel Test Results**

<i>Path</i>	<i>Sobel Test</i>	<i>p-value</i>	<i>Description</i>
<b>X→Z→Y</b>	2.87467466	0.004	Significance

The Sobel test is used to determine whether the relationship through a mediating variable is significantly capable of being a mediator in the relationship. the intervening variable was able to mediate the effect of variable X on Y. Thus, the variable brand engagement was able to mediate destination brand self-congruence on the intention to recommend Kwan Sing Bio Temple tourists.

***The Influence of Destination Brand Self-Congruence Variables on Brand Engagement***

Based on the results of the path analysis on the t-test that the destination brand self-congruence variable has a significant effect on the brand engagement variable. This shows that the increasing destination brand self-congruence will further increase the brand engagement of visitors to the temple or any destination visited by tourists. According to (Sirgy et al., 2017), Destination brand self-congruence is a psychological process of consumers' attachment to their perception of a product or brand with their self-concept. In this case, what is meant is the compatibility of a person with the destination of the Kwan Sing Bio Temple of Tuban which has an image, distinctiveness, and characteristics that are suitable for the personality of each tourist. The big side that will be obtained in this case is that the Kwan Sing Bio Temple of Tuban is not only enjoyed by the Chinese for worship. The results of the study prove that the destination brand self-congruence variable on brand engagement is equally influential. This can be seen from the number of visitors who agree that they have an emotional attachment. In the sense that tourists who visit the Kwan Sing Bio Temple in Tuban, both from within the city and outside the city, teenagers and adults, both from the student level and those who have also worked, feel that the tourist attractions of the Kwan Sing Bio Temple in Tuban have an attachment to each tourist. . However, in this case, it can also be shown that the Kwan Sing Bio Temple of Tuban has also become a tourist spot and has become a brand or added value for foreign tourists, both from within the city and outside the city, the article shows that the results of this study agree regarding the influence of destination brand self-congruence to brand engagement is that tourists who have visited the Kwan Sing Bio Temple in Tuban have the same attachment according to their personality to the tourist attractions as well as places of worship.

***The Influence of Destination Brand Self-Congruence Variables on Behavioral Intention***

Destination brand self-congruence has a significant effect on behavioral intention variables. According to (Sirgy et al., 2017), Destination brand self-congruence is a psychological process of consumers' attachment to their perception of a product or brand with their self-concept. Destination brand self-congruence consists of a match between a person's self-concept and the tourist destinations visited, such as the atmosphere, ornaments, and values that exist in the tour.

Based on the results of the distribution of questionnaires and calculations state that they both agree. The researcher concludes that the influence of destination brand self-congruence on the intention to recommend tourism as well as a place of worship for the Kwan Sing Bio Temple of Tuban is stated to be influential. The reason is that tourist visitors both from the city and outsiders have agreed to the intention of recommending the Kwan Sing Bio Temple, in this case, it becomes an added value to tourist attractions as well as places of worship at the Kwan Sing Bio Temple. In other words, tourists visiting the Kwan Sing Bio Temple in Tuban feel that the quality of the Kwan Sing Bio Temple in Tuban is worthy of being recommended. In this case, some of them will upload photos of their experience of visiting the Kwan Sing Bio temple through social media, or make a review about their visit to the Kwan Sing Bio temple through social media or may recommend it, so that other people visit the Kwan Sing Bio temple through the media. social.

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### ***The influence of brand engagement variable on behavioral intention***

The brand engagement has a significant effect on behavioral intention variables. So this proves that a higher level of brand engagement will increase the intention of tourists to recommend tourist destinations (H3 is accepted). According to Spratt et al., (2009), brand engagement is an individual difference that shows the tendency of consumers to include important brands as part of how they see themselves. This concludes that when someone has an attachment to a travel brand/destination, someone will tend to make it their top choice.

Based on the results of the explanation above, in the research conducted by the researcher, it can be explained that the brand engagement variable (z) on the intention to recommend (y) the results has an effect. Here it is seen that, brand engagement or the level of a consumer's motivation related to the brand and context-dependent thinking at specific stages, namely cognitive, emotional, and behavioral that interacts directly with the brand. This means that visitors who come to the Kwan Sing Bio Temple in Tuban will recommend these tourist attractions as well as places of worship. Here it can be seen from how visitors when they come to visit the Kwan Sing Bio Temple feel, are interested in visiting the Kwan Sing Bio Temple, feel happy when visiting the Kwan Sing Bio Temple and feel like the Kwan Sing Bio Temple destination rather than other similar religious tours. Because later visitors will recommend the Kwan Sing Bio Temple in Tuban in the form of, some of them will upload photos of their experience of visiting the Kwan Sing Bio Temple through social media or make reviews about visiting the Kwan Sing Bio Temple through social media or may recommend that people others visited the Kwan Sing Bio temple through social media (Duong et al., 2022).

### ***The effect of destination brand self-congruence on behavioral intention through brand engagement***

Based on the results of the Sobel Test calculation, the Sobel test value (2.874) > 1.98 with a significance level of  $0.004 < 5\%$ , it proves that the intervening variable is able to mediate the effect of the X variable on Y. Thus, the brand engagement variable is able to mediate the destination brand self-congruence to the intention to recommend Kwan Sing Bio Temple tourists (H4 accepted). The indirect effect of the destination brand self-congruence variable on the intention to recommend through brand engagement has a coefficient of (0.176). Based on the test results, the researcher concludes that the effect of the destination brand self-congruence (x) variable on the intention to recommend (y) through brand engagement (z) has an effect. Where visitors from the Kwan Sing Bio Temple in Tuban feel that the Kwan Sing Bio Temple in Tuban is a tourist place that they think reflects their personality side of themselves so visitors who come to the Kwan Sing Bio Temple will ultimately recommend tourist attractions as well as places of worship for the Chinese. This is an interesting tourist spot.

Tourist visitors to the Kwan Sing Bio Temple in Tuban feel that the quality of the Kwan Sing Bio Temple in Tuban is worthy of being recommended. In this case, some of them will upload photos of their experience of visiting the Kwan Sing Bio temple through social media, make a review of their visit to the Kwan Sing Bio temple through social media, or may recommend that other people visit the Kwan Sing Bio temple through social media.

Then afterward, through brand engagement, visitors who after coming to visit the Kwan Sing Bio Temple feel also interested in visiting the Kwan Sing Bio Temple, feel happy when visiting the Kwan Sing Bio Temple, and feel like the Kwan Sing Bio Temple destination rather than other similar religious tours. So in this case, visitors who feel that Kwan Sing Bio Temple tourists have an attachment side according to their personality, then the intention of recommending (Yu et al., 2019) them will appear when they feel very comfortable, and happy when they come or will come back to Kwan Sing Bio Temple Tuban.

## **V. CONCLUSIONS**

Based on the results of the analysis and discussion that researchers have explained, it can be concluded as follows: Destination Brand Self-Congruence has a significant effect on Brand Engagement. The direction of the relationship between Destination Brand Self-Congruence and Brand Engagement is positive. This proves that a higher level of Destination Brand Self-Congruence will increase Brand Engagement. Destination Brand Self-Congruence has a significant effect on the Intention to Recommend. The direction of the relationship between Destination Brand Self-Congruence and Intention to Recommend is positive. This proves that the higher the level of Destination Brand Self-Congruence, the higher the Intention to Recommend. Brand Engagement has a significant effect on the Intention to Recommend. The direction of the relationship between Brand Engagement and Intention to Recommend is positive. This proves that a higher level of Brand Engagement will increase the Intent to Recommend. The Sobel Test (Sobel Test) proves that the intervening variable, namely Brand Engagement, is able to mediate the effect of the Destination Brand Self-Congruence variable on the Intention to Recommend Kwan Sing Bio Temple tourists. The contribution of this research to the management of Kwan Sing Bio Temple is expected to be able to improve marketing strategies. The better the marketing strategy, the more tourism will be maintained and more widely known and can develop for the better. Marketing strategy can be done by paying attention to the facilities and needs of tourists so that tourists feel the attachment between

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tourist destinations and themselves so that the intention arises to recommend them or even make repeat visits. The results of this study indicate that Brand Engagement has a positive effect on the Intention to Recommend to tourists. Brand Engagement must be considered because at this time the level of tourist visits is a measure of the success of a destination. Local governments must continue to develop the tourism sector, such as paying attention to road access or facilitating licensing of festivals in order to further develop the tourism sector.

### REFERENCES

- 1) Bowden, J. (2009). The process of customer engagement: A conceptual framework. *Journal of Marketing Theory and Practice*, 17(1), 63–74. <https://doi.org/10.2753/MTP1069-6679170105>
- 2) Chen, C. F., & Tsai, D. C. (2007). How destination image and evaluative factors affect behavioral intentions? *Tourism Management*, 28(4), 1115–1122. <https://doi.org/10.1016/j.tourman.2006.07.007>
- 3) Chen, H., & Rahman, I. (2018). Cultural tourism: An analysis of engagement, cultural contact, memorable tourism experience and destination loyalty. *Tourism Management Perspectives*, 26(April 2017), 153–163. <https://doi.org/10.1016/j.tmp.2017.10.006>
- 4) Chen, R., Zhou, Z., Zhan, G., & Zhou, N. (2020). The impact of destination brand authenticity and destination brand self-congruence on tourist loyalty: The mediating role of destination brand engagement. *Journal of Destination Marketing and Management*, 15(3688), 100402. <https://doi.org/10.1016/j.jdmm.2019.100402>
- 5) De Vries, N. J., & Carlson, J. (2014). Examining the drivers and brand performance implications of customer engagement with brands in the social media environment. *Journal of Brand Management*, 21(6), 495–515. <https://doi.org/10.1057/bm.2014.18>
- 6) Duong, L. H., Phan, Q. D., Nguyen, T. T., Huynh, D. Van, Truong, T. T., & Duong, K. Q. (2022). Understanding Tourists' Behavioral Intention and Destination Support in Post-pandemic Recovery: The Case of the Vietnamese Domestic Market. *Sustainability*, 14(16), 9969. <https://doi.org/10.3390/su14169969>
- 7) France, C., Merrilees, B., & Miller, D. (2016). An integrated model of customer-brand engagement: Drivers and consequences. *Journal of Brand Management*, 23(2), 119–136. <https://doi.org/10.1057/bm.2016.4>
- 8) Ghazali, I. (2016). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 23 (VIII)*. Badan Penerbit Universitas Diponegoro.
- 9) Gujarati, D. N. (2013). *Basic Econometrics* (Fifth Edition). Asia: The McGraw-Hill Companies. Inc.
- 10) Haj-Salem, N., Chebat, J. C., Michon, R., & Oliveira, S. (2016). Why male and female shoppers do not see mall loyalty through the same lens? The mediating role of self-congruity. *Journal of Business Research*, 69(3), 1219–1227. <https://doi.org/10.1016/j.jbusres.2015.09.011>
- 11) Kang, J., Tang, L., & Lee, J. Y. (2015). Self-Congruity and Functional Congruity in Brand Loyalty. *Journal of Hospitality and Tourism Research*, 39(1), 105–131. <https://doi.org/10.1177/1096348012471377>
- 12) Khan, I., Hollebeek, L. D., Fatma, M., Islam, J. U., & Rahman, Z. (2020). Brand engagement and experience in online services. *Journal of Services Marketing*, 34(2), 163–175. <https://doi.org/10.1108/JSM-03-2019-0106>
- 13) Kotler, P. (2000). Marketing Management, Millenium Edition. *Marketing Management, Millenium Edition*, 23(6), 188–193. [https://doi.org/10.1016/0024-6301\(90\)90145-T](https://doi.org/10.1016/0024-6301(90)90145-T)
- 14) Kotler, P., & Keller, K. L. (2016). *Marketing Management 15 Global Edition*. <https://doi.org/10.1080/08911760903022556>
- 15) Kumar, V. (2016). Examining the role of destination personality and self-congruity in predicting tourist behavior. *Tourism Management Perspectives*, 20, 217–227. <https://doi.org/10.1016/j.tmp.2016.09.006>
- 16) Mishra, A. A. (2014). Shopping Value, Satisfaction, and Behavioral Intentions: A Sociodemographic and Interproduct Category Study on Private Label Brands. *Journal of Global Marketing*, 27(4), 226–246. <https://doi.org/10.1080/08911762.2014.909553>
- 17) Raykov, T. (2012). An Introduction to Applied Multivariate Analysis. In *An Introduction to Applied Multivariate Analysis*. <https://doi.org/10.4324/9780203809532>
- 18) Sirgy, M. J., Lee, D.-J., & Yu, G. B. (2017). *Revisiting self-congruity theory in consumer behaviour: Making sense of the research so far* (In C. V. J). Routledge.
- 19) Solomon, M. R. (2011). *Consumer Behavior: Buying, Having, and Being* (Global Edi). Pearson Education Inc. Prentice Hall.

## “Empirical Study of Temple Visitors in Indonesia: Mediation Role of Brand Engagement on the Relationship between Destination Brand Self-Congruence and Behavioral Intention”

- 20) Sprott, D., Czellar, S., & Spangenberg, E. (2009). The importance of a general measure of brand engagement on market behavior: Development and validation of a scale. *Journal of Marketing Research*, 46(1), 92–104. <https://doi.org/10.1509/jmkr.46.1.92>
- 21) Suryaningsih, I. B., Nugraha, K. W. S., & Sukmalangga, A. Y. (2020). Reflection of Customer Experience and Destination Image of Tourist Trust through Satisfaction Mediation. *Hasanuddin Economics and Business Review*, 4(1), 1–6. <https://doi.org/10.26487/hebr.v4i1.2329>
- 22) Usakli, A., & Baloglu, S. (2011). Brand personality of tourist destinations: An application of self-congruity theory. *Tourism Management*, 32(1), 114–127. <https://doi.org/10.1016/j.tourman.2010.06.006>
- 23) Yu, C. P., Chang, W. C., & Ramanpong, J. (2019). Assessing visitors' memorable tourism experiences (MTEs) in forest recreation destination: A case study in Xitou Nature Education Area. *Forests*, 10(8), 1–15. <https://doi.org/10.3390/f10080636>
- 24) Zeithaml, Bitner, G. (2006). *Services Marketing: Integrating Customer Focus Across the Firm*. The McGraw-Hill Companies, Inc.
- 25) Zhang, H., Wu, Y., & Buhalis, D. (2017). A model of perceived image, memorable tourism experiences and revisit intention. *Journal of Destination Marketing & Management*, 8(June), 326–336. <https://doi.org/10.1016/j.jdmm.2017.06.004>



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## Implementation of Mastery Learning Method in Teaching Islamic Religious Education: The Case of State Senior High School 2 Sigi Regency, Indonesia



Bahdar Bahdar<sup>1</sup>, Juraid Juraid<sup>2</sup>, Ahmad Syahid<sup>3</sup>

<sup>1,3</sup> Faculty of Tarbiyah and Teacher Training, Universitas Islam Negeri Datokarama Palu

<sup>2</sup> Faculty of Teacher and Training Education, University of Tadulako

**ABSTRACT:** The aim of this study is to examine the implementation of mastery learning method in teaching Islamic religious education at a state senior high school in Sigi regency in Indonesia. This study used a qualitative method in which the data was gathered through field observation, in-depth interviews, and written document analysis. This study was conducted in a state senior high school in a regency in Indonesia. The focus of this study is the use of mastery learning methods in teaching the subject of Islamic religious education to the students of the school. Our findings show that the mastery learning method can increase the students achievement in the Islamic religious education subject. Teachers in the school implemented the method using classical approach which involved steps such as teaching preparation, teachers readiness, orientation, apperception, material presentation, and evaluation. Our study also shows that the students were well-motivated in studying the subject. The motivation was increased as the result of the freedom given to the students during learning process.

**KEYWORDS-** Mastery Learning, teaching, Islamic religious education, senior high school, Indonesia

### I. INTRODUCTION

Mastery learning is an individualized teaching method using a group-based approach. Meanwhile, according to Arifin (1984) mastery learning is the achievement of the minimum level of mastery set by each unit of study, both individually and in groups. What students learn can be fully mastered. At the implementation stage, the mastery learning method starts from orientation activities. At this stage, the teacher explains the learning objectives and the tasks to be carried out and develops the students' responsibilities.

The teacher explains the learning objectives and new concepts or skills accompanied by examples. Then the teacher explains the use of learning media, gives examples of problem-solving, and provides opportunities for students to do exercises to solve a problem with the guidance of the teachers and to do exercises independently. The purpose of independent practice is to strengthen the memory of the teaching materials that students have just learned. Mastery learning is teaching based on predetermined educational goals (Betts, Thai, & Gunderia, 2021). The students can learn well in the right teaching conditions and taking into account individual differences, evaluation is carried out continuously and based on the criteria for formative evaluation and summative evaluation (Sutejo, Nurdin, & Syahid, 2021). Teachers also use enrichment and improvement programs.

The improvement program is aimed at students who have not mastered the basic competencies of a subject. At the same time, the enrichment program is given to students who have mastered the given unit of study (Bernacki, Vosicka, & Utz, 2020). Thus it can be said that mastery learning is more effective in achieving all learning objectives than learning that does not adhere to mastery learning. The advantage of mastery learning lies in the level of achievement of learning objectives, the overall learning efficiency of students is higher in mastery learning than in learning that does not apply mastery learning (Syafi'i, Nurdin, & Fitriingsih, 2020).

Another characteristic of students who are slow to master the standard of learning competence is the same as students with higher abilities. The achievement of learning objectives is a matter of student achievement (Kyriakides, Christoforou, & Charalambous, 2013). Learning achievement is the result that has been achieved by students in the form of subject values. Learning achievement is the result of learning that results in changes in students (Qarareh, 2012). Learning achievement

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indicates students' ability to master learning materials that have been achieved in the form of learning outcomes. Thus learning achievement can be said to be an indication of one's success in learning. To achieve a learning achievement, students must participate in learning activities in order to gain knowledge, experience, and skills. From the sentence above, it is known that learning achievement is the result of student learning efforts that show the size of the skills achieved in the form of values.

Mastery learning provides appropriate time for students. Learners who are fast learners will progress more quickly in certain subjects. In comparison, slow learners will spend a longer time mastering the topic of the lesson. The mastery learning method focuses on achieving all learning objectives (Barsness, 2020). Students who do not master all of the competency of the subject matter presented by the teacher at each learning session are not allowed to participate in the subject matter that is a step above them unless they have completed the competency of the lesson that they have not mastered.

Although applying the mastery learning method can give good results in several lessons, there is still no research that examines the application of mastery learning in Islamic religious education learning. Therefore, this research will focus on assessing the application of the mastery learning method in Islamic religious education subjects. The aim is to contribute to the improvement of Islamic religious education learning outcomes in senior high schools where Islamic religious education lessons are limited.

### **II. LITERATURE REVIEW**

#### **A. Concept of Mastery learning**

Mastery learning is a student learning activity that has to be completed (Chun-Hung et al., 2013). The use of the word complete here has a specific meaning, which is aimed at students' mastery of all subject matter competencies given by the teacher. Thus mastery learning is understood as a learning activity that requires all students to master the material provided by the teacher in a complete matter. In other words, mastery learning is learning that requires all students to have minimum competence in each subject. Students must master the minimum competence of the subject matter that can be known for sure by determining four aspects of learning objectives, namely spiritual, social, knowledge, and skill aspects.

Benjamin S. Bloom divides learning objectives into three aspects, namely: aspects of knowledge, attitudes, and skills (Reeves, 1990). Bloom (1969) also divides the learning objectives into three parts during the implementation of mastery learning by using a benchmark in the form of a minimum value of subject competence. All students in a study group are required to master all the minimum values of subject competence as a condition to be able to move or continue to the next subject matter. The minimum value of the subject competence used as the standard is that which can describe the students' mastery of two-thirds of the subject matter competency. It is not justified to set a minimum competency standard of less than two-thirds. If it is less than two-thirds, it is ascertained that the student's mastery of the subject matter has not been seen significantly.

For this reason, the teacher must include a minimum value of three learning objectives with the same nominal value. For example, if the cognitive aspect is given a minimum score of seventy-five, then the attitude and skill aspects are also worth seventy-five. There is also an opinion that says the theory of mastery learning is a way of learning that is oriented to the mastery of students on a certain subject matter at a certain time that they receive in the school as a whole. It means that in mastery learning activities, the presentation of material by the teacher while teaching, "every material presented is required to be mastered by all students. The same mastery of the minimum competence of the subject matter is what Benjamin S. Bloom meant in the subject where each student has the same ability in each learning subject.

The difference between one student and another does not lie in ability but rather in the time spent learning. Some students quickly accept lessons, and there are also students who are slow to understand, listen and analyze lessons. The difference in the time that students receive this lesson by Benjamin S. Bloom (1969) is called the learning difficulties that exist in each individual. The types of learning difficulties that students must overcome by educators by means of solving through *1. Different media or materials. 2. Diagnosis to determine what missing prerequisite knowledge or skills that they must acquire to master the objective*".

The teacher must also carry out the steps of learning diagnosis. Thus, there are various difficulties experienced by students while studying that are able to overcome. Then the teacher's principle in mastery learning is that "all students in the same learning class have the same opportunity to master the minimum competence of the learning material presented by the teacher even though the duration of the time is different required by the students. It has been mentioned earlier that one of the principles of mastery learning is that the limit of students' mastery of subject competencies is expressed by an ideal minimum number (Wayne et al., 2006).



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By determining the minimum value of each subject matter competency, there is still a higher value above the predetermined value. For example, if the value of seventy-five is set as the minimum value, then the value of seventy-six to the value of one hundred is a higher value than the value of seventy-five. Therefore, there are also education experts (e.g. Guskey, 2007) who argue that mastery learning is an attempt by students to master the minimum competencies of subject matter that continues to increase. As a result of this view, in reality, some students experience learning difficulties that are not caused by the learning method and also not by the mistakes that exist in the students but by the errors that come from the environment where students learn. There are many aspects of the learning environment that can complicate the students' mastery of these subjects. The causes include the time students use in learning, such as types of learning media, quality of learning materials, unclear teacher orders, and inappropriate student learning outcomes assessment tools.

The complete way of mastery learning can be carried out anywhere, either in classical schools, tutorials, or in laboratories (Patterson, 1993). Mastery learning is also done without binding a person to a certain place. For this reason, the learning method must use multiple methods by prioritizing the mastery of minimum competencies of individual subject matter while paying attention to differences between individuals in a study group. Then the learning curriculum must be formulated clearly and measurably, followed by the use of appropriate learning media and assessment tools for student learning outcomes. The purpose of using this accountable learning evaluation tool is to facilitate teachers in assessing the work and learning outcomes of students.

### ***B. The principle of Mastery Learning***

The basic principles of mastery learning are used as a basis for implementing mastery learning in schools. According to Benjamin S. Bloom (1969), there are four principles of implementing mastery learning, that are:

- a. All students can learn if given the time in accordance with learning needs and utilized the time given to the maximum
- b. Each student learns according to their own method and style
- c. Recognition of individual differences
- d. Learning errors that are not corrected became the main source of learning difficulties.

All students can learn if the given time suits their learning needs, and these students can make maximum use of the time provided. Then each Learner can learn according to their own method and style. Furthermore, each individual or student has differences from one another. Finally, student learning errors that educators do not immediately correct are the main source of student learning difficulties. According to Benjamin S. Bloom, there are four important things that must be considered by teachers when designing and implementing classroom learning.

First, the presented material must pay attention to the time used and be in accordance with the weight of the lesson material. Second, in presenting the material, it is mandatory to use multiple methods according to the diversity of students participating in learning activities. The three teachers must be sure that there are differences among the students being taught. Fourth, every teacher who gives assignments to students must be given a value as a correction for the work of students.

If this is not done, it will reduce the students' trust in the teacher. Then students will also be less interested in participating in the learning activities delivered by the teacher concerned. Thus, the thing that the teacher must do when teaching mastery learning is how the teacher organizes the learning process, which leads to efforts to realize the ability of students to develop their creativity and interest in learning. A number of researchers also argue that the concept of mastery learning should be applied based on the characteristics of the students.

### **III. METHODOLOGY**

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.

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## IV. RESULTS AND DISCUSSION

### A. Implementation of Mastery learning

Based on an informant's explanation, teachers carry out their teaching duties, starting with compiling learning needs, implementing learning, and assessing student learning outcomes. Then the purpose of preparing learning materials is as a teaching guide. In the first week of learning activities, the teacher enters the class and distributes textbooks for Islamic religious education subjects, which is followed by making groups of students into several study groups. Next, the teacher shows additional reference books that can be read, then shares the topics of material that will be studied for one semester by the students. Then the teacher explains what to do with these topics before learning the materials given. That means that at the first learning meeting, the teacher has not presented the subject matter, but the teacher only provides learning preparation to students by showing the material and the ways in which the learning activities will take place. Furthermore, the teacher prepares a Learning Implementation Plan (RPP) document in which there are learning steps consisting of four stages of activity, namely introduction, presentation of learning materials, and closing. Then the learning plan continues at the stage of assessing student learning outcomes.

Based on the analysis of the data above, an understanding is drawn that the mastery learning steps implemented in schools consist of:

- a. Teacher preparation
- b. Student Preparation
- c. Implementation of Learning
- d. Assessment of student learning outcomes.

In mastery learning by Benjamin S. Bloom, the learning steps consist of:

- a. Orientation
- b. Presentation,
- c. Structured practice
- d. Guided practice
- e. Independence practice

Based on the data above, it is clear that there is a difference between mastery learning implemented in the school and the concept of mastery learning by Benjamin S. Bloom. For more clarity, the differences can be explained as follows:

First, in mastery learning by Benjamin S. Bloom (1969), the teacher immediately carries out their teaching duties without being required to develop learning tools. This is different from mastery learning implemented at the state senior high school 2 Sigi regency, where a teacher must first carry out several kinds of teaching preparations that are collected in the learning device before carrying out their teaching duties. An informant explained that teachers of Islamic religious education subjects must first prepare learning tools to be used as guidelines in carrying out their teaching duties.

Second, in mastery learning implemented at the school all students studying in the same class must first make preparations. Students must first study the subject matter that will be presented by the teacher through group learning activities outside of study hours. This method is different from Benjamin S. Bloom's (1969) mastery learning practice. Students prepare for learning in conjunction with learning activities when they are with the teacher.

Third, in Benjamin S. Bloom's (1969) mastery learning, the teacher opens learning activities with orientation, introducing the subject or sub-subject to the students the studies in the current learning activities. The teacher explains the benefits of learning materials and tells the minimum value of the learning objectives. Meanwhile, in mastery learning implemented at the school the teacher opens learning activities with an introduction with four kinds of activities, namely:

- a. Orientation, such as the teacher opening learning activities with greetings, opening with prayers to start learning, checks the presence of students as a disciplined attitude and prepares students physically and psychologically to start learning activities.
- b. Apperception, namely the teacher relates the learning activity material to be presented with the previous experience of students, and asks questions that are related to the learning material to be presented.
- c. Motivation, the teacher provides an overview of the benefits of studying the lessons that will be presented in everyday life and explain the main objectives or sub-subjects of learning at the meeting that takes place.
- d. Provision of references, the teacher informs the scope of the subject matter that is going to be discussed at the meeting at that time, informs about core competencies, basic competencies, learning achievement indicators, and the minimum

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value of learning completeness at the meeting that takes place and explains the mechanism for implementing the learning experience in accordance with the steps of learning

### ***B. The role of the environment in learning***

Many education experts have said that a quiet environment, free from noise, is one that is indispensable in learning activities. For example, Muhamad Sain Hanafi said that a conducive learning environment is created from the attitude of the teacher given to students (Aratusa et al., 2022). What is meant by attitude here is the ability of teachers to interact with students through attitudes that include speech, behavior, and ways of thinking that can be used as examples by students. Meaningful words and gentle attitudes accompanied by smiles and greetings containing advice for students' future will make teachers more authoritative in students' eyes. This kind of approach can soothe the heart and touch the minds and hearts of students. As a result, students can be free from anxiety, despair, and other psychological pressures to fully devote their attention to understanding the subject matter (Herminingsih, Nurdin, & Saguni, 2022).

A student who feels safe and relaxed facing the subject matter would lead them to be serious in understanding what they are learning (Bagnall, Skipper, & Fox, 2020). This shows that in an effort to help students be serious in learning, the teacher is obliged to create a sense of security for students in every learning process. The success of the teacher instilling good things every time there is a meeting with students will create a smooth communication relationship between the two parties (Zaid, Pettalongi, & Nurdin, 2022).

The fluency of communication between teachers and students needs to be built earlier before it reaches students' mastery of the subject matter presented by the teacher. It won't be easy to achieve optimal learning objectives if the interaction between teachers and students is not smooth. According to Nurdin, Nurliana, & Mashuri (2022) that the limited communication between teachers and students is one of the reasons for the failure to achieve optimal learning objectives.

Lack of communication between teachers will have an impact on the lack of achievement of learning objectives. Teachers and students must try to expedite the course of learning by means of intensive communication. Imam Suwardi and Ririn Farnisa said that the teaching and learning process is an interactive activity between teachers and students, so communication between the two must be reciprocal in an educational situation to achieve learning goals. It means that the creation of a good relationship between teachers and students will facilitate reciprocal communication in a learning activity to achieve optimal learning objectives. Silverman, Hong, & Trepanier-Street (2010) add that the implementation of learning, there are main components: curriculum, teachers, students, and families. Everyone must take a role to achieve the learning objectives that have been determined.

### ***C. The Role of Confidence in Learning***

Self-confidence is a belief that arises in students who encourage them to achieve something they want (Tett & Maclachlan, 2007). Self-confidence arises due to external stimuli through sight and hearing that influence confidence in doing something as desired. According to this theory, the self-confidence that arises from each person, in this case, students, is due to influences that come from outside themselves through their experience, either seeing it directly or through hearing. This means that students' self-confidence arises as a response given to the events they experience. In other words, self-confidence is a person's attitude towards abilities in themselves by accepting what is formed and learned through a process of experience with the aim of their own happiness. Departing from this kind of thinking makes the growth of self-confidence in a person into an impulse caused by their experience or an event or incident, and it is believed that it will bring them happiness in the future. In line with this understanding. The materials presented are the basic capital of students' lives in dealing with all things in living their lives as a bridge to achieve success in life in the future. In addition to the above understanding, other opinions also say that self-confidence is the courage in oneself so that a person is able to do something they think is right.

Departing from the previous explanation, it can be seen that self-confidence does not just appear in a person, because there is a certain process in their personality so that the formation of self-confidence occurs. In this regard, the formation of a strong self-confidence occurs through four processes, namely; (1). The formation of a good personality is in accordance with the development process that gives birth to certain advantages. (2). A person's understanding of the advantages that they have gives birth to a strong belief that he can do everything by taking advantage of their strengths. (3). A person's understanding and positive reaction to their weaknesses so as not to cause low self-esteem or a sense of difficulty adjusting (4). Experience in living various aspects of life by using all the advantages that exist in them. Sagaf S. Pettalongi (2013) also said the same thing. "That education is a process to influence students to adapt as well as possible to their environment and thus will cause changes in themselves that allow them to function properly in people's lives. Learning is a task of directing the process so that the goals can be changed and are achieved as expected. The students are members of the community. In the community itself, various kinds

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of influences have grown, between good and bad mixed into one, some are contained in customs that are passed down from generation to generation, from the older generation to the younger generation, and some are contained in other social institutions.

Of course, when students grow up to become official members of the community, they will of course be met with various kinds of these influences. Because in this influence, there is a union between good and bad values, students must break it down by separating the two by holding back bad values and developing good values. Herein lies the importance of learning to provide students with theoretical and practical abilities so that when dealing with problems, they are really able to solve them well.

### V. CONCLUSION

Based on the data obtained and the results of the analysis carried out, the researcher can draw a conclusion that mastery learning is able to be implemented in classical learning activities based on an individual approach. The steps for mastery learning are applied through the stages of orientation, presentation of material, guided exercises, structured exercises, and independent exercises. Theory and practice can be carried out simultaneously, where the tasks of teachers and students are also being carried out together. The teacher can immediately correct the mistakes made by students while studying. Likewise, the teacher can directly assess the work of students who are correct. Students are directed to master the theory and practice simultaneously so that students will be able to give birth to new theories, evaluate, and teachers assess student learning outcomes.

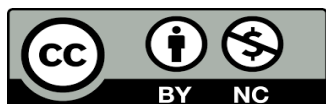
Mastery learning at the State Senior High School 2 Sigi regency is implemented in the form of classical learning based on an individual approach. The steps taken in learning include teacher preparation before teaching, orientation, apperception, presentation of material, carrying out evaluations, and assessing student learning outcomes. In learning, the teacher prioritizes theoretical explanations over the practice. The tasks of teachers and students are different, where the teacher shows students learning resources, both in the form of books and other media that have to do with the material to be studied. The teacher also distributes learning journals to all students and then informs the methods applied in learning. While students first study the subject matter that has been distributed by the teacher, fully control the course of learning, find their own problems, collect data, manage, and report the results. Students are also directed to master methodology and theory simultaneously so that students will be able to give birth to new theories.

### REFERENCES

- 1) Aratusa, Zana Chobita, Suriaman, Aminah, Darmawan, Darmawan, Marhum, Mochtar, Rofiqoh, Rofiqoh, & Nurdin, Nurdin. (2022). Students' Perceptions on the Use of Mobile-Assisted Language Learning (MALL) in Learning Pronunciation. *International Journal of Current Science Research and Review*, 5(7), 2652-2660.
- 2) Arlin, Marshall. (1984). Time, Equality, and Mastery Learning. *Review of Educational Research*, 54(1), 65-86. doi:10.3102/00346543054001065
- 3) Bagnall, Charlotte Louise, Skipper, Yvonne, & Fox, Claire Louise. (2020). 'You're in this world now': Students', teachers', and parents' experiences of school transition and how they feel it can be improved. *British Journal of Educational Psychology*, 90(1), 206-226. doi:<https://doi.org/10.1111/bjep.12273>
- 4) Barsness, Katherine A. (2020). Achieving expert performance through simulation-based education and application of mastery learning principles. *Seminars in Pediatric Surgery*, 29(2), 150904. doi:<https://doi.org/10.1016/j.sempedsurg.2020.150904>
- 5) Bernacki, Matthew L., Vosicka, Lucie, & Utz, Jenifer C. (2020). Can a brief, digital skill training intervention help undergraduates "learn to learn" and improve their STEM achievement? *Journal of Educational Psychology*, 112, 765-781. doi:10.1037/edu0000405
- 6) Betts, Anastasia, Thai, Khanh-Phuong, & Gunderia, Sunil. (2021, 2021//). *Personalized Mastery Learning Ecosystems: Using Bloom's Four Objects of Change to Drive Learning in Adaptive Instructional Systems*. Paper presented at the Adaptive Instructional Systems. Design and Evaluation, Cham.
- 7) Bloom, Benjamin S. (1969). Some Theoretical Issues Relating to Educational Evaluation. *Teachers College Record*, 70(10), 26-50. doi:10.1177/016146816907001003
- 8) Chun-Hung, Lin, Eric Zhi-Feng, Liu, Yu-Liang, Chen, Pey-Yan, Liou, Maiga, Chang, Cheng-Hong, Wu, & Shyan-Ming, Yuan. (2013). Game-Based Remedial Instruction in Mastery Learning for Upper-Primary School Students. *Journal of Educational Technology & Society*, 16(2), 271-281.

## Implementation of Mastery Learning Method in Teaching Islamic Religious Education: The Case of State Senior High School 2 Sigi Regency, Indonesia

- 9) Guskey, Thomas R. (2007). Closing Achievement Gaps: Revisiting Benjamin S. Bloom's "Learning for Mastery". *Journal of Advanced Academics*, 19(1), 8-31. doi:10.4219/jaa-2007-704
- 10) Herminingsih, Herminingsih, Nurdin, Nurdin, & Saguni, Fatimah. (2022). *Pengaruh Youtube Sebagai Media Pembelajaran Dalam Perkembangan Kognitif, Afektif Dan Psikomotor Siswa*. Paper presented at the Kajian Islam Dan Integrasi Ilmu Di Era Society (KIIIES) 5.0, Palu.
- 11) Kyriakides, Leonidas, Christoforou, Christiana, & Charalambous, Charalambos Y. (2013). What matters for student learning outcomes: A meta-analysis of studies exploring factors of effective teaching. *Teaching and Teacher Education*, 36, 143-152. doi:<https://doi.org/10.1016/j.tate.2013.07.010>
- 12) Nurdin, Nurdin, Nurliana, Nurliana, & Mashuri, Saepudin. (2022). Online Islamic Religious Education Learning During Covid-19 Pandemic *International Journal of Contemporary Islamic Education*, 4(1), 38-53.
- 13) Nurdin, Nurdin, & Pettalongi, Sagaf S. (2022). Menggunakan Paradigma Studi Kasus Kualitatif Interpretatif Online dan Offline Untuk Memahami Efektivitas Penerapan E-Procurement. *Coopetition: Jurnal Ilmiah Manajemen*, 13(2), 155-168.
- 14) Nurdin, Nurdin, Stockdale, Rosemary, & Scheepers, Helana. (2016). Influence of Organizational Factors in the Sustainability of E-Government: A Case Study of Local E-Government in Indonesia. In Inderjeet Singh Sodhi (Ed.), *Trends, Prospects, and Challenges in Asian E-Governance* (pp. 281-323). Hershey, PA, USA: IGI Global.
- 15) Patterson, William. (1993). Moving Toward Mastery Learning: One School's Approach. *NASSP Bulletin*, 77(554), 96-99. doi:10.1177/019263659307755418
- 16) Pettalongi, Sagaf S. (2013). ISLAM DAN PENDIDIKAN HUMANIS DALAM RESOLUSI KONFLIK SOSIAL. *Cakrawala Pendidikan*, 32(2).
- 17) Qarareh, Ahmed O. (2012). The Effect of Using the Learning Cycle Method in Teaching Science on the Educational Achievement of the Sixth Graders. *International Journal of Educational Sciences*, 4(2), 123-132. doi:10.1080/09751122.2012.11890035
- 18) Reeves, M. Francis. (1990). An application of Bloom's taxonomy to the teaching of business ethics. *Journal of Business Ethics*, 9(7), 609-616. doi:10.1007/BF00383217
- 19) Silverman, Katie, Hong, Seong, & Trepanier-Street, Mary. (2010). Collaboration of Teacher Education and Child Disability Health Care: Transdisciplinary Approach to Inclusive Practice for Early Childhood Pre-Service Teachers. *Early Childhood Education Journal*, 37(6), 461-468. doi:10.1007/s10643-010-0373-5
- 20) Sutejo, Edi, Nurdin, Nudin, & Syahid, Ahmad. (2021). The Implementation of Islamic Education in Building Preprimary Disabled Students Character *International Journal of Contemporary Islamic Education*, 3(2), 41-58.
- 21) Syafi'i, Moh, Nurdin, Nurdin, & Fitriningsih, Fitriningsih. (2020). THE EFFECTIVENESS OF KNOW-WANTLEARNED (KWL) STRATEGY IN IMPROVING READING COMPREHENSION OF THE EIGHT GRADE STUDENTS OF SMP NEGERI 14 PALU. *Datokarama English Education Journal*, 1(1), 53-59.
- 22) Tett, Lyn, & Maclachlan, Kathy. (2007). Adult literacy and numeracy, social capital, learner identities and self-confidence. *Studies in the Education of Adults*, 39(2), 150-167. doi:10.1080/02660830.2007.11661546
- 23) Wayne, Diane B., Butter, John, Siddall, Viva J., Fudala, Monica J., Wade, Leonard D., Feinglass, Joe, & McGaghie, William C. (2006). Mastery Learning of Advanced Cardiac Life Support Skills by Internal Medicine Residents Using Simulation Technology and Deliberate Practice. *Journal of General Internal Medicine*, 21(3), 251-256. doi:<https://doi.org/10.1111/j.1525-1497.2006.00341.x>
- 24) Zaid, Zaid, Pettalongi, Sagaf S, & Nurdin, Nurdin. (2022). Implementation of School-Based Management in Improving the Quality of State Islamic Junior High School. *International Journal of Social Science and Human Research*, 5(8), 3448-3455.



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## The Cross-Border Health Services Market in EU



Maria do Rosário Anjos<sup>1</sup>, Joaquim da Veiga Cepeda<sup>2</sup>

<sup>1</sup>Associate Professor - Lusófona University, Porto, Portugal

Researcher on Portucalense Institute of Legal Researcher and CEAD Francisco Suárez

<sup>2</sup>Master in Law - Lusófona University, Porto, Portugal

**ABSTRACT:** Access to cross-border healthcare in the European Union (EU) is promoted by Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011. The aim is to promote patient mobility and the possibility of access to new treatment opportunities and an EU-wide health service. The focus of this paper is the analysis of the Directive, its scope and its consequences in Portugal. The concept of cross-border healthcare provision means the possibility for an EU citizen to have access to healthcare in another Member State, bordering the state of his nationality. The directive imposes rules for patients' access to cross-border healthcare. The idea is to ensure freedom of choice and access to high-quality cross-border healthcare in the EU, and to do so by ensuring patient mobility. As stated by the Court of Justice of the European Union (CJEU), the main objective is to promote cooperation on healthcare between member states, while respecting all national competences on the organization and delivery of healthcare. In this paper we analyze the assumptions of access to cross-border healthcare, from transparent information to the removal of administrative obstacles and treatment costs in host countries. We also analyze the terms of the transposition of the Directive into Portuguese law, and in particular the introduction of the mechanism of subordination to prior authorization.

The methodology adopted is based on a theoretical framework that includes the study of legislation, jurisprudence and reports from the European institutions. We also try to access some data on cross-border health care in times of pandemic from COVID 19. The results show some inconsistencies in the transposition of the Directive in Portugal and also regulatory flaws. The possibility of "reverse discrimination" between Portuguese and nationals of other member states is one example. Safeguarding the quality of this type of healthcare requires a more assertive intervention by EU health regulators.

**KEYWORDS:** Competition; Cross-border health services; EU health services market; Reverse discrimination; Services of general interest

### 1. INTRODUCTION

The Directive 2011/24/EU, of the European Parliament and of the Council, of 9 March 2011 (from now referred only as Directive) sets the rights of European Union citizens to cross-border healthcare, and guarantee freedom of choice and access to high-quality healthcare in the European Union (EU). The Directive applies to the provision of cross-border healthcare from a Member State (MS) to another (ERS: Report 2017).

This Directive covers a wide range of healthcare broadly, public or not, but excludes the provision of continued care, organ transplantation and public vaccination. Its aim is to ensure patient mobility in accordance with the principles established by Treaty on Functioning of the European Union (TFEU) and the Universal Declaration of Human Rights (UDHR), which in Article 25 (1) recognises the right to health, medical care and safety in the disease. Similarly, the Convention on Human Rights and Biomedicine also protects human beings in their dignity and identity, promoting their well-being. The Charter of Fundamental Rights of the European Union, in article 35<sup>o</sup>, also presents access to health as an fundamental right.

The TFEU, in articles 4, 6 and 168, confers jurisdiction on the European Union to legislate on public health. The aim is to safeguard the security of the Member States by outlining a common strategy in the fight against the disease. To pursue this objective, it is up to the EU to adopt health information and education measures and to monitor threats and risks to public health.

The Directive was born in 2011 in this legal framework, so we can say that since then the EU has a legal mechanism that guarantees to european patients, in and from any member State, the access to quality healthcare in safe conditions, and their mobility in the EU. To this end, some social and health benefits have been established which the MS should guarantee on an equal way to all

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European citizens. Nevertheless, the national competences of each MS in the definition and organisation of their health services are safeguarded. Despite its good intentions, over the years this Directive has not had the expected effect. The economic crisis, between 2008 and 2013, has put in first plan other priorities, and health, despite being a service of general interest, has been neglected.

The Directive enforces the idea of solidarity and efficiency in the management of health services among MS, which is very important, in particular, to fight against specific diseases as pandemic situations. However, we have observed daily disorientation and lack of coordination between Member States in the fight against the COVID 19 crisis, especially in the first and second waves of the pandemic.

We believe that if MS had given greater importance to the implementation and improvement of the principles contained in the Directive, the means to face the current crisis could be better more efficient and integrated, in order to do a better support to MS with more difficulties.

### 1.1 The Investigation Goals

The aim of this work is to present the results of the investigation about the application of the Directive in the field, all over the last eight years. This study was developed within the scope of the research for the Master Thesis in law, realized by the Author Joaquim Cepeda with the scientific orientation of the Author Maria do Rosário Anjos. After the conclusion of the Master degree, it seems quite important to share with the scientific community some of the results and conclusions of the work. The impact of the Directive corresponds only to one chapter of the master's thesis, but the situation motivated by COVID 19 pandemic crisis highlighted the importance of this issue.

In this work paper we abord the legal framework contained in the Directive and present some data, collected in order to show the real impact of the Directive in the last years and answer to the question about the (ir)relevance of this Directive in the field of healthcare services in the EU. This issue is indeed very important at a particularly critical time due to the global pandemic crisis that has paralyzed the world.

### 1.2 Methodology

Considering the theme and the rules of investigation on issues of law we did develop a theoretical study of the legal framework of the Directive. We have also used other sources such as documents, reports, recommendations and other documents from European institutions, including the Court of Justice of the European Union (CJEU) and the National Regulatory Authorities, and some doctrinal references. About the state of art, it is important to note that there are still no specific research papers on this issue. The research carried out focused primarily on the collection of some data on the levels of implementation of the Directive, in order to conclude about the degree of impact of the Directive in the EU. Finally, we considered the importance of its implementation in times of COVID 19 pandemic.

## 2. THE CROSS-BORDER HEALTHCARE DIRECTIVE

The healthcare provided for in the Directive covers health services provided by health professionals, including the prescription, dispensing and supply of medicines and medical devices. The concept of providing cross-border healthcare means the possibility for an EU citizen to have access to healthcare in another Member State, bordering the State of his nationality. The aim is to promote patient mobility and the possibility of access to new treatment opportunities and an EU-wide health service. However, Member States may prohibit their nationals from accessing healthcare in another member when the "public interest" impose it. For example, in case of danger to public health due to infectious diseases (paragraphs 11 and 12 of the Directive). The Directive also allows the exclusion from its application when the expenditure associated with medical treatment is of very high value, putting in danger the financial sustainability of the national health system. Actually this is "an open road" to the MS do what they want.

### 2.1 The analysis of the Directive

A study by the European Commission (EC. 2014: Final Report) carried out with users and funding entities concluded that the main motivations for seeking cross-border care under the Directive are healthcare costs and waiting times in the patient's nationality country. The user's degree of confidence in the national health system is important, but it is not the main decision factor. According to this report, for the informed decision of the user, it is essential that information on prices and waiting times is made available, ideally online, and the information must be transparent about each member State providers in order to gradually the users get confidence in the all health systems of all EU member states.

Another study by the European Commission (EC. 2015: Final Report) published in September 2015, which involved a number of stakeholders (user groups, supervisory bodies, healthcare provider organisations and existing national contact points in each MS), has conclude that the Directive could have more benefit if the MS increased information to users. The results show that citizens

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are not informed about the new treatment opportunities that the Directive recognises to them, neither about the existence of national information points.<sup>1</sup> In Portugal case these information points exist but it was found that they received a low number of requests for information and reimbursement requests, which may have occurred due to lack of knowledge of the citizens.

According to the same report, users interviewed in different Member States declare that the main reasons for the lack of cross-border care relate to administrative matters, in particular those relating to applications for prior authorisation denied or waiting for a decision for a long time. The interviewees also considered that the information available on most contact point *websites* does not provide sufficient detail. On the other hand, respondents revealed that the quality of healthcare is not a relevant factor for the decision to seek cross-border care (ERS. 2014. Annual Report: 6-7). In general, the users consider their healthcare services good, but sometimes are not fast enough or are not the best to care of some specific diseases.

A third European Commission study, published in 2015, presents the results of a survey conducted in the 28 EU MS countries on the demand for cross-border healthcare. This report concludes that only 5% of Europeans received medical treatment in another EU country (in Portugal the percentage was 7%) in the 12 months preceding the interview (held in October 2014).<sup>2</sup>

The majority of respondents indicated that the main reason for seeking health care in another country was the existence of care unavailable in their home country and care with a higher level of quality. Of those interviewed, 55% indicated satisfaction with the care provided in their home country as the main reason for not wanting to receive treatment abroad.

As for the degree of knowledge of citizens about the use of cross-border care, the majority of EU citizens know that they are entitled to reimbursement for treatments carried out in another EU country, although in Portugal this percentage has fallen to 41% between 2012-2014. Only 10% of EU citizens had heard talk about the existence of the national information contact point, but this time the percentage in Portugal rose to 13% between 2012-2014 (ERS.2014:7-8).

This Commission report about implementation of Directive 2011/24/EU, conclude that the exercise of patients' rights in cross-border healthcare had not a big success because some member States had not implemented the Directive in national legal framework in time. Because of that the patient mobility in scheduled healthcare remained low. Associated with the delay in transposing the Directive, European Commission considered that the lack of users knowledge, the lack of national information and the obstacles posed to users by local authorities are the reasons for the very low level of Directive impact in the field.

Among the obstacles are the situations requiring prior authorization, the lack of clarity regarding treatments requiring prior authorization, reimbursement for lower amounts than those used in the MS of origin and excessive administrative requirements (ERS. 2015:7-8).

In October 2016, a study by the European Commission found that in most of the 23 MS who participated in that study, requests for prior authorisation and claims for reimbursement were minute. (ERS. 2016: 8).

In September 2018, a new Commission report considers that cross-border mobility in the EU had a slight growth and the Directive had contributed to improving some legal certainty and clarity about rights and benefits of cross-border patients. It adds that cross-border patient flows are driven by geographical or cultural proximity and that patient mobility in the EU remains relatively low.

Finally, a January 2019 report, from European Parliament, about the implementation of the Directive, lists a number of relevant conclusions on the impact of the Directive on the EU, recalling that the health sector is a vital component of the EU economy, which amounts to 10 % of its GDP, and this figure could increase to 12.6 % by 2060 due to socio-economic factors (European Parliament report. 2019)

According to this report the main reasons for the low adherence of users to cross-border health services are: a) the reduced patient mobility; b) the delay of many MS in transposing the Directive; c) the lack of public awareness of their rights to reimburse expenditure; d) the several difficulties imposed by some MS to cross-border healthcare, such as administrative costs and prior authorizations; e) the lack of information given to the patients seeking cross-border healthcare and when exists some information it is incomplete or confused.

This Parliament report enforce the idea that EU Health systems, at an accessible price for all people, are crucial to ensuring public health, social cohesion and social justice, preserving and guaranteeing the right of universal access to healthcare. This is the «*leit motiv*» for §2, 106 article of TFEU, for preserve the protection of accessibility, quality and universality of services of general interest (Anjos. 2016: 214-2121).

The same report also mentions that the patients quality of life is an important component of the assessment of costs/benefits in the health sector. The report considers that healthcare can sometimes be better provided in another MS, due to proximity, ease

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<sup>1</sup> In Portugal, the national contact point provides information on the Directive on the following website: <http://diretiva.min-saude.pt/direitos/>

<sup>2</sup> European Commission - *Special Eurobarometer 425: Patients' rights in cross-border healthcare in the European Union*. May 2015. Available from: [https://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs\\_425\\_sum\\_en.pdf](https://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_425_sum_en.pdf)



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of access, specialised nature of care or lack of capacity, for example the lack of essential medicines, in the home Member State. In fact, this point of view is mentioned by some authors, reinforcing that this is a way to improve the quality and universality of the service and also its better management, and may result in some non-savings for member states by the synergy resulting from a common and more integrated management. (Mendes & André. 2017:34-37; Marques, 2015: 4-7)

The importance of EU cooperation is highlighted in ensuring efficient sharing of knowledge and resources in the fight against rare and chronic diseases. The report finds that Member State have not fully or correctly implemented the Directive, so citizens continue to struggle to know how they can benefit from the rights set out in the Directive. Greater clarity and transparency about the working conditions of healthcare providers is needed to ensure greater patient mobility. The right to information is crucial, but the Directive goes further and imposes a duty to inform. Local health professionals should clarify the user about the possibility to use the health service in any other Member State, in order to give the best support in health services to the citizen. (Anjos&Cepeda.2018:2-4).

In short, the European Parliament has declared the Member State's duty to ensure access to health care and to ensure that the costs associated with it are reimbursed. But it should be noted that in several Member States there are significant bureaucratic obstacles and it should be remembered that the Directive aims to ensure a high level of public health protection while respecting the principle of free movement of persons in the internal market.

### 2.2 Transposing the Directive into the Portuguese legal system

The Directive presented an ambitious schedule, establishing that Member States should put it into effect by October 25, 2013, but this was not the case. The transposition of the Directive into the Portuguese legal system occurred with Law No. 52/2014 of August 25, which defined the rules for access to cross-border healthcare, establishing the rules for access to cross-border healthcare. It excludes from the scope of the law integrated long-term care and the donation or harvesting of organs for therapeutic or transplant purposes. Article 4(1) provides that cross-border healthcare shall be provided in accordance with the principles of universality, access to good quality care, equity and solidarity, and states in paragraph 2 that such care shall be provided while respecting the patient's right to privacy. Article 6 imposes a duty to provide information in the relationship with the patient, including the right to use another Member State to obtain the healthcare allowed.

As for the right to reimbursement of expenses directly related to cross-border healthcare provided in another member state, we have expenses subject to a system of prior authorization by a general practitioner of national or regional health services, which determines the need for healthcare (article 11, Law 52/2014). Here, there is the possibility of "**reverse discrimination**", i.e. discrimination against nationals who internally see their freedom of choice limited to certain providers. On the contrary, a citizen of another Member State will be able to choose access to any provider, public or non-public.

### 2.3. Reverse Discrimination

The transposition of the Directive into Portuguese law has led to a situation of "reverse discrimination", which means that it is possible that Portuguese citizens may have worse conditions of access to health services than nationals of other Member States. In other words, in some situations it is possible that health care for Portuguese citizens may be more expensive than for nationals of other Member States.

Reverse discrimination arises when a European citizen cannot be a beneficiary of certain provisions guaranteed by EU law in his country of origin, but a citizen of another Member State, in the same situation, can do so. In this case, we can say that the treatment is more beneficial for migrant citizens of EU Member States than for nationals (Duarte,2015:11-12).

The point is that when a national needs access to hospital health care, everything depends on the decision of the doctor who examines, decides and guides the patient. Thus, the patient does not benefit from the freedom of choice, which is imposed by the geographical dictates and administrative organization of the national health system. On the contrary, the patient from another member state, who needs health care and decides to seek such services in another member state, is not subject to the need to resort to referral from the health center, with the added advantage of being able to be assisted in any hospital unit in any member state of his choice.

## 3. THE ANALYSIS OF THE HEALTH REGULATORY AUTHORITY OF PORTUGAL

The Portuguese Health Regulatory Authority, in a 2012 study, analyzed the potential economic and financial impact of increased cross-border care following the Directive, predicting that 32,000 users of the Portuguese healthcare system would not have their healthcare needs met and that 10% of users (3,200 users), would be willing to seek healthcare abroad. In 2017, it considered that the reduction in demand for cross-border healthcare by Portuguese users resulted from the following reasons:

- users may not be aware of the existence of the Directive;
- users may not have enough information to make the decision to seek care abroad;

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- the national health service provided on Portuguese territory reasonably satisfies the needs of its users;
- payment in advance for health care and costs associated with travel and residence in another member state are not covered.

The study points out that the difficulty of making claims against medical errors or negligence and the possibility of these being rejected with the consequent need for costly legal action may discourage seeking cross-border healthcare.

The same study shows that users fear the costs associated with prospecting (search costs) to find the right provider and the costs of lack of knowledge of another country's health system. (switching costs). (ERS. 2017:Annual Report).

The Portuguese Health Regulatory Authority revealed that 80% of Portuguese users do not intend to use cross-border health care and the level of knowledge about cross-border care is very low. The causes of low demand for cross-border care include lack of information about using such care, difficulty in understanding the procedures, and financial constraints. The costs of traveling abroad that are not reimbursed. Thus, this study concludes that the impact of the Directive in Portugal has been low so far.

### 4. PRIOR AUTHORIZATION AS A LIMIT TO THE PRINCIPLE OF FREE MOVEMENT

The Directive allows Member States to establish a prior authorization mechanism. The Portuguese State has made use of this prerogative by transposing the Directive into our domestic law No. 52/2014 of August 25, imposing on national citizens the requirement of prior authorization to be able to access cross-border healthcare.

Law No. 52/2014, in article 14, establishes the prior authorization process, stating in paragraph 1 that "the prior authorization request and the respective clinical evaluation report are sent by the hospital unit that issued the report to the Central Administration of Health Systems, I.P. (ACSS, I.P.), or to the competent services of the autonomous regions, for appreciation".

The same article 14, paragraph 3, states that the request for prior authorization must be rejected in the following cases:

"if the clinical evaluation indicates with reasonable certainty that the patient is exposed to a safety risk that cannot be considered acceptable taking into account the potential benefit to the patient of the cross-border healthcare sought;

if there is a reasonable degree of certainty to conclude that the population is exposed to a significant safety risk as a result of the cross-border healthcare sought

if the healthcare in question is provided by a healthcare provider where there are serious and specific concerns about compliance with standards and guidelines on quality of healthcare and patient safety

if the healthcare in question can be provided in Portugal within a reasonable and medically justifiable time limit, taking into account the patient's state of health and the probable course of the illness".

Thus, there are several situations where the patient or the general population may be denied access to cross-border healthcare for safety reasons. Subordination to prior authorization requirements may constitute an undue limitation on the free movement of citizens, a violation of the Treaty (TFEU), which in Article 20 (1) establishes a true European citizenship, adding in paragraph 2(a) that citizens of the European Union have the "right to move and reside freely within the territory of the Member States".

This legal provision is reiterated in §1 of Article 21 TFEU which stipulates that "every citizen of the Union shall have the right to move and reside freely within the territory of the Member States, subject to the limitations and conditions laid down in the Treaties and to the measures adopted to give them effect."

Portuguese law provides for reimbursement in exceptional cases, whenever the Portuguese national health system does not have a treatment solution available for the patient. This condition is, by its very nature, likely to severely limit the chances of obtaining prior authorization. It should be noted, however, that this restriction is not justified on budgetary grounds, such as the alleged serious threat to the financial balance of the social security system. This motivation has already been invoked by the Portuguese State in its defense, but the European Commission has warned that this argument is not acceptable.

The European Court of Justice also considers that prior authorization cannot be denied on the grounds of risk to the financial balance of the Portuguese social security system. Except in urgent and exceptional cases, travel takes place mainly in border regions or for treatment of specific diseases, so this argument is not justified (CJEU; Khol; EU:C-158/96). This position of the court is old, long before the directive under review.

#### 4.1 Results of research into the implementation of the Directive

The data collected and the analysis of the European Commission's Final Report on the implementation of the 4/9/2015 Directive on Cross-Border Healthcare show:

- Until July 1<sup>st</sup> 2015, only four infringement proceedings have been open by European Commission because of violation in the transposition of the Directive;
- The system of prior authorisation for healthcare has been an impediment to the effective exercise of citizens' rights;
- In fourteen Member States, the patients are unaware of which treatments are subject to prior authorisation;
- Only seven Member States do not use the «*prior authorisation*» system;

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- e. Some Member States with prior authorisation systems had not received any applications for authorisation between 2012 and 2017;
- f. Twenty-six Member States provided data on patient flow in 2014;
- g. Of the twenty-one Member States that introduced a prior authorisation scheme only seventeen provided data on the number of applications for prior authorisation;
- h. In these seventeen Member States there were five hundred and sixty applications for authorisation, of which three hundred and sixty were granted;
- i. Two of these seventeen Member States did not refuse or grant a single application;
- j. Two of these seventeen Member States approved only one application each;
- k. Of this universe of seventeen Member States, only in two of them more than 100 applications have been submitted.

### 4.2. The European Commission's Final Report 2018

This report on the implementation of the Directive provides an overview of the data received between 2015, 2016 and 2017, and states that:

- a. Six Member States do not have any prior authorisation system and, therefore, they give patients freedom of choice;
- b. The system of prior authorisation should be limited to what is necessary and proportional and cannot constitute a mean of arbitrary discrimination or an unjustified obstacle to the free movement of patients;
- c. In 2015 data was received from twenty-three Member States, in 2016 from twenty-eight Member States and in 2017 data was received from twenty-six Member States;
- d. Aggregated data on applications for prior authorization in 2015, 2016 and 2017 show that this number remains low;
- e. However, there was a steady increase and in 2017 more than twice as many applications for prior authorisation as in 2015;
- f. In 2015, Member States issued around fifty-five thousand planned treatment authorizations abroad;
- g. Among the three years under review, the number of claims for reimbursement was relatively low.
- h. France has the highest number of patients seeking healthcare abroad;
- i. Spain, Portugal and Belgium are the three countries most sought by French citizens to receive healthcare;
- a. There are a very frequent patients mobility from Denmark to Germany, mostly for dental treatments;
- b. Patients from Poland usually seek healthcare in Czech Republic;
- c. Finally, the case of patients from Norway seeking medical care in Spain still deserves reference (the reason of that demand is mostly associated to climate conditions for recovered from some diseases).

#### In the end, the report conclude that:

1<sup>st</sup>: Patient mobility is mainly based between neighboring countries, which shows that people generally prefer to receive healthcare close to home.

2<sup>nd</sup>: About half of patient mobility corresponds to movements of patients from France to neighboring countries, and the other half of this flow consists of a small number of patients traveling across the EU to receive healthcare in neighboring countries.

This evidences suggests that many patients wish to return to their birth country for healthcare. Also indicates that many patients on mobility only seek specialist skills not available in their country of origin.

### 4.3. Directive impact in times of COVID 19 Pandemic in EU

Finally, the impact of this Directive in times of Pandemic COVID 19 must be analyzed.

In this moment we have no precise statistics to refer. But we can say that it was the first time in the EU that we saw real solidarity between border countries, using all the means at their disposal to take care of COVID patients. We can mention the help from Germany to France, with a significant number of users being transferred from France to Germany. But the most important cases of aid were mainly aid to Italy and Spain provided by several countries, especially Germany.

This research should continue to study statistics when they are available after the pandemic. Only then will we be able to assess the real impact of this directive. In any case, we have no doubt in stating right now that the Directive was fundamental to face the pandemic of COVID 19 at the most critical moments in many EU member states.

## 5. CONCLUSIONS

The Directive underlines the European Union's concern to strengthen the possibilities of access to cross-border healthcare for all, in order to promote mobility and freedom of choice for European citizens.

Close cooperation between Member States is essential, particularly in terms of reimbursement of healthcare costs incurred as a result of healthcare provided in another Member State.

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Unless there are compelling reasons, Member States should not put obstacles in the way of the right of patients to seek medical treatment in another Member State.

This also contributes to reducing the so-called 'waiting lists', which in some Member States are significant, particularly in Portugal. Cross-border mobility within the EU shows a slight upward trend over the years analyzed, but does not appear to be very significant.

Cross-border patient flows show a stable pattern, being mainly motivated by geographical or cultural proximity.

The figures from the reports we analyzed show that many mobile patients wish to return to their home country for care and only seek another MS for specialized skills not available in their home country.

Overall, patient mobility and the financial dimension of this mobility in the EU remain low and the Directive has not had a significant budgetary impact on the sustainability of health systems or the wellbeing of patients.

Safeguarding the quality of this type of healthcare in the EU requires a more assertive intervention by EU health regulators to increase the effective impact of the Directive.

This research shows, even without statistics available at this time, that the impact of this Directive has been and continues to be very important in tackling the pandemic of COVID 19 at the most critical moments in many EU Member States.

## REFERENCES

- 1) Anjos, M. R. (2016). *Serviços de Interesse Económico Geral, Concorrência e Garantias dos Cidadãos Usurários - Um Estudo à Luz do Direito Comunitário*. Maia: Edições ISMAI
- 2) Anjos, M. R. & Cepeda, J. V. (2019). *O Direito ao Consentimento Informado das Pessoas Incapazes com Discernimento*. In: R. M. Gonçalves & F. S. Veiga (Diretores), P. Brito (Coord.), *Estudios de Derecho Iberoamericano*. Vol. III. Universidade Lusófona do Porto / IBEROJUR- Instituto Iberoamericano de Estudos Jurídicos. Porto. Ed. Lusófonas
- 3) Duarte, B. C. G. F. (2015). *O Problema da Discriminação Inversa e das Situações Puramente Internas no Direito da União*. Tese de Mestrado em Direito Público. Escola de Direito da Universidade Católica Portuguesa, Centro Regional do Porto. Porto: UCP,CRP. Available: <https://repositorio.ucp.pt/bitstream/10400.14/20454/1/FINAL%20PDF%20Tese%20Benedita%20Duarte.pdf>
- 4) Marques, N. C. (2015). *Regulação e Concorrência na Saúde*. Conferência proferida na I Jornada da Saúde do Hospital do Santo Espírito da Ilha Terceira, em representação da Entidade Reguladora da Saúde, 6 de junho. Porto: ERS. Available: <https://www.hseit.pt/sites/default/files/eventos/IJornadaSaudeHSEIT/Regula%C3%A7%C3%A3o%20Concorr%C3%Aancia%20na%20Sa%C3%BAde.pdf>
- 5) Mendes, A. M. & André, F. (2017). *O setor da Saúde, Organização, Concorrência e Regulação*. Conselho Estratégico Nacional da Saúde da CIP, Confederação Empresarial de Portugal. Lisboa: Caleidoscópio.

## Online Sources:

- 1) Court of Justice of European Union (1997). *Joined Processes C-64/96 e C-65/96, Acórdão de 5 de junho*. Acórdão Uecker e Jacquet, da 3.ª Secção do TJCE. (Land Nordrhein-Westfalen vs. Kari Uecker e Vera Jacquet vs. Land Nordrhein-Westfalen). Available : <http://curia.europa.eu/juris/liste.jsf?num=C-64/96&language=pt>.
- 2) Court of Justice of European Union. (2011). *Processo C-255/09, Acórdão de 27 de outubro*. Available: <http://curia.europa.eu/juris/liste.jsf?language=pt&num=C-255/09>
- 3) Entidade Reguladora da Saúde (2017) *Análise do Impacto da Diretiva dos Cuidados de Saúde Transfronteiriços*: Porto, p. 3. Available: [https://www.ers.pt/uploads/writer\\_file/document/2048/ERS\\_-\\_Estudo\\_Impacto\\_Diretiva\\_CST.pdf](https://www.ers.pt/uploads/writer_file/document/2048/ERS_-_Estudo_Impacto_Diretiva_CST.pdf)
- 4) Entidade Reguladora da Saúde - *Análise do impacto da Diretiva 2011/24/UE do Parlamento Europeu e do Conselho, de 9 de março de 2011, relativa ao exercício dos direitos dos doentes em matéria de cuidados de saúde transfronteiriços*. (2011). Available : [https://www.ers.pt/uploads/writer\\_file/document/37/Diretiva\\_Transfronteirica\\_11.pdf](https://www.ers.pt/uploads/writer_file/document/37/Diretiva_Transfronteirica_11.pdf)
- 5) Entidade Reguladora da Saúde. (2011). *Análise do impacto da Diretiva 2011/24/UE do Parlamento Europeu e do Conselho, de 9 de março de 2011, relativa ao exercício dos direitos dos doentes em matéria de cuidados de saúde transfronteiriços*. Junho. Documento consultado na versão “em discussão pública”. Junho. Porto: ERS. Available: [https://www.ers.pt/uploads/writer\\_file/document/37/Diretiva\\_Transfronteirica\\_11.pdf](https://www.ers.pt/uploads/writer_file/document/37/Diretiva_Transfronteirica_11.pdf)
- 6) Entidade Reguladora da Saúde. (2014). *Recomendação do Conselho Diretivo da Entidade Reguladora da Saúde*. Agosto. Porto: ERS. Available: [https://www.ers.pt/uploads/writer\\_file/document/1052/Recomenda\\_o\\_Publicidade\\_-\\_vers\\_o\\_para\\_publica\\_o.pdf](https://www.ers.pt/uploads/writer_file/document/1052/Recomenda_o_Publicidade_-_vers_o_para_publica_o.pdf)
- 7) Entidade Reguladora da Saúde. (2017). *Análise do Impacto da Diretiva dos Cuidados de Saúde Transfronteiriços*. Junho. Porto: ERS. Available: [https://www.ers.pt/uploads/writer\\_file/document/2048/ERS\\_Estudo\\_Impacto\\_Diretiva\\_CST.pdf](https://www.ers.pt/uploads/writer_file/document/2048/ERS_Estudo_Impacto_Diretiva_CST.pdf)

## The Cross-Border Health Services Market in EU

- 8) European Commission. (2014). *Impact of information on patients' choice within the context of the Directive 2011/24/EU of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare - Final Report*. Brussels, August 2014.  
Available: [https://ec.europa.eu/info/sites/info/files/cbhc\\_information\\_patientschoice\\_en.pdf](https://ec.europa.eu/info/sites/info/files/cbhc_information_patientschoice_en.pdf)
- 9) European Commission (2015). *Evaluative study on the Crossborder healthcare Directive (2011/24/EU) - Final Report*. 21 March. Authors: Giulio Zucca, Alberto De Negri, Anda Berényi, András Kaszap; (KPMG), Karl A. Stroetmann (empirica) Peter Varnai (Technopolis). Available:  
[https://ec.europa.eu/health/sites/health/files/cross\\_border\\_care/docs/2015\\_evaluative\\_study\\_frep\\_en.pdf](https://ec.europa.eu/health/sites/health/files/cross_border_care/docs/2015_evaluative_study_frep_en.pdf)
- 10) European Commission (2015) *Special Eurobarometer 425: Patients' rights in cross-border healthcare in the European Union*. May 2015. Available: [https://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs\\_425\\_sum\\_en.pdf](https://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_425_sum_en.pdf)
- 11) European Commission (2015) *Member State data on cross-border healthcare following Directive 2011/24/UE – Year 2015*. Jonathan Olsson Consulting. Available:  
[https://ec.europa.eu/health/sites/health/files/cross\\_border\\_care/docs/2015\\_msdata\\_en.pdf](https://ec.europa.eu/health/sites/health/files/cross_border_care/docs/2015_msdata_en.pdf)
- 12) European Commission (2018) *Report from the Commission to the European Parliament and the Council on the operation of Directive 2011/24/EU on the application of patients' rights in cross-border healthcare*. Brussels. 21.9.2018. Available:  
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0651>
- 13) European Commission (2014) *Impact of information on patients' choice within the context of the Directive 2011/24/EU of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare - Final Report*. Brussels, August 2014. Available: [https://ec.europa.eu/info/sites/info/files/cbhc\\_information\\_patientschoice\\_en.pdf](https://ec.europa.eu/info/sites/info/files/cbhc_information_patientschoice_en.pdf)
- 14) European Commission (2015) *Evaluative study on the Crossborder healthcare Directive (2011/24/EU) - Final Report*. Brussels, 21 March. 2015. Authors: Giulio Zucca, Alberto De Negri, Anda Berényi, András Kaszap; (KPMG), Karl A. Stroetmann (empirica) Peter Varnai (Technopolis).  
Available: [https://ec.europa.eu/health/sites/health/files/cross\\_border\\_care/docs/2015\\_evaluative\\_study\\_frep\\_en.pdf](https://ec.europa.eu/health/sites/health/files/cross_border_care/docs/2015_evaluative_study_frep_en.pdf)
- 15) European Commission (2015). *Member State data on cross-border healthcare following Directive 2011/24/UE-Year 2015*. Jonathan Olsson Consulting. Available:  
[https://ec.europa.eu/health/sites/health/files/cross\\_border\\_care/docs/2015\\_msdata\\_en.pdf](https://ec.europa.eu/health/sites/health/files/cross_border_care/docs/2015_msdata_en.pdf)
- 16) European Commission (2015). *Special Eurobarometer 425: Patients' rights in cross-border healthcare in the European Union*. Fieldwork: October 2014. Publication: May 2015. Available: [https://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs\\_425\\_sum\\_en.pdf](https://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_425_sum_en.pdf)
- 17) European Commission (2015) *Cross-Border Care, DG Health and Food Safety. Annual Report 2015*. Available: [https://ec.europa.eu/health/cross\\_border\\_care/overview\\_pt](https://ec.europa.eu/health/cross_border_care/overview_pt)
- 18) European Commission (2016) *Cross-Border Care, DG Health and Food Safety. Annual Report 2016*. Available: <https://eur-lex.europa.eu/legal-content/PT/TXT/?uri=CELEX:52015DC0421>
- 19) European Commission (2017) *Cross-Border Care, DG Health and Food Safety. Annual Report 2017*. Available: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2018:651:FIN>
- 20) European Commission (2018). *Report from the Commission to the European Parliament and the Council on the operation of Directive 2011/24/EU on the application of patients' rights in cross-border healthcare*. Brussels, 21.9.2018. Available:  
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0651>
- 21) European Parliament. (2019). *Report on the implementation of the Cross-Border Healthcare Directive (2018/2108(INI))*. Comissão do Ambiente, da Saúde Pública e da Segurança Alimentar do Parlamento Europeu. Relator: Ivo Belet. 29.1.2019. Available: [http://www.europarl.europa.eu/doceo/document/A-8-2019-0046\\_PT.pdf](http://www.europarl.europa.eu/doceo/document/A-8-2019-0046_PT.pdf)
- 22) European Parliament - *Report on the implementation of the Cross-Border Healthcare Directive (2018/2108(INI))*. Comissão do Ambiente, da Saúde Pública e da Segurança Alimentar do Parlamento Europeu. 29.1.2019. available: [http://www.europarl.europa.eu/doceo/document/A-8-2019-0046\\_PT.pdf](http://www.europarl.europa.eu/doceo/document/A-8-2019-0046_PT.pdf)



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## Legal Status Analysis of Children Born From Siri Marriage in Birth Certification Production



Iyam Irahlatmi Kaharu<sup>1</sup>, Gamar Muhdar<sup>2</sup>

<sup>1,2</sup>Khairun University Ternate

**ABSTRACT:** This study aims to find out (a) whether children born from unregistered marriages can have a legal birth certificate (b) what are the legal consequences for children born from unregistered marriages in having a legal birth certificate. The research method used is that this research is a normative juridical law research (legal research), where the concept of normative legal research or library research is research that examines document studies, using various secondary data such as legislation, court decisions, legal theory, and can be in the form of opinions of legal scholars.

The results of the study show that 1) Children from serial marriages can make legal birth certificates based on the provisions explicitly regulated in Article 99 of the Compilation of Islamic Law, namely legal children are children born from legal marriages in accordance with Article 42 of Law Number 1 In 1974 concerning Marriage, as well as civil relations, children from unregistered marriages only have civil relations with the mother and her mother's family as explained in Article 43 of the Marriage Law. A valid marriage is a marriage that fulfills not only the terms and pillars of Islam, even administrative processes such as registration of marriages are provisions for the legal position of the marriage. 2) The legal consequence for a child from an unregistered marriage to make a legal birth certificate is if the birth certificate of a child from an unregistered marriage can be issued by including the name of the father, which is a requirement for a determination from the Court regarding the origin of the child. The child's parents apply for a court order regarding the legalization of the child by bringing evidence that proves they are related by blood. Complementing the decision of the Constitutional Court to be more accurate, serial marriages can be registered and then registered through civil registration so that birth certificates can be issued, on the basis of a valid marriage certificate in accordance with Article paragraph (1) of Law Number 1 of 1974 concerning Marriage stating the origin of a child is only can be proven by an authentic birth certificate,

**KEYWORDS:** Siri Marriage, Making Birth Certificate.

### PRELIMINARY

Marriage is a legal bond between a man and a woman to jointly make household life in an orderly manner. Marriage is considered valid if it has fulfilled the pillars and conditions of marriage as stipulated in Islamic law. According to Law Number 1 of 1974 concerning marriage, marriage is required so that humans have legitimate offspring and families towards a happy life in this world and the hereafter, under the auspices of divine love and pleasure. As stated in Article 1 of Law Number 1 of 1974 concerning Marriage which states that marriage is 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 (household) based on God Almighty.<sup>1</sup>

Legal marriages in Indonesia are marriages carried out according to the applicable laws and regulations. However, in reality there are still many marriages that are carried out without following what has been stipulated in the law, such as marriages carried out under the hands or better known as siri marriages. Siri marriages or underhanded marriages are marriages that are still carried out by fulfilling the pillars and conditions that have been determined according to Islamic law but its implementation is not carried out through registration or registration at the Office of Religious Affairs in their area of residence. Unlawful siri marriages or underhanded marriages according to state law also have a negative impact on the status of children born in the eyes of the law,<sup>2</sup>

<sup>1</sup> Neng Djubaidah. 2013. *Pencatatan Perkawinan dan Perkawinan tidak dicatat menurut hukum Tertulis di Indonesia dan Hukum Islam*, Sinar Grafika. Jakarta. Hlm 153

<sup>2</sup> Idris Ramulyo, 2006, *Hukum Pernikahan, Hukum Kewarisan, Hukum Acara Peradilan Agama dan Zakat Menurut Hukum Islam*, Jakarta: Sinar Grafika, hlm.71.

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A child is also a person who is born from a marriage between a woman and a man without considering that someone who is born by a woman even though she has never married is still called a child. nation and human resources for national development. The future of the nation and state in the future is in the hands of today's children. The better the child's personality now, the better the future life of the nation. And vice versa, if the child's personality is bad then the life of the nation will also be dilapidated. In general, people think that childhood is a long period in the life span.<sup>3</sup>

Law number 1 of 1974 does not directly regulate the benchmarks for when someone is classified as a child, but this is implied in Article 6 paragraph (2) which contains provisions for marriage conditions for people who have not reached the age of 21 years to obtain permission from both parents.

Article 7 paragraph (1) of the Law states that the minimum age for marriage for men is 19 (nineteen) years and for women 16 (sixteen) years. According to Prof. Hilman Hadikusuma.SH, drawing the line between a minor and an adult is actually not an issue. This is because in fact, even though a person is not yet an adult, he or she has taken legal actions, for example, an immature child has traded, traded and so on, even though he is not married.<sup>4</sup> Article 47 paragraph (1) states that children who have not reached the age of 18 (eighteen) years or have never married are under the control of their parents as long as their parental authority is not revoked. Article 50 paragraph (1) states that children who have not reached the age of 18 (eighteen) years and have not been married, are not under the authority of their parents, are under the authority of a guardian. Number 1 of 1974 is for those who are not yet mature and have matured, namely 16 (sixteen) years for women and 19 (nineteen) years for men.<sup>5</sup>

Marriage is legal if it is carried out according to the laws of each religion and belief.<sup>6</sup> There is an obligation for every marriage to be recorded according to the applicable laws and regulations. Marriages are registered to obtain a marriage certificate. A marriage certificate is evidence that a marriage has occurred or has taken place, not one that determines whether a marriage is legal or not. This absence of evidence causes the children and wives of unregistered marriages to have no legal status (legality) before the State. PMarriages which are held in front of religious leaders based on the provisions of Islamic law/shari'a without being held in front of a marriage registrar (in this case the Office of Religious Affairs) include siri (underhanded) marriages.<sup>7</sup>

Based on the starting point of the description above, interesting issue can be raised in this research are: Legal Analysis of the Status of Children Born from Siri Marriages in Making Birth Certificates in the review of Law Number 1 of 1974 concerning Marriage and Permendagri Number 9 of 2016 concerning the Acceleration of Increasing the Coverage of Birth Certificate Ownership).

### Formulation of the problem

Starting from the background and identification of the problems described above, several problems are formulated as follows:

- 1) Can a child from a serial marriage be legally able to make a birth certificate?
- 2) What are the legal consequences for a child from a serial marriage to make a legal birth certificate?

## LITERATURE REVIEW

### A. Conceptual Foundations of Marriage

Marriage According to Law Number 1 Year 1974 namely for administrative and legal order. The procedure for carrying out a marriage must follow the procedure as regulated in a government regulation regarding the implementation of law no. 1 of 1974.<sup>8</sup>

Marriages carried out in Indonesia are subject to the provisions of Law no. 1 of 1974 concerning Marriage which stipulates the principles or principles of marriage, including that the purpose of marriage is to form a happy and eternal family. For that husband and wife help and complement each other so that each can develop his personality to help and achieve spiritual and material well-being.<sup>9</sup>

A marriage is legal if it is carried out according to the law of each religion and belief, and besides that each marriage must be recorded according to the applicable laws and regulations.<sup>10</sup>

If the marriage is not carried out based on religion and belief and is registered at the KUA (for those who are Muslim) or at the Civil Registry Office (for those who are non-Muslim) then the marriage carried out is invalid and not recognized by the state.

<sup>3</sup> D.Y. Witanto, 2012, *Hak dan Kedudukan Anak Luar Kawin*, Kencana, Jakarta: hlm. 59.

<sup>4</sup> Hilman Hadikusuma. 2007. *Hukum Perkawinan Indonesia*, Mandar Maju, Jakarta. Hlm 1

<sup>5</sup> Batasan Usia dikatakan Anak Berdasarkan Undang-Undang Nomor 1 Tahun 1974 tentang Perkawinan

<sup>6</sup> Pasal 2 ayat 1 Undang-Undang Perkawinan.

<sup>7</sup> <https://www.hukumonline.com/klinik/a/mendapatkan-akta-kelahiran-tanpa-surat-kawin-cl4576>

<sup>8</sup> Pernikahan Menurut Undang-Undang Nomor 1 Tahun 1974..

<sup>9</sup> Taufiqurrohman Syahuri. 2013. *Legislasi Hukum Perkawinan di Indonesia, Pro Kontra Pembentukannya Hingga Putusan Mahkamah Agung*. Kencana Prenada Media Group, Bandung. Hlm 197-198

<sup>10</sup> Witanto, D.Y. 2012. *Hukum Keluarga: Hak Kedudukan Anak Luar Kawin*. Prestasi Pustaka. Jakarta. Hlm 45-46

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The current phenomenon is that many people do not carry out marriages based on the requirements mentioned above for various reasons when marriages are carried out religiously, the men are still bound by marriage to other people, both with awareness from the women themselves and there are elements of promises from the men. men that he is in the process of divorcing his wife and soon to be married, on the other hand for groups of people who cannot afford they do not register their marriages because of the costs that must be incurred for recording this marriage, or the prospective wife does not know that her future husband is married to a woman who others and others. Whatever the reason, women should be aware of the impact of underhanded marriages or unregistered marriages on their rights as wives and children born in these marriages and be prepared for the risks they will face.<sup>11</sup>

Previous marriage regulations did not regulate underhanded marriages or unregistered marriages. The term underhanded marriage or unregistered marriage is commonly used by the community for people who carry out marriages without procedures regulated by the Marriage Act. Usually underhand marriages are carried out based on the religion or customs of the prospective husband or wife. By religion and custom, the marriage is legal but legally the marriage is not officially recognized by the state.<sup>12</sup>

### B. Conceptual Foundations of Children

A son is someone who is born from a marriage between a woman and a man without considering that someone who is born by a woman even though they have never married is still called a child, a child is also the forerunner of the birth of a new generation which is the successor to the ideals of the nation's struggle. and human resources for national development.<sup>13</sup>

Children are the nation's assets, the future of the nation and state in the future is in the hands of children. The better the personality of the child now, the better the future life of the nation. Vice versa, if the child's personality is bad, the life of the nation will be bad too. In general, people think that childhood is a long period in the life span. For children's lives, childhood is often considered endless, so they can't wait for the coveted moment, namely the recognition from society that they are no longer children but adults.<sup>14</sup>

According to Hurlock (1980), humans develop through several stages that take place sequentially, continuously and at a certain development tempo, continuously and within a certain developmental tempo and can be generally accepted. For more details, the stages of development can be seen in the description of the prenatal period, which starts from the time of conception at birth - the baby's period of one day to two weeks. Infancy; two weeks to a year. Childhood is the period of early childhood: 1 year - 6 years, Children born are from 6 years to 12/13 years. And adolescence is 12/13 years to 21 years. Adulthood is 21 years to 40 years. And the middle age is from 40 years to 60 years and the old age is 60 years until death.<sup>15</sup>

### C. Conceptual Basis About the Process of Making a Birth Certificate

birth certificate is a civil registration certificate resulting from the recording of a person's birth, in another sense a birth certificate is a form of identity for each child which is an integral part of the civil and political rights of citizens. The right to identity is a form of state recognition of a person's existence before the law.

The right of identity for a child is stated firmly in Article 5 of Law no. 23 of 2002 concerning Child Protection. The article states that every child has the right to a name as self-identity and citizenship status. Then this is also emphasized in Article 27 paragraphs (1) and (2) which states, paragraph (1) The identity of each child must be given from birth, and paragraph (2) reads that the identity as referred to in paragraph (1) is stated in the birth certificate. Meanwhile, Article 28 D paragraph (1) of the 1945 Constitution states that "everyone has the right to recognition, guarantees, protection and fair legal certainty and equal treatment before the law."<sup>16</sup>

The 1945 Constitution of the Republic of Indonesia also provides guarantees for citizenship status as regulated in 28 D paragraph (4) which states that everyone has the right to citizenship status. The purpose of birth registration according to Law no.1 of 1974 As one of the existing registration systems in a country, universal birth registration is basically a state recognition of

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<sup>11</sup> Fathurrahman Djamil. 2002. Pengakuan Anak Luar Nikah Akibat Hukumnya dalam Chuzaimah T. Yanggo dan Hafiz Anshary, Problematikan Hukum Islam Kontemporer. Firdaus. Jakarta. Hlm 129

<sup>12</sup> <https://business-law.binus.ac.id/2018/07/09/perkawinan-di-bawah-tangan-nikah-siri-dan-akibat-hukumnya..>

<sup>13</sup> Amir Syarifuddin. 2007. Hukum Perkawinan Islam di Indonesia: Antara Fiqh Munakahat dan Undang-Undang Perkawinan. Kencana. Jakarta. Hlm. 36

<sup>14</sup> <https://andibooks.wordpress.com/definisi-anak>,

<sup>15</sup> Hurlock, Elizabeth B, *Developmental Psychology: A Life-Span Approach, 5 th ed.* Terjemahan Istiwidayanti dan Soedjarwo, *Psikologi Perkembangan: Suatu Pendekatan Sepanjang Rentang Kehidupan*, Jakarta, Erlangga, 1980

<sup>16</sup> Abdul Rahman Ghozali. 2008. Fiqh Munakahat. Cet. III; Kencana. Jakarta. Hlm. 103..



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a person's civil status. In a more concrete sense, birth registration provides legal recognition from the state to a person's identity, genealogy and citizenship, which is realized through a birth registration document, namely a birth certificate.<sup>17</sup>

Birth is the presence of a new family member that must be reported immediately. Ownership of a birth certificate is a form of fulfilling the obligations and responsibilities of parents to their children. Although birth certificates are very important documents, there are still many people who are reluctant to process them quickly. They often delay the management because they are lazy. Some still don't want to take care of it at all. Whereas ideally, the making of a birth certificate is done within 60 days of delivery.

### RESEARCH METHODS

#### A. Research Type

This research is a normative juridical law research (legal research), where the concept of normative legal research or library research is research that examines document studies, which uses various secondary data such as legislation, court decisions, legal theory, and can be in the form of opinions. law scholars

#### Research Approach

The approach used in this research is the statutory approach and the conceptual approach. The statute approach is an approach taken by examining laws and regulations relating to the legal issues being handled. This conceptual approach is also carried out when the relevant laws and regulations do not or do not regulate the problem at hand.<sup>18</sup>

To build strong legal arguments, not only based on the provisions of the legislation but also moving on to a conceptual approach, namely the views of scholars and legal doctrines contained in books (treatises) and court decisions.<sup>19</sup>

In this regard, the statutory and conceptual approach is used to answer legal issues and build a strong legal argument in this research.<sup>20</sup>

The analysis of legal materials in this study will use deductive logic analysis methods with qualitative normative analysis methods.<sup>21</sup>The method of deductive logic analysis is to draw conclusions from a general problem to the concrete problem under study.

### RESEARCH RESULTS AND DISCUSSION

#### A. Children from Siri Marriages Can Have a Legal Birth Certificate

A child born through a legal marriage process both based on religious law and state law bears the title as a legitimate child, and vice versa if a child born not through a legal marriage process will bear the title as an illegitimate child, namely a child out of wedlock (children who are not married). adultery). It is these illegitimate children who have their own problems and require serious solutions from all parties, both from those who are responsible for the implementation of religious law, as well as state law, especially in making birth certificates to obtain self-legality in the continuation of life in the future, both in education and education. the future of legal recognition of children. Likewise, underhand marriages or "siri marriages" are marriages that are not accompanied by registration before a religious leader.

Marriage like this is contrary to Law Number 1 of 1974 article 2 paragraph 2 "every marriage is recorded according to the applicable laws and regulations"<sup>22</sup>Therefore, marriages that do not go through with formal legal registration cannot be justified in the sense that their validity is not recognized by the state, so they cannot obtain marriage certificate information.

Underhanded marriages / unregistered marriages, there are differences in the views of scholars or Islamic law enforcers, including differences in the interpretation of Article 2 paragraph 2 of Law Number 1 of 1974 concerning marital status which has implications for the status of children born. However, according to Law Number 1 of 1974 Article 2 paragraph 2 and Article 43, that a legitimate child is a child born through a legal marriage, namely a marriage that is registered according to the applicable laws and regulations. Meanwhile, children born out of wedlock only have a civil relationship with their mother and their mother's family, so they do not get the rights from their biological father as well as legitimate children.

A marriage becomes legal according to the legislation that has been regulated in Article 2 paragraph (1) of the marriage law stating "a marriage is valid if it is carried out according to the law of each religion and belief which can be classified in marriage:

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<sup>17</sup>Mahmuda Junus. 1989. *Hukum Perkawinan Islam Menurut Mazhad : Sayfi'I, Hanafi, Maliki dan Hambali*. Pustaka Mahmudiyah. Jakarta. Hlm. 110.

<sup>18</sup>Lexy J. Moleong. 2002. *Metode Penelitian Kualitatif*. Remaja Rosda Karya. Bandung. Hlm. 3

<sup>19</sup>Soerjono Soekanto. 1998. *Pengantar Penelitian Hukum*. UI Press. Jakarta, Hlm. 2

<sup>20</sup>Johan Nasution dan Bahder, 2008, *Metode Penelitian Ilmu Hukum*, Mandar Maju, Bandung.,

<sup>21</sup> Ronny Hanitijo Soemitro, 1988, *Metode Penelitian Hukum dan Jurimetri*, Jakarta, Alumni, hlm. 98

<sup>22</sup>Sudarsono, 2007, *Hukum Perkawinan Nasional*, Jakarta: PT. Rineka Cipta, hlm. 289

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### a) Children Born According to National Marriage

Legal marriages according to law in national marriages are marriages carried out according to the applicable law of every religion that can go through procedures and can give birth to children, which can be classified as follows:

#### 1. Legal Child

Legitimate children are closely related to the validity of marriage. Marriage that goes through the correct legal procedures and provisions will give birth to legal children. As Article 42 of Law Number 1 of 1974 reads "Legal children" are children born in or as a result of legal marriages. This can also be related to the Compilation of Islamic Law in Article 99 which states that a legitimate child is a child born in or as a result of a legal marriage.

Analysis of the explanation of the good article based on Law Number 1 of 1974 and the Compilation of Islamic Law if the marriage has been carried out according to the rules of religious law, then the marriage is considered valid according to customary law and the child born becomes a legal child.

#### 2. Invalid Child

Article 42 of the Marriage Law states that a legitimate child is a child born in or as a result of a legal marriage, so to interpret an illegitimate child or an illegitimate child is a child not born in or as a result of a legal marriage.<sup>23</sup>This can also be related to the Compilation of Islamic Law in Article 99 which states that a legitimate child is a child born in or as a result of a legal marriage. As the data produced from the Civil Registry Office of Ternate City in the last three years shows that the birth rates of children aged 0 to 18 years are:

**Table 1.**

No	Year Data	Amount	Note:
1.	2020	68893	
2.	2021	61934	
3.	2022	64389	January to August

**Data Source:** Child birth rate at the age of 0 to 18 based on recapitulation from the Ternate City Civil Registry Office.

This data shows the total number in each year. However, in 2020 the overall figure is 68893 which is a very high number when compared to 2021 data, based on an interview from one of the respondents in the civil registry of Ternate City that the highest number is the number where the overall number in the registration of birth certificates is in 2020, but in 2020 in 2021 the number decreased due to the recording of family cards proposing to move residents to other areas so that the data decreased. Then in 2022 until August the data achievement increased again, this was due to the increase in the number of births in service in 2022 again.<sup>24</sup>

Analysis of the explanation of the good article based on Law Number 1 of 1974 and the Compilation of Islamic Law if the marriage has been carried out according to the rules of religious law, then the marriage is considered valid according to customary law and the child born becomes a legal child.

### b) The reasons for the birth of an illegitimate child:

- 1) a child born to a woman but the woman does not have a marriage bond with the man who had sex with her;
- 2) a child born to a woman, the birth is known and desired by the parents, only one of them is still bound by another marriage;
- 3) a child born to a woman in the iddah period of divorce but the child born is the result of a relationship with a man who is not her husband, there is a possibility that this illegitimate child is accepted by the families of both parties naturally if the woman who gave birth is married to the man who had intercourse with her;
- 4) a child born to a woman whose husband has left her for more than 300 days is not recognized by her husband;
- 5) children born to women in the religion they embrace determine otherwise, for example in the Catholic religion there is no divorce, but it is also done then he remarries and gives birth to children. The child is considered an illegitimate child;

<sup>23</sup>I Nyoman Sujana, 2015, *Kedudukan Hukum Anak Luar Kawin Dalam Perspektif Putusan Mahkamah Konstitusi Nomor 46/PUU-Viii/2010*, Yogyakarta, Aswaja Pressindo. hlm. 64

<sup>24</sup>Sumber data Cakupan Kepemilikan Akta Kelahiran Kantor Catatan Sipil Kota Ternate

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- 6) children born to a woman, while in them state provisions prohibit marriage, for example Indonesian citizens (WNI) and foreign citizens (WNA) do not get permission from the embassy to hold a marriage because one of them already has a wife but they interfere and give birth to a child, the child is also called an illegitimate child;
- 7) a child born to a woman but the child does not know his parents at all.<sup>25</sup>

The legal status of an illegitimate child only has a civil relationship with the mother and her mother's family, but with the biological father and her family, the illegitimate child has absolutely no civil relationship.<sup>26</sup>

Likewise, making a child's identity in the form of a birth certificate may not be made, even if it is made what is listed in it is a child out of wedlock by only including the name of the mother, while the name of the father is not listed, so that children from unregistered marriages do not get legal protection.<sup>27</sup>The data source for the Coverage of Birth Certificate Ownership at the Ternate City Civil Registry Office based on birth certificates aged 0 to 18 years from couples whose marriages have not been registered can be explained in the table below:

**Table 2.**

No	Year Data	Amount	Information
1.	2020	-	
2.	2021	-	
3.	2022	91	January to August

**Source of data:** Coverage of Birth Certificate Ownership of Ternate City Civil Registry Office based on birth certificates aged 0 to 18 years from couples whose marriages have not been registered.

Based on data sources in 2020 and 2021, it shows that it has not been recorded at the Ternate City Civil Registry office. However, in 2022, from January to August 2022, only 91 birth certificates were recorded.

From the description above, it can be understood that the legal system in force in Indonesia does not recognize unregistered marriages or is more popularly known as unregistered marriage, let alone regulates its implementation in a law. Although marriages carried out without registration under religious law and customary law are considered valid, the national law of marriages carried out is outside of knowledge and supervision. The marriage registrar does not have legal force and is still considered invalid and women who are married without going through the registration process cannot obtain a marriage certificate, so that even if they give birth to children, their children are categorized as illegitimate children in the eyes of the law.

### c) Rights and Obligations of Illegitimate Children or Children Out of Wedlock

According to Article 43 of the Marriage Law, it is stated that children born out of wedlock only have a civil relationship with their mother and their mother's family. This condition has a very negative impact on children who are born, especially their rights which include:

1. The status of a child born as an illegitimate child, he or she will not get the same rights as children born through a legal marriage process according to national law;
2. The unclear status of the child before the law, results in the relationship between the child and the father being not strong, so that it has the potential for a father to deny that the child is not his biological child.<sup>28</sup>

## B. Legal Consequences For Children From Siri Marriage To Make Legal Birth Certificates

In order to understand the legal consequences for children from serial marriages to obtain a birth certificate, it can be understood based on several legal rules, namely:

### 1. Based on Law Number 1 of 1974 concerning Marriage

The provisions of Law number 1 of 1974 concerning Marriage that marriage aims to form a happy and eternal family based on the One Godhead. Unregistered marriages or underhanded marriages are marriages that are not recorded by the Marriage Registrar (PPN). Marriages that are not under the supervision of VAT are considered religiously valid, but do not have legal force because they do not have proof of a valid marriage according to the applicable laws and regulations. Another opinion states that

<sup>25</sup>Zuhdi Masjful. 1996. *Nikah Siri, Nikah di Bawah Tangan dan Status Anaknya Menurut Hukum Islam dan Hukum Positif*, *Mimbar Hukum* No.28 tahun VII. Hlm 211-227

<sup>26</sup>Hartono Marjono. 1995. Syarat Manakah yang menentukan Sahnya Perkawinan, *Mimbar Hukum* No. 23. Hal 57-71

<sup>27</sup>Rika Saraswati, 2015, *Hukum Perlindungan Anak di Indonesia*. Bandung: PT. Citra Aditya Bakti, hlm. 47

<sup>28</sup>I Nyoman Sujana, *Op.,Cit.*, hlm. 121

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unregistered marriages or underhanded marriages are marriages carried out without meeting the requirements and procedures of the legislation. There is a difference of opinion about whether the marriage is legal or not.

The legal position of unregistered marriage is the same as a legal marriage as stipulated in Article 2 paragraph (1) of Law no. 1 of 1974 concerning Marriage. However, no records were made from the administrative side of unregistered marriages as stipulated in Article 2 paragraph (2) of Law no. 1 of 1974, legally, the status of unregistered marriage cannot be recognized. Then legally due to unregistered marriage on the position of the child when reviewed according to Law no. 1 of 1974 concerning Marriage, among others, is to make the status and position of a child unrecognized where the child was born before the marriage of both parents is registered and legally recognized.

The status of a child born from an unregistered marriage cannot be stated as a child in a legal marriage. In the eyes of the law, his birth status will be the same as that of a child out of wedlock. We can see this in Article 42 of Law Number 1 of 1974 concerning Marriage which states "A legitimate child is a child born in or as a result of a legal marriage." And its position in Article 43 paragraph (1) of Law Number 1 of 1974 concerning Marriage which states "Children born outside of marriage only have a civil relationship with their mother and their mother's family" jo. Article 100 of the Compilation of Islamic Law which states "Children born out of wedlock only have a kinship relationship with their mother and their mother's family." As a child who is considered to be born outside the legal marriage of both parents, but still can get a birth certificate through birth registration. In the birth certificate only the name of the mother is listed, if you want to include the name of the father in the deed, it is necessary to determine as a form of acknowledgment of the child by the father.<sup>29</sup>

As for children, the illegitimacy of unregistered marriages according to state law has a negative impact on the status of children born in the eyes of the law, namely the status of children who are born are considered illegitimate children. Consequently, the child only has a civil relationship with the mother and the mother's family. This means that the child does not have a legal relationship with his father whose status is also considered in his birth certificate as an illegitimate child, so the name of the mother who gave birth to him is included. Information in the form of status as an illegitimate child and the absence of the father's name will have a very deep social and psychological impact on the child and his mother. Then, the unclear status of the child before the law, resulted in the relationship between father and son not being strong, so that one day the father could deny that the child was not his biological child.

### **2. Issuance of a Birth Certificate of a Child from an Unregistered Marriage by a civil registration agency after the decision of the Constitutional Court Number 46/PUU-VIII/2010 concerning the issue of the child's civil relationship with his biological father**

The decision of the Constitutional Court in decision number: 46/PUU-VIII/2010 dated 17 February 2012 stipulates that children born out of wedlock have a civil relationship with their mother and their mother's family as well as with a man as their father which can be proven based on science and technology and / or other evidence according to the law having blood relations, including ties to his father's family. The purpose of this Constitutional Court decision is to clarify the position of children out of wedlock, that children out of wedlock are also entitled to legal protection as well as children born from legal marriages. The law must provide fair legal protection and certainty for the status of a child who is born and the rights that exist in him, including for children born out of wedlock.<sup>30</sup>

Referring to the decision of the Constitutional Court as mentioned above, it is an injustice when the law stipulates that a child born from a pregnancy due to sexual relations outside of marriage only has a relationship with the woman as the mother. Meanwhile, a man who has sexual intercourse that causes pregnancy and the birth of a child is separated from his responsibilities as a father and the child who is born does not get the rights of the man as the father.<sup>31</sup>

In the process of law enforcement in certain cases, it is necessary to involve various other sciences. For example, in relation to the origin of offspring, geneticists can use genetics to make a match so that a child can be ascertained that there are similarities with the man who is thought to be his biological father. If the results of the examination show conformity, then the origin of the offspring can be proven before the law.<sup>32</sup>DNA (Deoxyribonucleic acid) is the repository of all genetic information from living things, including humans.

Article 42 of Law Number 1 of 1974 concerning Marriage states that a legitimate child is a child born in or as a result of a legal marriage, a valid marriage is a marriage that is registered in a legal institution according to law, while a siri marriage is not registered at a civil registration agency. thus causing the issuance of the birth certificate of the child of the unregistered marriage

<sup>29</sup>[https://yuridis.id/akibat-hukum-bagi-anak-pernikahan-siri/diunduh pada tanggal 3 Juli 2022](https://yuridis.id/akibat-hukum-bagi-anak-pernikahan-siri/diunduh%20pada%20tanggal%203%20Juli%202022).

<sup>30</sup>I Nyoman Sujana, *Op.,Cit.*, hlm. 184

<sup>31</sup>D.Y. Witanto, 2012, *Hak dan Kedudukan Anak Luar Kawin*, Kencana, Jakarta: 2012., hlm. 232-233

<sup>32</sup>*Ibid*

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to be made by only including the name of the mother, not including the name of the father by attaching the marriage certificate under the hand or the unregistered marriage.

After the decision of the Constitutional Court Number 46/PUU-VIII/2010 concerning the issue of a child's civil relationship with his biological father, the birth certificate of a child from an unregistered marriage does not only include the father's name on condition that the court places the child's origin. The child's parents submit an application for a court decision regarding the legalization of the child by bringing evidence such as a statement of child recognition or evidence through science and technology and/or other evidence according to law that proves to have blood relations, then a birth certificate can be issued with the name of the father .

Complementing the Constitutional Court's decision to be more accurate, it is better if the unregistered marriage is registered and then registered through civil registration, so that the birth certificate can be issued on the basis of a valid marriage certificate in accordance with Article 55 paragraph (1) of Law Number 1 of 1974 concerning Marriage. "The origin of a child can only be proven by an authentic birth certificate, issued by an authorized official, of course a birth certificate that includes the names of the mother and father for the legal status of the child as a basis for obtaining rights as a child.

### 3. Based on Minister of Home Affairs Regulation Number 9 of 2016 concerning the Acceleration of Increasing Coverage of Birth Certificate Owners

Unregistered marriages, which have fulfilled all the pillars and conditions set out in fiqh law (Islamic law), but without official registration at the competent authority as regulated by the applicable laws and regulations.

The status of children born from unregistered marriages only has a civil relationship with their mother and their mother's family. This has the consequence that children born from marriages that are not registered under state law, the child does not have a civil relationship with his father. children resulting from unregistered marriages do not have inheritance rights or inheritance from their fathers. The juridical consequence of the enactment of Permendagri Number 9 of 2016 is related to legal protection for children born from unregistered marriages, namely the child will remain with his mother even though the child is determined not to be legal in the eyes of the law. The child's birth certificate is recorded based on the SPTJM, the truth as a married couple is an authentic certificate issued by an authorized official.

According to the researcher's opinion, the data collected from the Office of Civil Registry of Ternate City that the socialization related to Permendagri Number 9 of 2016 concerning the Acceleration of Increasing the Coverage of Birth Certificate Ownership has been carried out in all villages in Ternate City through representatives of the respective Village Heads held at the Ternate City Civil Registry Office. So that all children born are required to have a Birth Certificate. This condition provides a logical consequence, that between the existing legal rules and the development of science and technology to obtain certainty of the origin of children born out of wedlock, so that the child can obtain his rights as a child and at the same time can give devotion and respect to his mother and to his family. biological father.

Likewise, children born from marriages that are not registered at the Office of Religious Affairs (KUA) or authorized agencies because they do not go through a legal marriage process, which causes their parents not to get a marriage certificate and children born do not get a birth certificate, so the marriage is categorized as an illegitimate marriage and children born are equated with children out of wedlock. Therefore, according to the Constitutional Court, marriage registration is not a factor that determines the validity of a marriage, so the validity of marriage remains the domain of religious law and belief rather than the two prospective brides. Meanwhile, the state does not interfere in the issue of whether or not marriage is legal. The state cannot impose a provision on the validity of marriage based on the size of a particular religion.<sup>33</sup>

The Constitutional Court is of the opinion that the relationship between a child and a man as his biological father is not solely due to marital ties, but can also be based on proving the existence of a blood relationship between the child and his father. Apart from the matter of the administrative procedure of the marriage, children born must have the same rights as children in general who are born from a legal marriage. If this is not the case, it will have a negative impact on children born outside of legal marriages who actually never asked to be born in the world. Children who are legal subjects who do not have the ability to defend their own law, so that every legal action taken by a child must be represented by his parents or legal guardian. If there is a marital dispute between the two parents, the children born are not allowed to become victims. This does not only apply to disputes relating to annulment of marriage. This means that whether the marriage is legal or not, the consequences should not be borne by the child. Because the law must provide fair protection by providing equal opportunities for every child to grow and develop as children in general.<sup>34</sup>

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<sup>33</sup>*Ibid.*, hlm. 229

<sup>34</sup>*Ibid.*, hlm. 246-247

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It can be understood that the Constitutional Court is trying to draw a common thread between the legal impasse that has occurred so far and that every child wants to find his identity by knowing the father who caused him to be born, even though he is in his position as the biological father, both in the context of fighting for civil interests as well as for the interests of society, other interests arising from the clarity of the lineage of the child concerned.

### CONCLUSION

- 1) Children from serial marriages can make legal birth certificates based on the provisions explicitly regulated in Article 99 of the Compilation of Islamic Law, namely legal children are children born from legal marriages in accordance with Article 42 of Law Number 1 of 1974 concerning Marriage, so also with civil relations, children from unregistered marriages only have civil relations with the mother and her mother's family as described in Article 43 of the Marriage Law. A valid marriage is a marriage that fulfills not only the terms and pillars of Islam, even administrative processes such as registration of marriages are provisions for the legal position of the marriage. Thus, to get the position of the child, it will be easy to obtain then the rights of the child will be guaranteed, including having a relationship with the mother and even the father who must be responsible for caring for, educating, and providing for one of the rights of the child that must be given. The decision of the Constitutional Court is one of the efforts in protecting the position of children from unregistered marriages which complements Article 43 of the Marriage Law, children born from unregistered marriages not only have a relationship with the father and his father's family based on legal evidence that proves to have blood relations.
- 2) The legal consequence for a child from an unregistered marriage to make a legal birth certificate is if the Birth Certificate of a child from an unregistered marriage can be issued by including the name of the father, which is a requirement for a determination from the Court regarding the origin of the child. The child's parents apply for a court order for ratification of the child by bringing evidence proving they are related by blood. Complementing the decision of the Constitutional Court to be more accurate, serial marriages can be registered and then registered through civil registration so that birth certificates can be issued, on the basis of a valid marriage certificate in accordance with Article paragraph (1) of Law Number 1 of 1974 concerning Marriage stating the origin of a child is only can be proven by an authentic birth certificate,

### REFERENCES

#### BOOK :

- 1) Abdul Rahman Ghozali. 2008. *Fiqh Munakahat*. Cet. III; Kencana. Jakarta. Hlm. 103.
- 2) Amir Syarifuddin. 2007. *Hukum Perkawinan Islam di Indonesia: Antara Fiqh Munakahat dan Undang-Undang Perkawinan*. Kencana. Jakarta. Hlm. 36
- 3) D.Y. Witanto, *Hak dan Kedudukan Anak Luar Kawin*, Kencana, Jakarta: 2012.
- 4) Fathurrahman Djamil. 2002. *Pengakuan Anak Luar Nikah Akibat Hukumnya dalam Chuzaimah T. Yanggo dan Hafiz Anshary, Problematikan Hukum Islam Kontemporer*. Firdaus. Jakarta. Hlm 129
- 5) Hartono Marjono. 1995. *Syarat Manakah yang menentukan Sahnya Perkawinan*, *Mimbar Hukum* No. 23. Hal 57-71
- 6) Hilman Hadikusuma. 2007. *Hukum Perkawinan Indonesia*, Mandar Maju, Jakarta. Hlm 1
- 7) Hurlock, Elizabeth B, *Developmental Psychology: A Life-Span Approach, 5 th ed*. Terjemahan Istiwidayanti dan Soedjarwo, *Psikologi Perkembangan: Suatu Pendekatan Sepanjang Rentang Kehidupan*, Jakarta, Erlangga, 1980
- 8) I Nyoman Sujana, 2015, *Kedudukan Hukum Anak Luar Kawin Dalam Perspektif Putusan Mahkamah Konstitusi Nomor 46/PUU-Viii/2010*, Yogyakarta, Aswaja Pressindo.
- 9) Idris Ramulyo, 2006, *Hukum Pernikahan, Hukum Kewarisan, Hukum Acara Peradilan Agama dan Zakat Menurut Hukum Islam*, Jakarta, Sinar Grafika.
- 10) Johan Nasution dan Bahder, 2008, *Metode Penelitian Ilmu Hukum*, Mandar Maju, Bandung.
- 11) Lexy J. Moleong. 2002. *Metode Penelitian Kualitatif*. Remaja Rosda Karya. Bandung. Hlm. 3.
- 12) Muhammad Daud Ali, 1990, *Asas Hukum Islam*, Jakarta: Rajawali Press.
- 13) Mahmuda Junus. 1989. *Hukum Perkawinan Islam Menurut Mazhad : Sayfi'l, Hanafi, Maliki dan Hambali*. Pustaka Mahmudiyah. Jakarta. Hlm. 110
- 14) Neng Djubaidah. 2013. *Pencatatan Perkawinan dan Perkawinan tidak dicatat menurut hukum Tertulis di Indonesia dan Hukum Islam*, Sinar Grafika. Jakarta. Hlm 153
- 15) Rika Saraswati, 2015, *Hukum Perlindungan Anak di Indonesia*. Bandung: PT. Citra Aditya Bakti.
- 16) Ronny Hanitijo Soemitro, 1988, *Metode Penelitian Hukum dan Jurimetri*, Jakarta, Alumni.
- 17) Soerjono Soekanto. 1998. *Pengantar Penelitian Hukum*. UI Press. Jakarta, Hlm. 2
- 18) Sudarsono, 2007, *Hukum Perkawinan Nasional*, Jakarta: PT. Rineka Cipta.

## Legal Status Analysis of Children Born From Siri Marriage in Birth Certification Production

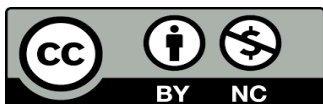
- 19) Sumber data Cakupan Kepemilikan Akta Kelahiran Kantor Catatan Sipil Kota Ternate
- 20) Taufiqurrohman Syahuri. 2013. *Legislasi Hukum Perkawinan di Indonesia, Pro Kontra Pembentukannya Hingga Putusan Mahkamah Agung*. Kencana Prenada Media Group, Bandung. Hlm 197-198
- 21) Titik Triwulan Tutik dan Trianto, *Poligami Perspektif Perikatan Nikah*, Jakarta, Prestasi Pustaka, 2007, hlm. 40
- 22) *Zuhdi Masjfuk. 1996. Nikah Siri, Nikah di Bawah Tangan dan Status Anaknya Menurut Hukum Islam dan Hukum Positif, Mimbar Hukum No.28 tahun VII. Hlm 211-227*

### LEGISLATION:

- 1) Undang-Undang Dasar Negara Republik Indonesia Tahun 1945.
- 2) Undang-Undang Perkawinan Pasal 2 ayat 1
- 3) Undang-Undang RI Nomor 1 Tahun 1974 tentang Perkawinan

### WEBSITE:

- 1) <https://andibooks.wordpress.com/definisi-anak>.
- 2) <https://businesslaw.binus.ac.id/2018/07/09/perkawinan-di-bawah-tangan-nikah-siri-dan-akibat-hukumnya>.
- 3) <https://www.hukumonline.com/klinik/a/mendapatkan-akta-kelahiran-tanpa-surat-kawin-cl4576>.
- 4) [www.idjoel.com/pengertian-anak-menurut-para-ahli](http://www.idjoel.com/pengertian-anak-menurut-para-ahli)
- 5) <https://yuridis.id/akibat-hukum-bagi-anak-pernikahan-siri/> diunduh pada tanggal 3 Juli 2022.



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## Decrypting Environmental Impact on Human Psychology in William Golding's *Lord of the Flies*



Doctor Alexis Hergie Seguedeme<sup>1</sup>, Doctor Bertin Yelindo Dansou<sup>2</sup>, Doctor Koumabe Bossoun<sup>3</sup>

<sup>1,3</sup>Teacher-researcher at the University of Abomey-Calavi, Benin

<sup>2</sup>Teacher-researcher at the National University of Agriculture of Porto-novo, Benin

**ABSTRACT:** This research work sets out to highlight the influence exercised by the environment on human being's psychology as shown in disguised in William Golding's *Lord of the Flies*. Every human being no matter his/her race, sex, age, or social affiliation at a given moment of his/her life has been subjected to the influence of some particular elements uncontrollable by the intrinsic power to dominate on anything. This may seem innocuous for a being not hardened, but in reality, it shows the weakness of human essence regarding to external or internal stimulations. To those stimuli, the mind and the soul are highly impacted to the extents of an abrupt behavioral change.

**KEYWORDS:** Environmental, Impact, Human psychology

### INTRODUCTION

Humanity no matter how it is defined by scientists nowadays remains a big diversity of people holding deep down them feelings and facets shaping undeniably individual behaviors. In general, human beings regarding to extreme situations are predisposed to react unpredictably. When some people subjected to the influence of different elements they have no control on remain sound of mind, some others at the contrary change drastically and become dangerous for the society. This may sound normal but in reality it makes a slight difference between cold blooded people and troubled ones. *Lord of the Flies* written by the great British novelist William Golding is a dystopian novel that explores the universe of a group of British young boys whose plane crashed by accident on a desert land over the pacific.

First published in 1954 by Faber and Faber Limited, the story narrated in the novel takes place during the period of the Second World War (1939-1945). Through the novel, William Golding exposes the weakness of a childish society built upon the standard modal. This society built by children failed to remain strong as a single entity and fall apart in violent tribal wars. The current edition subject of this dissertation comprises 288 pages, subdivided in 12 chapters. Globally the novel has tackled many issues worthwhile to be raised such as: social derision, war, anarchy, violence and ultimately man's inherent evil.

This dissertation focus is the **impact of environment on human psychology** in the novel *Lord of the Flies* by William Golding. In that framework, it states the impact of environment and portrays it upon human psychology through the traits to the personality of characters depicted in the novel. It makes as well a critical analysis of **environment impact on human psychology** in the novel. This dissertation is organized in three chapters: Chapter one makes an overall introduction to the study; Chapter two presents a general overview on the novel; and finally Chapter three finally is dedicated to an analysis on the novel through an exploration of environment impact on human psychology, a critical analysis of it and lastly the presentation of some perspectives to the study.

### I- INTRODUCTION TO THE STUDY

This section of the dissertation introduces the research work on the novel *Lord of the Flies*. In a global manner it presents the content of the dissertation by stating the following parameters:

#### 1-1- Problem Statement

This research work aims to substantiate a clear correlation existing between psychological changes and the influence exercised by the different elements people has no control on meant here by the term **environment**. The different scenes of violence,



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savagery and murders orchestrated in the novel raises makes wonder how children can abandon their innocence and revert to primitivism.

### 1-2- Purpose of the Study

The reasons leading to the choice of such topic are personal, social and academics. The present work calls the awareness of readers on how external and internal elements they have not compulsory control on affect their psychology and alter their lives for the better and for the worst. So, the purpose here in general is to help actors at different levels to perceive in a realistic way the impact exercised by environment on human psychology.

### 1-3 Significance of the Study

This research work arose from a willingness to study more the psychological matters pointed out by William Golding in the novel. Throughout *Lord of the Flies*, William Golding has endlessly figured out the way children at the base innocent plunged in a nameless savagery. This research work may help at ceasing more the reality pictured in the novel.

### 1-4 Hypothesis of the Study

In the core of this dissertation, two hypotheses have been developed. The very first materializes human beings here as products of external conditions influenced by the environment. And the second one defines human beings as the sum of their inner state, then made up since the base of evil pulses.

### 1-5 Limitation to the Study

This dissertation is only focused on establishing a relationship between psychological changes and the external and internal elements constituting environment in general. Still there are many other aspects worthwhile to be raised apart the one concerning this study.

### 1-6 Literature Review

This research work has to deal with the dystopian genre. In the literary context **dystopian literature** is a form of speculative fiction that figures as a response to utopian literature. It pictures a utopian society in which things have gone wrong. Some other authors and literary works have treated similarly a theme reliable to my research work. *Greybeard* by Brian W. Aldiss (1964) in which the future has been destroyed by an 'accident' that sterilized its males, leaving an aging and childless population to slowly die out. *A Boy and His Dog* (1969) by Harlan Ellison a dystopian novel in which the dog, named Blood is telepathic. The boy, Vic, has a mean streak that would put any of the *Lord of the Flies* kids to shame. Another major dystopian work is *Never Let Me Go* (2005) by Kazuo Ishiguro easily as dark as *Lord of the Flies*. *Never Let Me Go* hits its readers with some very unsettling sci-fi twists, though the slow way in which they're unrolled makes them feel more ominous than shocking. In Orson Scott Card's *Ender's Game* the protagonist Ender was only allowed to be born because the government needs him to be the destroyer of an entire race of aliens. Like William Golding masterpiece these gripping novels explore the thin line between human and savage.

### 1-7 Research Methodology

This dissertation work is an exploratory research that has been carried out in order to make a decryption of the impact of environment on human psychology in the novel *Lord of the Flies*. In order to achieve that goal, the collection and analysis of only data to get full information on the novel was a focus point. As well, a literary study and some analysis based upon the novel were of paramount importance. Throughout this work, the use of **Psychoanalytic criticism**, a form of literary criticism that uses some of the techniques of psychoanalysis in the interpretation of literature was helpful in order to cease the novel.

### 1-8 Conceptual Clarification

As the topic of the research work cannot be well understood if the keywords like '**Environment**' and '**Human Psychology**' are not clarified:

- Oxford Languages 10<sup>th</sup> edition defines the term '**Environment**' as the surroundings or conditions in which a person, animal, or plant operates. Some others synonyms of the term 'Environment' are 'Habitat' or 'Territory'. In our context here, the term '**Environment**' refers to all the elements people has no control on and that affect their own life and its wellbeing.
- '**Human Psychology**' is a compound work, the term '**Psychology**' is defined as the mental characteristics or attitude of a group of person. It is synonym of 'mindset' or 'mind'. Put in our context here the term 'Human' combined with the term 'Psychology' means simply human state of mind

## II GENERAL OVERVIEW ON THE NOVEL

This section of the dissertation presents the novel itself including the characters and their relationship. Ultimately, it presents the general results of the analysis performed in the context of the study. Objectively, in this section Psychoanalytic criticism has been of paramount importance. It is a form of literary criticism that uses some of the techniques of psychoanalysis in the interpretation of literature. Indeed, the use of Psychoanalytic criticism has been of great importance because of the nature of

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the topic that deals with matters relevant from psychology. And its use taken into account helps to examine the core of psychological troubles raised in the novel by investigating the interactions of conscious and unconscious elements in the mind as follows:

### 2-1 The Unconscious Mind:

The unconscious mind by definition is a reservoir of feelings, thoughts, urges, and memories that stand outside of our conscious awareness. It contains contents that are unacceptable or unpleasant, such as feelings of pain, anxiety, anger, sadness or conflict. A typical example of the unconscious mind materialization is what is commonly known as a Freudian slip<sup>1</sup>. It is a verbal or memory mistake revealing secret thoughts and feelings that people hold deep down them. For instance, a husband calling the name of his spouse by his ex's name or even a child calling accidentally his teacher 'Mum'.

These examples of common mistakes are believed to be linked to the unconscious mind. Generally, the slip shows the sudden intrusion of unconscious thoughts and feelings recalled into the conscious mind, this often due to unresolved or repressed feelings. According to Freudian interpretation, thoughts as well as emotions outside of our awareness continue impact our behaviors.

### 2-2 The Preconscious Mind:

The preconscious consists of anything that could potentially be brought into the conscious mind. The contents of the unconscious mind enclose all the feelings and thoughts we are actually aware of, and ejected into the conscious awareness. The preconscious acts as well as something of a guard, controlling the information entering into the consciousness. For example, someone may see or hear something that makes him remember something he had planned to do before, or even someone else having a sensation of Deja-vu in a given situation. This is basically how the preconscious acts; it recalls to mind in some specific situation thoughts we are not actively thinking of. Some sources place the preconscious as a part of the mind separated from the unconscious. This interpretation of Freudian theory makes a clear distinction between the parts of the mind we can have access to or not.

### 2-3 The Conscious Mind:

The conscious mind also known as **self-awareness**<sup>2</sup> contains all of the thoughts, memories, feelings of which we are aware of at a given moment. This is the aspect of our mental processing that we can think and talk about rationally. Through the conscious mind, we are consciously aware of ourselves in the immediate environment as a being personally separated from others and having a different personality. There, is the mind of our five physical senses enabling us to consciously experience the outside physical world as unique master of our experiences. Moreover, the conscious mind is the seat of our ability to reason and make the difference between good and evil.

Whenever, even if human mind is divided into separate parts, there do form within them a single and unique puzzle. The unconscious, the preconscious and the conscious mind whether separated or not or can work together and make decisions about our life. Furthermore, Sigmund Freud has divided as well the human psyche into **Id**, **Superego**, and **Ego** also called **tripartite**

### 2-4 Id :

The id is the personality structure that operates in the unconscious mind which means it stands outside of all consciousness. Based on the pleasure principle that demands immediate gratification regardless to the consequences, the id is often pictured as a little devil whispering on one's shoulder. He is selfish, impulsive, and instinctual and refers to non-conscious mindset that strives to satisfy basic needs such as sex, eating and aggression.

### 2-5 Superego:

The Superego is the personality structure mostly unconscious and commonly pictured as the little angel smiling on one's shoulder. He exists in the three levels of consciousness and is like the internal judge based on the moral principle. He tells what is right or wrong, what is socially acceptable or not and conform to the rules and norms prescribed by society. The ability to think logically is a main characteristic of the superego. Particularly moral precepts are the social fundamentals that enable the individual to do what is right from wrong and to use his knowledge to solve problems instead of using brutal force.

### 2-6 Ego:

The ego is the personality structure that operates in the preconscious and the conscious mind. Simply put the ego is what one thinks he is, it has the ability to make decisions about our lives.

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<sup>1</sup> From <https://www.verywellmind.com>

<sup>2</sup> From <https://www.verywellmind.com>

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### III. DISCUSSION AND PERSPECTIVES

This last section of the research work makes an analysis on the novel by exploring environment impact on human psychology, it makes a critical analysis of it and lastly presents some perspectives and recommendations to the study.

#### 3-1 Exploration of Environment Impact on Human Psychology:

The decryption of environment impact on human psychology in *Lord of the Flies* implies in first place an exploration of it. The novel opens with the meeting on the beach between two protagonists Ralph and Piggy. The two boys are the lucky survivors of a plane crash, and yielded to the fact that they were abandoned on a desert land with no adults around. Boys were at majority children and as they met, they agreed to choose Ralph as their leader. Ralph as elected leader has appointed immediately the named Jack Merridew as head of hunters and engaged an expeditionary corpse to inquire about the nature of the land they grounded on. By the time the expeditionary corpse finished sounding the island, they went back to hold another meeting with the rest of the community and there raised first the idea of the beast, a snake thing living in the woods. To that, children were preparing to defend themselves and kill in case of danger. Face to the wildness of this island, they were ready to take drastic measures.

Later in the novel after building with difficulties a fire signal by the mountain, Jack and his hunters in charge of watching it, let it burn out and went for hunting. As they were absent, a ship passing by didn't notice their presence. Back from hunting, Jack was enjoying the savage mutilation of a pig. 'I cut the pig's throat. [...] you should have seen blood' (Pages 87, 88) were the only words he was out loud shouting. And enraged after Ralph's sermon, 'he took a step, and able at last to hit someone, stuck his fist into Piggy's stomach' and viciously shouted out loud 'you would, would you? Fatty' (Page 89). This scene demonstrates that the character Jack in the wild nature surrounding him is progressively changing and letting violence overcome his being. He is trying with hostility to impose himself as dominant male, coming then straight into resonance with the wildness of his environment. By the way, this rude fervor emanating from Jack spread like a virus upon all the boys, and very soon, they were going to deny their humanity and revert 'to darkness and desperate enterprise' (P 151)

Further in the novel as the conflicting atmosphere was thickening, the community built by the boys folded and broke into two opposed tribes. By one side Ralph and some children faithful to him and on the other Jack with his troop of hunters. Actually this was just the beginning of boy's descent into hell.

Indeed, a horrible nightmare which innocent boys are the artisans has been orchestrated. Haunted by a morbid dread, boys mistook their mate Simon for the terrifying beast they all fear and stabbed him to death. Savagely mutilated, 'Simon's dead body moved out towards the open sea' (P 190). This tragic event depicts truly to which viciousness and despair children have been brought, the wildness in which they vegetate, added to their fear of the unknown turns progressively their behavior into something primitive. Their environment corrupts them and transforms them into savage beast devoid of humanity.

After this event, some other similar cases occurred in the novel. With no single regret to Simon's memory, a squad of savages headed by Jack held a violent raid against Ralph's lot on the beach platform<sup>3</sup> in order to steal from them fire. And as an action calls compulsory for a reaction, after the raid, galvanized by Piggy's words, Ralph with the twin's boys Sam and Eric as well as Piggy went at the savage's tribe's headquarters. They went there to ask for Piggy's glasses pacifically, but Piggy found an awful end. Indeed, Roger, a sociopath lieutenant of Jack rolled a monstrous rock that 'struck a glancing blow from chin to knee;' and 'Piggy, saying nothing with no time for even a grunt, travelled through the air sideways from the rock, turning over as he went.[...] His head opened and stuff came out and turned red' ( Pages 222, 223). Clearly here, this macabre scene demonstrates that boys with no doubts have reverted completely to savagery and deny the little part of humanity remaining in them. Orchestrating this sang froid murder emanates from a conscious will to kill for satisfying a blood thirst. Thus boys accept being the wild animals living in harmony with the threatening environment surrounding them.

Another case of violence act occurred at last in the novel. The tribe of savages on Jack's orders engaged a terrible hunt to track down and kill Ralph. They launched themselves after Ralph, willing to exterminate him ruthlessly and impale his head as trophy on a stick sharpened at both ends. Consequently, to get him captured, 'They smoked him out and set the island on fire' (P 242) destroying the wildlife and the flora with no regard to the material losses. This last act from boys demonstrates that they assimilated themselves completely to their environment, they are now vectors of wickedness and violence. Indeed, affected by the wild living conditions, they have transformed themselves finally into savage beast without humanity so as to impose themselves.

Through the novel many other scenes of violence have been orchestrated and result at majority from the influence exercised by the environment on human psychology. Children from the very beginning were not described to be beings filled with bitterness

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<sup>3</sup> From <https://www.sparknotes.com>

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and having insatiable appetite towards violence. But throughout the novel, as they tried to survive and build a community in the savage nature surrounding them, there started troubles. Putting unknowingly their humanity aside they have left themselves shaped by the wildness present in their immediate environment. Thus, an unavoidable descent into violence have been engaged and primitivism has started. Throughout the entire novel, the violence scenes orchestrated do demonstrate in a realistic way the impact exercised by environment on human psychology in general and particularly on children as puppet of this dreadful fact.

### 3-2 Critical analysis of Environment Impact on Human Psychology

*Lord of the Flies* by William Golding is mainly about struggle for power and savagery, it is one of the most celebrated and largely read of modern classics. In a dystopian style it exposes the way children at the base innocent put their humanity aside and turned to a nameless violence. From the story related in *Lord of the Flies*, we may perceive in one aspect mankind an evil and savage specie defined by the environment. In this common-sense, the main question to be asked is 'How does environment influence human psychology and bring to extreme extents?'. To provide answer to this question, based on the behavioral changes of characters in the novel, we will have to picture the environment as a whole dividable into two complementary portion. An internal part enclosing human basic instincts shaping facetiousness and an external part enshrining the outside conditions impacting human mind undeniably.

In a special writing style, degenerateness has been introduced in the novel with the raising of the idea of the 'beast, the snake-like living in the woods' ( P 46 ), or the creature sighted on the mountain top . This brought troubles in the peaceful life and civility boys were trying to maintain. Driven by their fear of the unknown, children killed their mate Simon they believed to be the famous terrifying beast. Curiously, some seemingly scenes of horror like this have been orchestrated throughout the novel. Another tragedy was the murder of another boy named 'Piggy', the fat boy, object of social derision. He died smashed by a monstrous rock rolled over him by Roger, a sociopath displaying cruelty toward his peers. Based on the characters Jack and Roger, we may perceive some drastic behavioral changes and a sudden rise of violence in children. Boy's appetite toward violence grows progressively, it becomes the systematic response to solve problems. We can perceive this as an important matter resulting from the troubled inner condition of boys. Indeed, boys are driven by their primitive instincts and act to express their resentment. Through bloody massacre and sang froid murder, they are liberated from self-consciousness as well as any kind of humanity. Empty of the ability of making the difference between good and evil, children ineluctably are given to descend below the level of beast and plunge in savagery. To be brought to such extent, people definitely wicked, evil, savage by nature and driven by their basic instincts. Human beings do have a sort of inner peace that disappears automatically when primitive instinct takes control over the good sense.

Another way of apprehending William Golding conception in *Lord of the Flies* is to not only look at human beings as just savage specie by nature but also as creature of the outside conditions. James Allen's *As A Man Thinketh* underlines it 'We are buffeted with circumstances so long as we believe ourselves to be the creature of outside conditions'. As no one by himself is compulsory wicked by nature, the external conditions are to be considered notably in human psychological and behavioral changes. Indeed, in the novel one could remark that children after the plane crash have been against their will put in an environment where wildness was naturally instilled at the base. The character Ralph is a typical case we may point as example out. Ralph as elected leader of the group of boys, has not been mentioned in the novel as a violent being dangerous for the wellbeing of his peers. But as his surrounding started revealing dangers, his behavior started taking murderous significance. Notably he fought roughly against Jack during their altercation at the castle rocks, and during the track engaged against him he has stabbed to death with a spear one of his assaulters. Clearly here, because of the barbarism spreading from his environment, he had no choice left that transforming himself into a savage being. In sum we may perceive clearly here a sudden behavioral change and a return to vulgarity. Children in a hostile and savage environment different from the one they were accustomed were given since the beginning to be savage and hostile creatures.

Basically, the outside conditions have impacted directly children's psychology and put them in the state of wild creatures struggling in a wilder environment. The result was undeniably a return to a primitive state. We should point out that all children at the very beginning were living in a certain harmony and cooperating in order to survive by maintaining civilization. But at a certain moment as the isle their inhabited revealed some dangers, they turned to violence. and created a savage tribe in order to protect themselves in a certain way against the 'beast'. Even if the existence of the famous beast was a product of their imagination. Children were no more master of themselves but rather controlled by this environment they were living in.

Human psychology is made in the way that it's influenced immediately by every single condition, moreover the environment does impact it doubly and in two different ways. An internal part enclosing human basic instincts shapes facetiousness and an external part enshrining the outside conditions impacts human mind.

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### 3-3 Perspectives

On a professional point of view, be shared between the desire of responding to one's primitive pulses in one hand and on the other remaining sound minded following moral rules, may be a factor a factor of productivity or not at work. Indeed, be responding to primitive pulses will lead a person to act just impulsively and breaking with no consideration the rules guaranteeing the good progress of the work. On the social aspect environment impact on human psychology contributes to make diversity. When some people takes profit from the environment for their personal growth, some others are affected to the extents of becoming social nuisance for their peers particularly and for the whole society in general. As far as the economic domain is concerned as far as the economic domain is concerned leaders may follow their basic pulses and favor then serving selfish and unwholesome purposes. Consequently, they will turn away from global objectives of development and embezzle public funds leading ineluctably to flight of capital, indebtedness growth, and bankruptcy because of financial insecurity. Then on the principle of cause and effect, the whole economic system will collapse.

### 3-4 Recommendations

Managing with troubles resulting from environmental influence is a hard task but not impossible. The first action to take is to try leaning on one's basic pulses by practicing relaxing activities in order to get rid of disturbances. The second action is to get in an association or community promoting personal development, this because social groups can enable the individual to emancipate himself and find inner peace. And the last step is to consult a psychologist in order to be put under appropriate medical process.

### CONCLUSION

*Lord of the Flies* by William Golding is a dystopian novel that depicts not just psychological disorders but as well the extreme extents to which human beings are brought when there are subjected to deal with good and evil at the same time. My dissertation is concerned with showing the impact exercised by environment on human psychology in the novel and the troubles resulting from that. To achieve this objective, we adopted an exploratory research methodology and a literature research has been carried out in order to gather full information on the author but also the novel. The use of psychoanalytic analysis helped us in exploring better and analyzing critically the novel.

After exploring and analyzing critically the novel, I got to the fact that environment does influence human psychology internally and externally by playing on the structures to the personality (**Id**, **Superego**, **Ego**). Through the study of environment impact on human psychology in the novel we apprehend that human beings are highly influenced by the environment either they want or not. Subjected to this influence human beings do react unpredictably, either expressing drastic changes by reverting to savagery and characterized violence or else at the contrary remaining master of themselves. In sum environmental influence on human psychology is itself the essence of behavioral diversity among human beings.

### WEBOGRAPHY

- 1) James, Allen. *As A Man Thinketh* USA: TARCHER/ PENGUIN Inc.1902
- 2) William, Golding. *Lord of the Flies*. London: Faber and Faber Limited. 1954

### SITOGRAPHY

- 1) <https://www.sparknotes.com> Consulted March 30,2022 at 21:24
- 2) <https://theportalist-com.cdn.ampproject.org/> Consulted April 05,2022 at 20:29
- 3) <https://www.oxforddictionaryonline.com> consulted April 05, 2022 at 23:40
- 4) <https://www.britannica.com> Consulted April 06, 2022 at 09:38
- 5) <https://www.memoireonline.com> Consulted April 21, 2022 at 08:30
- 6) <https://www.biography.com> Consulted April 23, 2022 at 09:26
- 7) <https://www.nobelprize.org> Consulted April 24, 2022 at 13:2
- 8) <https://www.famousauthors.org> Consulted April 24, 2022 at 14:30
- 9) <https://william-golding.co.uk/> Consulted April 24, 2022 at 16:07
- 10) <https://www.gradesaver.com> Consulted April 25, 2022 at 09:43
- 11) <https://www.cliffsnotes.com> Consulted April 25, 2022 at 11:19
- 12) <https://en.m.wikipedia.org> Consulted April 25, 2022 at 14: 57
- 13) <https://www.bookrags.com> , Consulted April 26, 2022 at 11: 15
- 14) <https://www.verywellmind.com> Consulted April 28, 2022 at 17:36
- 15) <https://study.com/> Consulted April 28, 2022 at 18:26

## Decrypting Environmental Impact on Human Psychology in William Golding's Lord of the Flies

16) <https://www.google.com> Consulted April 28, 2022 at 22:14

17) <https://www.uky.edu/> Consulted April 21, 2022 May at 09:21



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## Commentary, Margin and Notes On The Work “Al-Manzuma”



Jaloliddin Kh. Khamrokulov<sup>1</sup>

<sup>1</sup>Researcher of the International Islamic Academy of Uzbekistan, Uzbekistan

**ABSTRACT:** The development of hadith science in the 16th and 17th centuries led to an increase in the number of rich heritages of hadith scholars. Among these, it is appropriate to mention Toho Bayquni’s poem “Manzumatul-Bayquniya”. Despite the fact that his poetic text is short, it has attracted the attention of scholars of hadith until now. In particular, the number of comments written on the poem is close to a hundred, which indicates that the author is at a high level in the science of hadith. Finding the manuscript of the comments in the world’s manuscript funds, the scientific legacy of the author will give high spirituality to the next generations.

**KEYWORDS:** Egypt, jurisprudence, muhaddis, hadith scholars, “Doru-r-risola”, Daghestan, Qur’an and Sunnah.

### INTRODUCTION

Although the school of jurisprudence of the author of the work, Toho Bayquni, is Shafi’i, scholars of other schools of thought or those without schools of thought are also found among the commentators. There is information that the author himself commented on the poem for the first time. Some sources refer to the author’s commentary as “Sharhu Manzumatul-Bayquniya (Commentary on the Bayquniya Manzuma)”. Another review is published by the Daghestan publishing house “Doru-r-risola”. No publication date listed. Since the name of the author was not recorded, it was not determined that the work belonged to him. Some researchers say that the work was commented on in 1953 and the commentator did not mention his name. The words of this commentary are light, so they attract the reader, especially from the first page to the twentieth page of the book, the publisher gives the hadith and rare information about it. The work consists of 232 pages and is printed with medium quality [1]. It can be found on e-book shelves.

### THE MAIN FINDINGS AND RESULTS

It is evident from the manuscript copies that more attention has been paid to the verse in the course of scientific research since the 18th century. Allama Muhammad ibn Abd al-Baqi Zurqani Maliki (d. 1122/1710) also wrote a commentary entitled “Sharhu-Zurqani ala-l-manzumati-l-Bayquniya fi-l-mustalah (Zurqani’s Commentary on the Bayquniya Manzuma in the Science of Hadith)”. The work consists of 104 pages. This commentary was published in 108 pages by the Daru-l-Arqam printing house in Damascus in 1418 AH with the scientific advice and support of Abdullah bin Abdulaziz Zahim (1350/1931-1423/2002). In 2013, the Egyptian publishing house “Doru-l-Fazila” was studied and republished by a researcher named Abdurahim Ali Ashraf. This edition contains corrections to previous editions. Also, the analysis and investigation of the hadiths in the work is observed. The researcher mentions that he used four works during his studies. Two of these are manuscript sources and are illustrative of the works preserved in the Egyptian “Azhariya” manuscript fund. They are currently available in the manuscript fund of the University of Saudi Arabia named “Saud”. The information from the first manuscript is denoted by the letter “أ” (alif). And to the one taken from the second manuscript, he cites the letter “ب” (ba). The third copy is the first printed edition. It was published by Umar Husayn Hashshab in the “Khayriya” school in Egypt in 1324 AH. “Sharhu-l-allomati-l-muhaqqiq sayyid Muhammad Zurqani ala-l-manzumati-l-musammam bi-l-Bayquniyati fi mustalahi-l-hadisi va ma’ahu fi-s-sulbi Hoshiyatu-l-allomati-sh- Shaykh Atiyatu-l-Ajhuri ala-sh-sharhi-l-mazkuri mafsulan baynahuma bi tabal (Commentary on the poem Bayquniyyah by the researcher Sayyid Muhammad Zurqani on the establishment of hadith science, the next work is the margin extended by Allama Sheikh Atiya Ajhuri to this commentary with a table). He added the letter “خ” (xo) to the information he obtained using this work. The fourth one will be published in 1368 AH by the publishing house “Doru ihyoi-l-kutubi-l-arabiyati” under the leadership of Isa Babi Halabi and Umar Husayn Hashshab in Egypt. Information obtained from this work is marked with the letter “م” (mim). This work consists of 239 pages, the first thirty pages of which contain studies and interpretations of hadith science and some pictures from

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manuscript copies of the work. Atiyatullah ibn Atiyatu-l-Burhani Shofei Ajhuri (d. 1190/1776) dated this work of Zurqani in 1345 AH. The Egyptian school “Azhari” republishes the text of Allama Ajhuri with Zurqani’s commentary. As already mentioned, hoshiya helped to illuminate the poetic styles, starting with the term hadith in the poem. The work was re-interpreted by scholar Abu Abdurrahman Salah Muhammad Uwayza in 1425 AH. All hadiths mentioned in it are tahrij. The work will be published by “Doru-l-kutubi-l-ilmiya” publishing house of Beirut. This edition of his consists of thirty-two parts and 232 pages. Historian Khayriddin Zirikli (1310/1893-1396/1976) mentions that Atiyatullah ibn Atiyatul Burhani wrote a margin to Shofei’s commentary on Zurqani in his collection of tabaqat called “Al-A’lam”. This frame has been published several times. The first one was published by the “Darul-Qutubil-Arabiyyatil-Kubro” printing house in Egypt in 1333 AH, the second one was published in 1345 AH by the Egyptian “Azhariya” printing house, and the third one was published by the Egyptian “Mustafa Babii Halabi” printing house in 1368 AH. It consists of 87 pages [2].

The work “Safwatu-l-mulahi bi sharhi manzumati-l-Bayquniya fi fanni-l-mustalah (Pure thoughts on the Bayquniya manzuma in the science of Hadith)” was written by Muhammad ibn Muhammad ibn Ahmad Badiri Dimiyoti (d. 1140/1728). He was known as “Ibnu-l-mayyit” (son of the dead). The work was published for the first time in Cairo printing house “Al-Maktabatu-l-islamiyyi li-ihyoi-t-turosi” with 192 pages. It is verified by Abu Malik Muhammad ibn Hamid ibn Abd al-Wahhab. In his research, Abu Malik Muhammad mentions that he relied on three manuscripts. Abdulhai Kattani (1302/1883-1382/1962) says about this commentary: “This work is notable among the commentaries written on the poem of Bayquniya” [3]. This work will be republished in 2008 by the publishing house “Dorun-navodir” in cooperation with Beirut and Damascus. A researcher named Nuriddin Talib is working on the research and analysis of this work. The work talks about the poet's life and work. Also, the researcher’s scientific work dedicated to the work, that is, how he distributed the work, and its effects and benefits, will be briefly discussed. The aspect of the work that differs from other reviews has been studied in two ways. First, the poet interpreted the texts of the work in a way that was not easy for the reader. The second is that this interpretation is based on Imam Qastalani’s (851/1448-923/1517) “Mashori'u-l-Hunafa (Sharia of the Righteous)”, Abdullah Shanshuri’s (935/1528-999/1591) “Ad-Durratu-l-muziyatu sharhu-l- Fariziya (Commentary on the work of Fariziya with the title of shining dur)” and Ramli’s (914/1004-1508/1596) “Sharhu-l-waraqot (Commentary of Waraqot)” brought it to a high level [4. 25]. When studying the works, researchers paid attention to the style in which they were written. In the course of studies, it became known that Allama Muhammad ibn Muhammad ibn Ahmad Badiri interpreted this commentary in the style of Shaykh-ul-Islam Zakariyya Ansari’s (824/926-1421/1520) work “Fathul-Baqi sharhu alfiyatul-Iraqi”. In some places he quoted the works he received. He used an easy and light style when it was necessary to give an example in some phrases. However, in some places there are terms that are not explained. In interpreting the work, he relied on four works. Of these; “Fathu-l-Baqi sharhu alfiyatul-Iraqi” by Shaykh-l-Islam Zakariya Ansari (824/926-1421/1520), “Al-Ghayatu fi sharhu-l-Iraqi” by Imam Sakhawi (831/902-1427/1497) Hidayati fi ilm-ir-riwayati li-l-Jazari (commentary on Imam Jazari’s work of guidance on the science of narration called Maqsad) and “Nuzhatu-n-nazari fi commentary Nuxbati-l- fikar” (Commentary on the work of Selected Thoughts entitled “Walking”) are works. In addition, he makes full use of works on vocabulary and lexicology [4. 27].

“Fathu-l-Qadiri-l-Mu’ini-l-Mughis bisharhi manzumati-l-Bayquniyyi fi ilmi-l-hadith” written by Abdul Qadir ibn Jalaluddin Al-Malihi (d. 1184/1770) the help of Almighty God for everything) was published by the publishing houses “Daro-l-kutubi-l-ilmiya” of Beirut and “Daro Rayati-l-islamiya” of Riyaz. To date, the work has been published in dozens of editions. The first copy was published in 2013. It consists of 456 pages and one volume.

Abdullah ibn Ali ibn Abdurrahman Suwaydon Damillijiy Uzbekiy Misri (d. 1234/1819) comments on the poem of Imam Baiquni “Al-Kawakibu-n-Nuronia (The Shining Stars)”. It was published by the General Board in the Alexandria Review in 1240 AH. He works in the school of Allama Shofei. He was considered knowledgeable in fields such as method, hadith, preacher, logic, poetry and literature. He works in Sufism in the manner of Shozali. He was called “Suvaydon” and “Damillijiy” among the people. In some sources, “Al-Kawakibu-n-Nuronia” is also cited as unpublished [5]. There are about twenty works of Alloma in addition to his commentary on Baykuniya’s poem. Of these; “Arba’una hadisan fi tarkiz-zulmi (Forty hadiths to abandon oppression)”. A handwritten copy of the author of the work has reached us. Allama’s work is called “Arba’una hadisan min arbi’ina kitaban min kutubi-l-hadisi li arba’ina shaykhan mina-l-muhaddisin (Forty hadiths from forty books of forty muhadiths)”, which was also completed by the author himself. In addition, there are about twenty scientific heritages [6].

Muhammad ibn Khalifa Nabahani Maliki (d. 1369/1950) wrote a commentary entitled “An-Nukhbatu-n-Nabahani bi sharhi-l-manzumati-l-Bayquniya (Khalifa Nabahani’s thoughts on the commentary of Bayquniya)”. The work was published in Egypt in the printing house “Matbaatu-t-taqaddumi-l-ilmiya” in 1345 Hijri. It was also published in 1441 AH in Cairo by Sayyid Ibn Abbas Julaymi with 156 pages. This work was published in Makkah and Riyadh in 1417 AH by the library of Nazzor ibn Mustafa Boz [7. 224]. Published in 1416/1995 by the Al-Kutubu-s-Saqafiya institution in Beirut. In 2001, a 96-page book was published by the Beirut publishing house “Daru-l-kutubi-l-ilmiya” with the research of researcher Muhammad Abdulaziz Khalidi.



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Hasan ibn Muhammad Mashshot Maliki (d. 1399/1979) completed a commentary entitled “At-Taqrirotu-s-sunniyatu fi sharhi-l-manzumati-l-Bayquniyati (Comments on Sunnah to the Bayquniyya Manzuma)”. In some sources, the name “At-Taqrirotu-s-sunniyatu” is replaced by “At-Taqrirotu-l-Muhammadiya”. The work was written briefly and published several times. It will be published in Jeddah in 1392 AH. The fourth edition was published in 1417/1996, and the twelfth edition was published in Cairo in 1395 AH by “Madaniyya” printing house, consisting of 30 pages. The work will be checked again by researcher Fawwod Ahmad Zamarli Taroblisi. It consists of 154 pages and was published in 1987 at the “Doru-l-kitabi-l-alamiya” printing house in Beirut [7. 224].

Commentary by Sheikh Abdullah Sirajiddin (1342/1422-1924/2002) under the name “Sharhu-l-manzumati-l-Bayquniya fi mustahi-l-hadith (Commentary on the Bayquniya Manzuma on the Science of Hadith)”. The work will be published by “Darul-Falah” publishing house in Aleppo with 218 pages. Allama completed this commentary on the 23rd of Dhul-Hijjah, 1372 AH. He noted this at the end of the work [7. 224]. The work was received positively by the readers, and even now it is included in the textbooks of hadith studies in Islamic educational institutions in some countries. The difference of the work from other commentaries is that the commentator is one of the modern scholars and there is permission from the author to some commentators. Currently, this commentary occupies an important place in the science of hadith. Therefore, the work was published by several publishing houses around the world.

Sa’d ibn Umar ibn Sa’id Futi Tujani (b. 1328/1910) wrote a commentary entitled “At-Tawzihotu-l-basitatu ala-l-manzumati-l-Bayquniyati (Extensive information about the Bayquniyya poem)”. The work was published by the “Doru-t-Tujani” printing house of Tunisia in 1400 AH. It has 51 pages. According to some sources, the publication of this review is currently not in progress [7. 225].

Abdulkarim ibn Abdullah Khazir wrote a commentary entitled “Al-Bastu-l-mustadiru fi sharhi manzumati-l-Bayquniya (A great measure based on the commentary of Bayquniya’s poem)”. Currently, readers use the work through the Internet. It was revised by the researcher Abu Fihri Asari Sa’id Shu’ayb Abdullah Muhammad. First published in 2011 with 128 pages by “Doru-l-kutubi-l-ilmiya” publishing house in Beirut. Shorih uses a unique style in commenting. He gives some sentences in the form of questions and answers. It also analyzes information about the hadith spread on social networks and audio tapes. Shorih studied the poem mainly in four parts. The first pages of the work include information about the Qur’an and Sunnah. In particular, it gives the order of types of circumcision. However, it is not easy for people of every age to remember this information. In particular, he studied some of the objections raised by students of his time. Including; It emphasizes the easy way to memorize the hadith students who have difficulty to retain it due to the large amount of information. Two versions of the work are currently available: a desktop version and a PDF version printed by a printer [7. 1-17].

Shaykh Mustafa Muhammad ibn Salama writes a commentary entitled “Saqlu-l-afhomi-l-jaliyati bi sharhi-l-manzumati-l-Bayquniya (Polishing the priceless concepts in the Baiquniya poem)”. It was first published in 1412 AH with the permission of the Egyptian Council. It will be printed several times. The tenth edition was made in 2011. It is still being made available to readers. In the 2012 edition of Sharīh, the first pages of the work provide information about hadith and the science of hadith. It makes every student more motivated towards science. Including, 1. Obligation to follow the Prophet (s.a.v.). 2. Not receiving any information contrary to the evidence. 3. The level of circumcision in the eyes of God. 4. Be patient in learning. 5. Importance of isnad in hadith. 6. Ten basics in the introduction to the science of hadith. 7. First definitions of hadith science. Also, the author ends the work with eight stages and one conclusion.

Abu Umayr Majdi ibn Muhammad ibn Arafat Misri Asari’s work entitled “Atyaabu-l-minahi bi sharhi-l-manzumati-l-Bayquniyati fi ilmi-l-mutalahi (Pure gifts in the Bayquniyya verse on the science of Hadith)” is a commentary on the poem by the Egyptian Asari, published by the city of Cairo. published by Abdulmusawwir ibn Muhammad Abdullah. The second one was published in 1426 Hijri.

Abulhasan Mustafa ibn Ismail Sulayman Marabi’s commentary entitled “Al-Jawahiru-s-Sulaymaniya sharkhi manzumati-l-Bayquniya (The jewels of Sulayman in the interpretation of the Baiquniya manzuma)” was published by the “Darul-Kiyon” printing house of Riyadh city in 2006 on 408 pages. The author describes the methodology of the work as follows: “I think that this poem is suitable not only for elementary students who have entered the field of hadith, but also for advanced students. The commentary I wrote on the manzuma is the result of the beautiful sincerity of the owner of the manzuma” [8]. In the preface of the work, the commentator describes the science of hadith. Lists the factors that led to the creation of the book. In particular, he notes the two manuscripts that were the main basis for the writing of the book. The first is a manuscript called “Tazyilun wa takmilu sharhi-l-Bayquniya” stored under the number 5713 of the “Zahiriya” Manuscript Fund of Egypt. The second is an illustrated manuscript under the number 23649 of the Faisal Center for Islamic Research and Study Manuscripts Fund. The contribution of six scientists to the world view of the work increased its strength even more [9].

## Commentary, Margin and Notes on the Work "Al-Manzuma"

Abu Muaz Tariq ibn Awazallah ibn Muhammad (b. 1383/1963) writes a commentary on the poem. The commentary was published for the first time in 2009 by "Darul-mughni" publishing house in Riyaz city and it consists of 136 pages. The composition of the review was different. First the introduction is given, then the full text is given. After that, he went on to comment on the poem. Although this review is short, it covers every byte. Especially, with the sections named as "نكتة دقيقة", "تنبيهة", "تنبيهان", "فائدة", it attracts the reader and helps to learn the information in an easy way. The work ends with a concluding section [10].

The work "Al-Kawakibu-d-durriyatu ala shhari-l-manzumati-l-Bayqunia (The priceless stars in the poem of Bayquniya)" by Sulaiman ibn Khalid ibn Nasir Harabi is a commentary on the poem. The work was published in the year 2014 AD, 1435 Hijri, by the "Dorubni-Hazm" publishing house, with 212 pages, in one volume [11. 11]. This work is the first edition of the printing house. In the structure of the work, the full text of the preface and verse of Sulayman ibn Khalid ibn Nasir Harabi, the commentator of the work, is presented. Then the author of the poem briefly describes the life and work of Allama Bayquni [11. 9]. Commentary on the work, particularly the major prominent commentaries, is provided. From the eleventh page of the commentary, the aspects of the poem that are convenient for memorization and learning are studied separately. One of the currently popular methods of interpretation is to cite ten fundamental principles in each science. The reviewer also makes sufficient use of this style and dwells on it in three pages before the review [11. 15].

Khalid ibn Salih ibn Ibrahim Ghasn to Manzumatu-l-Bayquniyya "Sharhu-l-manzumati-l-Bayquniyati fi mustalahi ahli-hadisi wa-l-asari 'ala zawa'i manhaji-l-mutaqaddimina wa-l-tahriroti-l-muta'axxirina ( A commentary titled "Commentary on the Bayquniya Manzuma on the Istili of the People of Hadith and Works" was finished under the editorship of early scholars and prominent scholars. The work is one of the useful poems for students. Because it contains examples of each type of hadith science. He also mentions the terms of the hadith, the usual usages and the purposes of the interpretations of the muhaddith muhaddith. The work was completed by the commentator in 1434 AH. A review was written to it by Sultan ibn Fahd ibn Sulaiman Jardon in 1426 AH, in which the work is equal to the works that were the foundations of hadith studies several centuries ago. Because it is clear to everyone that the interpretations of hadiths written before were complicated. This essay and commentary will highlight and explain those works. Thirty-four stanzas are interpreted in a separate order. Some sources report that it was published three times. It is not known whether the printed edition is an electronic or original book [12].

Talqihu-l-fikar bi sharhi manzumati-l-asar (Arousing Thoughts in Manzuma) by Allama Ahmad ibn Muhammad Husaini Hamawi Hanafi (d. 1098/1687) is the first commentary written by a scholar of the Hanafi school. The work was published for the first time in 2009 by the "Darul-Minhoj" publishing house in cooperation with the states of Beirut and Riyadh. It will be revised by a researcher named Abdullah Sulaiman Atiq. The edition of the work is printed in high quality, it consists of 256 pages. Dr. Mohammad Abdurahman Shamila Ahdal of the University of Taif writes the foreword of the work. It focuses on the important role and virtue of hadith studies in Islam. Also, Allama Ahmad ibn Muhammad Husayni quotes from Hamawi Hanafi and his life and work. In particular, it tells about the teacher and students of Alloma, as well as the rich legacy he left behind. He also mentions that some of his teachers followed the Hanafi sect [13].

The work was published based on three manuscript copies. The name of the copyist of the first manuscript was Abdulmuhsin ibn Ali Hassani Qadiri, and it consisted of fifty pages and twenty-five lines. The copyist completed the work in Rabi'u-l-Awwal 1096 Hijri. Currently, it is stored in the Muhammad ibn Saud manuscripts fund under number 598. The information obtained from this manuscript is attached with the symbol of the letter "أ" (alif). The second, Arif Hikmat manuscript fund, is preserved under the number 80/160. It consists of fifty-one pages and twenty-three lines. The shooter was Abdulmuhsin ibn Ali Hassani Qadiri, and it was recorded that he finished at the beginning of the month of Rabi'ul-Awwal 1118 Hijri. The information obtained from this copy is marked with the letter "ب" (ba). The third one is stored in the Egyptian fund named "Doru-l-kutubu-l-misriya" under the number 906/1933. This copy consists of fifty-nine leaves and twenty-three lines. The copyist of this manuscript is not named. Information from this work is marked with the letter "ج" (jim) [14].

The work "As-Samsuniyatu fi shari-l-Bayquniya" belongs to the pen of Abu Abdullah Laysul Hayali, and it is published in the form of a complete book on the website "الألوكة". While commenting on the poem, Shorih prefers to compare it with other works, to give some quotations and arguments from the works of hadith science and tabaqat works. The structure of the commentary is presented in a simple and concise form. First, there is an introduction by the reviewer. Then the life and work of the author of the poem will be discussed. He cites the full text of Manzuma and then goes into his commentary. A notable feature of this work is that it fully cites the original source of each piece of information and openly quotes the comments. The commentator also mentions that he consulted forty-five religious works before completing the work.

Dr. Luqmanu-l-Hakim Indinusi Azhari is the author of the commentary on the work "Bulug'u-l-amniyati fi shharhi-l-manzumati-l-Bayquniya (Achieving safety during the interpretation of the Bayquniya manzuma)". The commentary was published in Cairo by "Doru-l-Basoir" publishing house in 160 pages. The second edition will be presented on the 17th day of Zulqada 1348 AH, 1930

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AD. It will be published in 1439/2018 with the highest quality. The unique aspect of the publication is that it has added the necessary hadith terms to each verse, separated them separately using a modern style, which made it even more convenient. He also gave examples of hadith and its sanads as an example for each verse [15]. “Al-Futuhotu-l-Wahhabiya bi shhari-l-Manzumati-l-Bayquniya (Complimentary opportunities in Bayquniya verse)”. This commentary is related to the poem of Allama Umar ibn Muhammad ibn Futuh Baiquni, which was commented by Muhammad Ahnosh Ghimari. The work was published for the first time in 2019 AD in the publishing house “Doru-n-Nur” in the city of Oman, Jordan. The work consists of 287 pages and represents the incomparable service of the author. Examples of the terms hadith and hadith are provided for each verse and clearly indicate their original sources. In the process of writing this work, the author referred to about two hundred sources related to the science of hadith. In the introduction to the work, the narrator briefly mentions the merits of the science of hadith, the honor of the muhaddis, the encouragement to persevere in the narration of hadith, the types of the science of hadith, the scholars who first wrote the works of hadith and their works [16].

From the comments on the composition of the work “Usasu-n-nazari fi ilmi-l-asar (Theoretical foundations of the work, i.e., the science of hadith)”. This is one of the last commentaries, written by Muhammad Mujir Khatib Hasani Damascus (b. 1390/1971) and published in Istanbul on 14 Shawwal 1441 AH. It was published in 2021 AD and 1442 Hijri with 112 pages in “Doru-s-Surayo” printing house. The commenting author is one of the last scholars of the Levant, and is currently engaged in scientific work in Turkey. Allama was given permission for several works on hadith and hadith science. In particular, he is the owner of the Ijaza family from the poets of Allama Manzuma Bayqunia to Imam Zurqani. Until now, Alloma has spread knowledge in seven places of religious learning in the world [17].

In his interpretation of the poem, he divides it into a prologue and six chapters. In the introduction, terms such as the science of hadith and usulu-l-hadith, and the author’s work are briefly discussed. The first chapter is the topic “Introduction to the textbook of hadith science”, in which the definition of sunnah or hadith according to muhaddis is given in the form of a table. Also, the Prophet (pbuh) talks about the main rules of narration of hadith by the Companions and its five types. He made a scientific trip to the science of hadith and wrote the Sunnah and presented the main changes in the science of hadith [18]. The remaining chapters are devoted to the interpretation of the poem. At the same time, the author presents hadith terms in a tabular form in the work, creating an easy-to-understand style. On the back cover of the work, the publisher talks about the original purpose of the work. The methodological structure of the work is enriched with scientific information. In particular, comments are listed in order. This also depends on the skill of the publisher.

The work entitled “At-Tuhfatu-s-Sakhuniyya fi isohi ma’oni-l-Bayquniyati fi mustalahi-l-hadith (A hot gift to the interpretation of the meanings of Bayquniyya in the science of Hadith)” Abu Sulayman Mukhtar ibn Arabi ibn Ahmad ibn A’mar ibn Amir Jazairi Shinqiti (b. 1384/1964) as a commentary. Alloma is known as “Momin” among readers. The work was first prepared for publication by the author on May 18, 1998 in the state of Qatar. Later, the author corrects typographical and spelling errors and adds some additions to the work. It will be ready for the second edition on October 1, 2013 AD. The work will be published in 1435/2014 by “Dorubni Hazm” publishing house on 96 pages. It has been published twice so far. The first pages of the second edition are devoted to hadith and hadith science. It details the vocabulary and terminology of hadith and sunnah. In the interpretation of the text, comments and applications from reliable sources are noted.

Commentary “Sharhu-l-manzumatu-l-Bayquniyati fi mustalahi-l-hadith (Commentary on the Bayquniyyah verse in the study of Hadith science)” was written by Abu Hamid Muhammad Makkii ibn Ali Bitoviri (1274/1355), the work was researched by researcher Yasin Azkog’ Miknosi. is made and prepared for publication. In 2019, the first edition was published on 111 pages by the “Doru-l-hadisi-l-kitabiyati” printing house and reached the hands of readers [19]. The difference of the work from other reviews is that Yasin Azkog Miknosy compares two works. One is the commentary written by Allama Abu Hamid Muhammad Makkii ibn Ali Bitawiri (1274/1355) on Baiquni, and the other is “Sharhu-l-arjuzati-l-Bayquniyati fi aqsami” by Allama Abdullah ibn Muhammad Hashimi ibn Khazro Salawi (1260/1844-1324/1906). -l-hadith (Arjuza weighted commentary on Bayquniyya in Hadith distribution)” [20]. In the introduction to the work, the researcher beautifully describes the differences between the two works.

It is the work of Muhammad ibn Muhammad Mirghani Makkii Hanafi (d. 1268/1852) called “Latoifu minahi-l-mug’isi fi mustalahi-l-Bayquniyi fi-l-hadith (God’s grace that helps Baiquni’s knowledge of hadith regarding hadith)”, he is a Hanafi from the commentaries published in the sect. A modern edition of the work has not yet been found.

Sayyid Dawud ibn Salman ibn Mahmud ibn Ibrahim ibn Uthman ibn Avni ibn Muhammad ibn Ali ibn Abdulatif ibn Hasan Nasiri Tikriti (1273/1857-1360/1941) “Tuhfatu-l-ahbabi li-l-mustarshidina mina-t-tullabi-sh- Sharhu-l-manzumati-l-Bayquniyati fi-l-hadith (The Gift of Friends to Students Who Seek Guidance in the Commentary on the Bayquniyyah Manzuma on Hadith)”. The reason for writing a commentary on the manzuma was the scholar’s passion for the science of hadith and despite the brevity of this manzuma, it fully covered the concept of the science of hadith. The reason why Allama was called “Sayyid” was that his

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lineage reached Zaynu-l-Abidin Ali ibn Husayn ibn Ali (83/658-94/712). He got the “Nasiri” nisba because his great-grandfather was Amir Nasir. And Tirkat is the name of a city in Baghdad. Alloma was popularly known as “Mulla Dawood” [21].

A commentary entitled “Al-Matoyo-l-haniyatu, Taysiru fahmi-l-Bayquniya (A Guide to Facilitate the Understanding of Bayquniya)” was written by Abu Feruz Abdurrahman Sukayo from Indonesia. The book will be published by Feruz Daylami School in the city of Qedah in Malaysia on the 2nd zulqa of 1439 AH. The quality and layout of the previous edition was not as perfect. Abu Abdurrahman Adil ibn Ahmad ibn Ali writes a preface to the work. The first page of the work contains the initial pages of the manuscript copy. It consists of 30 chapters and 145 pages.

Alawi ibn Hamid ibn Hamid ibn Muhammad ibn Shihabiddin, a deputy teacher of the school specializing in hadith and hadith science in Hazramawt, writes a commentary on the Bayquniya manzuma called “Sharhu manzumati-l-Bayquniya”. The pamphlet will be prepared for publication in 2017 by the general committee in Khazramaut region. The publication is carried out by “Ibn Shihobiddin”, i.e., the publishing house owned by the author himself. It is prepared in a modern writing style and consists of 51 pages. It currently has an e-book form on social media and no book status [22].

In addition to commentaries and margins, talikhats were also written on Manzumatu-l-Bayquniya. One of them is a small preface of eleven pages, written by Abu Abdullah Arvan ibn Marsal Loshini. The Taliqat consists of twenty-seven sections, and the treatise is preceded by an introduction with two verses. Then the commentator dwells on the life of the author of the manzuma, and continues to comment on the manzuma.

“Ad-Duraru-l-Bahiyatu fi sharhi-l-manzumati-l-Bayquniya (Pure durs in Bayquniya verse)” belongs to the pen of muhaddis Badriddin Hasani Muhammad ibn Yusuf ibn Badriddin Moroccan Damascus Biybani Hasani (1268/1852-1354/1935). Alloma has been interested in religious science since his youth. In particular, he memorized Bayquniya’s verse at a young age. As he grew older, he mastered other sciences and began to write works. In the course of his work, he begins to interpret Bayquniya’s poem. For example, he says about this: “This is a commentary on the poem of Bayquniya, which I have written in order, about the science of hadith, in which I have explained to the reader the purpose and meanings of the poem, as well as the complicated sentences.” The following goals can be understood from the author’s work. The first is the definition of hadith science and its presentation of the most important istelaha to those who are new to hadith science. The second is to study the text of Bayquniya verbatim, sentence-by-sentence, and stop more in the places where it is necessary to comment and explain, especially so that the student does not make mistakes in the process of reading the poem, he revises the text and marks the rules of the poem based on the drawing style. Thirdly, the author of the poem if he mentions thirty-four istilaha related to the science of hadith, the commentator explains the types of each istilah and the rules related to it.

The fourth one focuses on the types of hadith sciences. For example, if a word has a dictionary and istihal meaning, the reader will be able to understand it quickly if the commentator gives its opposite or a term with one meaning and another word. The fifth is that the hadith gives examples of types of knowledge. In particular, it will be easier to quote the hadith itself regarding the term and hadith istili. Sixth, the presence of a final conclusion in the debates about each of the types of hadith science is a clear example of its superiority over other commentaries [23]. The work “Ad-Duraru-l-Bahiyatu fi sharhi-l-manzumati-l-Bayquniya” has been published by several printing houses so far. Among them, the publication in collaboration with the printing houses of Damascus and Beirut stands out for its high quality and lack of spelling errors. The work was published in 2018 by Nuriddin Talib in the publishing house “Doru-l-muktabas”.

## **CONCLUSIONS**

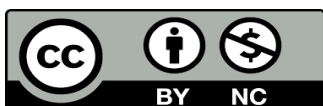
In short, during the study of Bayquniya’s poem and its commentaries, it became known that about one hundred scholars wrote commentaries on the poem in three centuries. Despite the fact that the author of Manzuma is a Shafi’i, scholars of other sects and non-sectarians also commented. Due to the large number of commenting scholars, it became known that the names of three scholarly commentaries were the same. One of the Hanafi scholars, Ahmad ibn Muhammad Husaini Hamavi Hanafi (d. 1098/1687) wrote a commentary under the name “Talqihu-l-fikar bi sharhi manzumati-l-asar”. Also, Muhammad ibn Muhammad Mirghani Makkii Hanafi (d. 1268/1852) wrote a commentary entitled “Latoifu minahi-l-mughisi fi mustalahi-l-Bayquniyi fi-l-hadisi” and it became known that Hanafi scholars are leaders in this field as well.

However, not all of the comments on this poem have reached the readers. In addition to these, audio tapes and video tutorials of Manzuma are also available on the Internet. The fact that this manzuma was taken as a basis in the science of hadith studies in some countries’ Islamic-religious educational institutes and included in the textbook using its comments has also raised its level.

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### REFERENCES

- 1) Umar ibn Muhammad ibn Fattuh. Sharhul-Manzumatil-Baikuniya. Dagestan: - Dorur-risola, 1953. - p. 12.
- 2) Khamrokulov J. Changes in the science of hadith. Commentary on Manzumatu-l-Bayquni. - Tashkent. Movarounnahr, - p.
- 3) Babani Baghdadi. Hadiyatu-l-arifin. Istanbul, – Education. 1951. - J. III. - p. 319.
- 4) Shihabuddin Muhammad ibn Muhammad Badiri Dimyoti. Safwatul-milahi bi shharmi manzumati-l-Bayquniyi fi fanni-l-mustalahi. Beirut is Doru-n-Navo. 2008. – p. 25.
- 5) Khayruddin Zirikli. Alam. Beirut: - Darul-kutubil-ilmiya, 2002. - J. IV. - p. 107.
- 6) Fihrasul-khizonatit-Taymuriyati. Cairo: - Darul-kutubil-misriya, 1947. - p. 17.
- 7) Abdulaziz ibn Ibrahim ibn Qasim. Kitabu-d-dalili ila-l-mutuni-l-ilmiya. Riyaz, - Doru-s-sami'iy. 2000. – p. 224.
- 8) Marabi. Al-Jawahiru-s-Sulaimaniyatu sharhu-l-Bayquniya. Riyaz, - Doru-l-kiyan. 2005. – p. 18.
- 9) Abulhasan Mustafa ibn Ismail Suleiman Marabi. Commentary on Al-Jawahiru-s-Sulaymaniyah Manzumati-l-Bayquniya. Cairo, Darul-kiyan. 2006. – p. 19.
- 10) Abu Muaz Tariq ibn Awazallah ibn Muhammad. Sharhu manzumatu-l-Bayquniyati fi ilmi-l-mustalahi-l-hadith. Riyaz, - Daru-l-mughni. 2009. – p. 129.
- 11) Suleiman ibn Khalid ibn Nasir Harabi. Sharhu-l-manzumati-l-Bayquniya. Riyaz, - Doru-l-Minjoj. 2014. – Bp. 11.
- 12) Ksg111@gmail.com
- 13) Ahmad ibn Muhammad Hosseini Hamavi Hanafi. Talqihu-l-fikar bi commentary manzumati-l-asar. Riyaz, Darul-Minjoj. 2009. – p. 4-16.
- 14) Ahmad ibn Muhammad Husayni Hamavi Hanafi. Talqihu-l-fikar bi commentary manzumati-l-asar. Riyaz, - Doru-l-minjoj, 2009. - p. 4-18.
- 15) Luqmanu-l-Hakim Indunisi Azhari. Bulugu-l-Amniyati. Cairo, - Doru-l-basoir, 2018. - p. 2.
- 16) Muhammad Ahnosh Ghimori. Al-Futuhutu-l-Wahhabiya bi Sharhi-l-Manzumati-l-Bayquniya. Oman, - Doru-n-nur. 2019. – p. 18.
- 17) <https://midad.com/scholar/50238/>
- 18) Muhammad Mujir Khatib Hasani. Usasu-n-nazari fi ilmi-l-asar. Istanbul, Doru-s-Surayo. 2021. - p. 29.
- 19) Abu Hamid Muhammad Makki ibn Ali Bitawiri. Sharhul-Manzumatul-Bayquniyati fi mustalahil-hadith. Istanbul: - Darul-hadisi-kitobiya, 2019. - p. 19.
- 20) Abu Hamid Muhammad Makki ibn Ali Bitawiri. Sharhul-Manzumatul-bayquniyati fi mustalahil-hadith. Istanbul:- Darul-hadisi-kitobiya, 2019. - p. 21-25.
- 21) Baghdad University. Kulliyatul-Ulumil-Islamiya. Baghdad: - Darul-kutub wal-wasoiq, 1996. - p. 5.
- 22) Alawi ibn Hamid ibn Hamid ibn Muhammad ibn Shihab. Sharhu manzumati-Baikuniya. Khazramavt - Dorubni Shihab. 2017. – p. 3.
- 23) Muhammad ibn Yusuf ibn Badriddin Moroccan Damascus Biybani Hassani. Commentary on Ad-Duraru-l-Bahiyatu fi-l-manzumati-l-Bayquniya. Beirut, - Daru-l-muktabas. 2018. – p.



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## Research and Design of Hexagonal Gaming System

LI Yuqi<sup>1</sup>, WEI Yiyang<sup>2</sup>, LI Yongyuan<sup>3</sup>

<sup>1,2,3</sup> School of Management Science & Technology, Anhui University of Finance & Economics, Bengbu  
Anhui, 233030, China



**ABSTRACT:** In recent years, Hexagonal chess has gradually appeared in various machine gaming competitions, and is popular among the public because of its simple and fair game rules. In this system, a computer game program is studied and designed with Hexagonal Chess as the object of study. In order to further improve the search speed of the algorithm, the UCT algorithm is used in this paper. This algorithm not only improves the search time of Monte Carlo tree algorithm, but also improves the performance of the algorithm in space.

**KEY WORDS:** computer games; hexagonal chess; search algorithms; monte Carlo trees; UCT algorithms

### I. INTRODUCTION

With the rapid development of computers, people have become interested in playing chess on computers, and so chess games have gradually become known. However, as the world gradually transitioned from the information age to the age of artificial intelligence, people were no longer satisfied with the simple games for everyone that they used to play. At this point, people wanted to fight against more difficult computers, also known as AI games. AI games are a challenging topic in the field of artificial intelligence. It uses machine chess playing as the main research vehicle, imitating the thinking process of human chess playing. Key technology research and system design of checkers complete information game<sup>[1]</sup>. Since the 1950s, many famous scholars in the world have started to dabble in the field of AI games. John von Neumann, the father of computing, proposed the most famous minimum limit theorem for game tree search. John McCarthy, the founder of artificial intelligence, first introduced the concept of "artificial intelligence". Later, with "Deep Blue", "Super Deep Blue", "Hand Talk", "Chess Master" and the "AlphaGo" program that defeated the world Go champion, represent the success of today's AI game technology. The fundamental reason why AI games have evolved so rapidly is that scholars have focused on finding more efficient search algorithms, from the original minimax algorithms to artificial neural networks. The quest for more efficient search algorithms continues to be a quest for academics.

### II. BRIEF DESCRIPTION OF THE RULES OF HEXAGONAL CHESS

#### (1) Board representation

The Hex board is diamond shaped and usually consists of 10 x 10, 11 x 11, 14 x 14 hexagonal squares, while in the domestic Hex game the board basically consists of 11 x 11. The whole board has four borders, with symmetrical borders of the same colour. The board is shown in Figure 1.

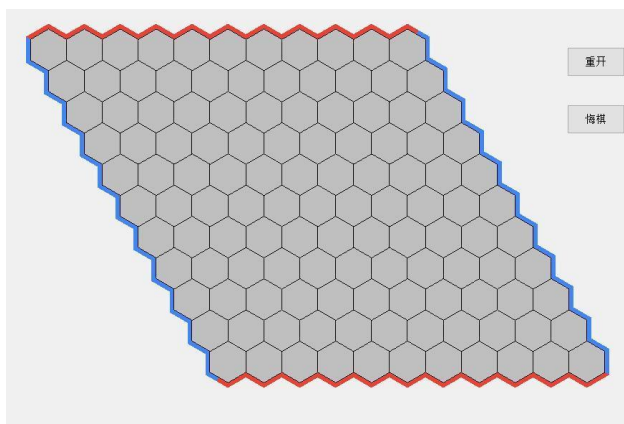


Fig. 1 Board interface

### (2) Move rules

The rules of Hex Chess are relatively simple. (1) Before the game begins, both players select pieces of the corresponding colour, corresponding to the border. After each player has a piece of each colour, they choose their successive moves in turn. (2) Once the successive moves have been chosen, the game begins, with the first and second player taking turns to throw the pieces onto the board. Only one piece can be played at a time, i.e. occupying a hexagonal square to place a piece of your own colour. (3) At the end, the side that first forms a line with the border of the corresponding colour is the winner. As shown in diagram 2, on a board where the red piece is first to connect with the border, the red side wins.

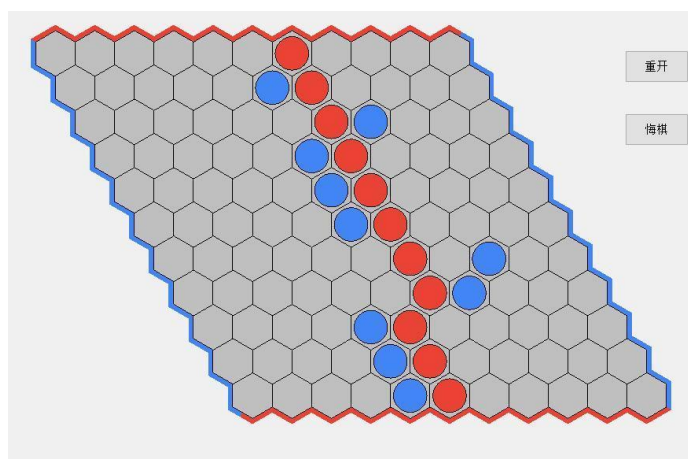


Fig. 2 Red wins

## III. STRUCTURAL DESIGN OF THE HEXAGONAL GAMING SYSTEM

### (1) Gaming system design

The computer game system consists mainly of the algorithm design and interface design of the combat platform. That is, the combination of the game process at the back end and the display interface at the front end. Firstly, the game design is the core of the entire game system. The core of game design is to get the best result of the game in a limited time. Its techniques consist mainly of search and valuation. Search is the process of constructing a tree based on initial conditions and extension rules and finding the nodes that match the target state by some algorithm<sup>[2]</sup>. And valuation is the assessment of how good or bad things are. This includes four specific parts, game tree search, node expansion, game simulation and valuation and node generation. Secondly, the interface design is relatively simple and specifically contains two parts, board initialisation and game rules. The specific design architecture is shown in Figure 3.

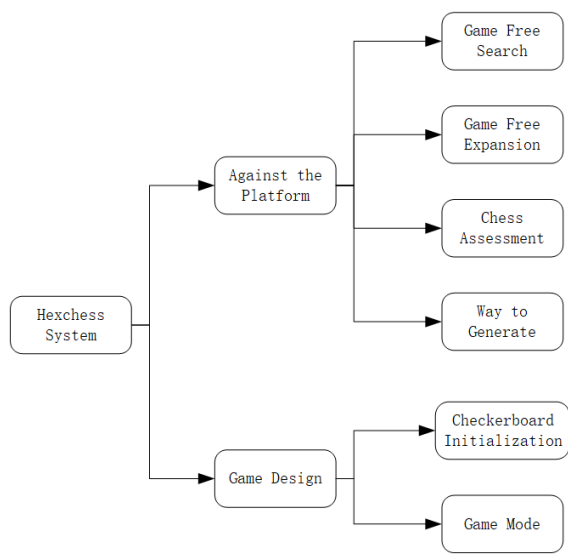


Figure 3 Hexagonal gaming system architecture

Once the structure has been designed, the question that needs to be considered is how the two players will play, i.e. the design of the game. According to the rules of Hexagonal Chess, the two players play alternating moves. The computer plays by using a specific search algorithm to find a specific move path, while the player places the pieces directly in the blank squares and the system automatically updates the board when either player has finished. The game flow is shown in Figure 5.

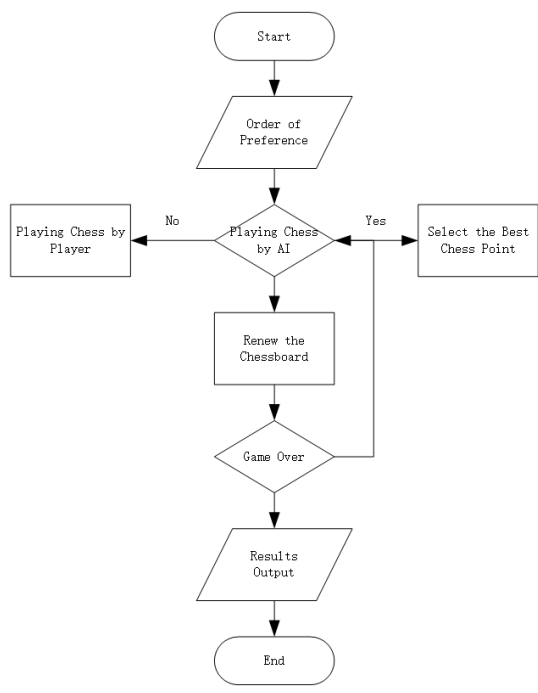


Fig. 4 Flow chart of the Hexagonal Chess game.

(2) Data structure design

The structural design includes the design of the board storage type, the board, the pieces and the implementation of the rules for the board. The definition of variables plays an important role in the writing of the program. Properly designed variables not only improve the readability of the program, but also provide greater clarity in the subsequent maintenance of the program<sup>[3]</sup>. The board uses an 11 × 11 two-dimensional array to hold the positions, where blank is denoted as -1, red as 0, and blue as 1. This design is convenient for counting the number of blank squares, red pieces, and blue pieces on the board, and enables better evaluation of the board.



Empty = -1 Red = 0 Blue = 1
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**IV. DETAILED SYSTEM BACK-END DESIGN**

(1) Search algorithms

Search is the core of AI chess, and there are many search algorithms that can be used in Hexagonal chess, such as the Extremely Small Value algorithm and the Negative Great Value algorithm in the Exhaustive Search algorithm, the Alpha-Beta algorithm and the PVS algorithm in the Crop Search algorithm, the Replacement Table heuristic and the History heuristic in the Heuristic Search algorithm and the Monte Carlo algorithm and the UCT algorithm in the Random Search algorithm. The UCT algorithm is simply the UCB formula applied to a Monte Carlo tree<sup>[4]</sup>. First of all, Monte Carlo trees are not considered an algorithm, but a generic term for a class of stochastic methods. The characteristic of this class of methods is that the approximate results are computed on random samples. As the number of samples increases, the probability that the result obtained is correct increases, but until the true result is obtained, there is no way to know if the result obtained so far is correct. The more you sample, the more you approximate the optimal solution. As opposed to the UCB formula, the UCB value can be understood as the expected value of the path, and the value is made up of two components. The UCB value of the node is equal to the sum of the average gain from the simulation of the node and the desire of the node to be simulated. Obviously, the fewer relative times a node is visited, the stronger the desire to not let go of a potentially valuable node.  $x_j$  is the average gain,  $n_j$  is the number of times the current node is visited, and  $n$  is the number of times the current node's parent node is visited. All Hexagonal Chess needs to do is to constantly adjust the variable parameters inside the UCB formula to get the best results.

$$I_j = \bar{x}_j + k \sqrt{\frac{2 \ln n}{n_j}} \tag{1}$$

(2) Algorithm implementation

The UCT algorithm has huge advantages in time and space compared to traditional search algorithms<sup>[5]</sup>. A study of point-grid chess gaming system based on UCT search algorithm. First of all, the move of the first piece, in fact, to a large extent, determines the winning or losing of the game. The optimal landing point for the first piece of the Hexagonal tempo is the position at coordinates (5,5) (initial coordinates 0,0), which is the centre of the board. It is also possible to use the UCT algorithm to simulate other moves, but this coordinate is relatively optimal.

Using the current position as the root node, the UCB formula is used to calculate the UCB value of each sub-node<sup>[6]</sup>, and the sub-node with the greatest value is selected for exploration. There are three possibilities for exploration: unvisited nodes, leaf nodes and search depth reaching a fixed value. If the current node is not a leaf node or the search depth does not reach a fixed depth, the current node is used as the root node<sup>[7]</sup>. Continue to find and calculate the UCB values of all child nodes and repeat the above steps. Otherwise, simulate the matchmaking. The core code is shown below.

```

auto winrate = (uf->color_to_move() == colorAI) ? // whether to play for AI
(double)current->children[i]->cntWin / current->children[i]->cntTotal // winrate
1 - (double)current->children[i]->cntWin / current->children[i]->cntTotal;
new_score=ucb(winrate, current->cntTotal, current->children[i]->cntTotal);
//calculate the current node UCB value
if (max_score < new_score); //if max UCB value is less than current node UCB value
{max_score = new_score; select_index = i;} //Current node UCB value recorded as maximum
current = current->children[select_index]; //next selection from current node
    
```

If a leaf node is encountered or if the search depth reaches  $k$ , a simulated game is played against that leaf node and a Monte Carlo algorithm is used to obtain a random position to get the result of a win or a loss, and the value obtained during this

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calculation is updated to each level of ancestor node of that node. The evaluation function for this system is very simple, with a win returning 1 and a loss returning 0. The evaluation value is then used as the value for this search. The core code is shown below.

```
random_num = random(upper_limit);//Use the random function to obtain a random value  
pos = alternative[random_num];//Use the random value to obtain the next position
```

However, when the UCT search algorithm terminates the simulation due to some factor, the system selects a node at the first level as the final strategy based on several criteria<sup>[8]</sup>.

- (1) The node with the largest UCB value.
- (2) The node that has been searched the most times by the simulation.
- (3) The node with the largest UCB value and searched the most times by simulation.

(4) The branch that has been simulated multiple times. The UCT algorithm simulation looks for the optimal branch, and when a branch is simulated multiple times and the UCB value is still high, it means that the branch is the optimal branch for simulation.

When a node is finally selected as the final decision, the system updates the values and search counts of all the nodes in the current situation and passes back the current win/loss result. The core code is shown below.

```
while (current)//until the root node jumps out of the loop  
{if (colorAI == winner)//if the current position must win, add 1 to the search count and return to the parent node  
current->cntWin++;  
current->cntTotal++;//add 1 to the total number of searches  
current = current->parent;}
```

A complete UCT algorithm is one that performs multiple UCT searches in a limited number and time. The paths obtained from each search are not necessarily the same, and the structure of the game tree changes. Because it is essentially a Monte Carlo tree algorithm, the final branch obtained will be the closest to the optimal branch if the number of searches or the time is increasing.

## V. CONCLUSIONS

This paper focuses on the research and design of the Hexagonal Chess gaming system. The Hexagonal gaming system consists of two main parts, the design of the board structure and the search algorithm. The structure of the board is based on a two-dimensional array to preserve the games. At the same time, the novel UCT algorithm is used in the search algorithm, which can control the search depth in a controlled search time or number of searches, and fundamentally improve the search speed of the game tree. Although the use of the UCT algorithm in this system can significantly improve Hex's gaming level, there are still some shortcomings, such as the winning rate of the first hand is greater than the winning rate of the second hand. Gradually improving the system in the future can improve and enhance the artificial intelligence of the system more effectively. In the future, neural networks can be combined with the Hex chess gaming system, which can far improve the computer's ability to play chess by way of self-learning through neural networks.

## ACKNOWLEDGMENT

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## REFERENCES

- 1) Yang, Zhoufeng. Key technology research and system design of checkers complete information gaming [D]. Shenyang University of Aeronautics and Astronautics,2018.
- 2) Wang Xin,Li Yuan,Wang Jingwen,Li Zhenyu. Research on Hex chess gaming system based on UCT algorithm[J]. Intelligent Computers and Applications,2020,10(06):116-119.
- 3) Gui Yiyong. Research on a game system for checkers[J]. Intelligent Computers and Applications,2020,10(04):32-34+39.

## Research and Design of Hexagonal Gaming System

- 4) Jiao T. B. Research on robust communication of wireless optical and millimeter wave aggregation systems[D]. China University of Mining and Technology, 2021.
- 5) Zhu L.S.,Wang J.W.,Li Y. Research on point-grid chess gaming system based on UCT search algorithm[J]. Intelligent Computers and Applications,2021,11(02):129-131.
- 6) Zhang Yifang, Meng Kun. Research and analysis of UCT algorithm based on point grid chess[J]. Intelligent Computers and Applications,2020,10(04):27-31.
- 7) Ji Hui, Ding Zejun. Improvement of Monte Carlo tree search algorithm in two-player game problems[J]. Computer Science,2018,45(01):140-143.
- 8) Wang Wanwan. Research on UCT algorithm and computer game behavior of military chess robot[D]. Chongqing University of Technology,2019.



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## Policy Implementation of Social Security Providing Agency in Serving Outpatient Patients in Oncology Poly Rspal Dr. Ramelan Surabaya



Devi Arina Avrita Putri<sup>1</sup>, Sri Umiyati<sup>2</sup>, Arfah<sup>3</sup>

<sup>1,2,3</sup>Master of Public Administration, Faculty of Social and Political Sciences, Hang Tuah University, Surabaya, Indonesia

**ABSTRACT:** It is increasingly difficult for the community to obtain health services due to the high cost of health care. In 2020 cancer treatment has absorbed BPJS funds of 3.1 trillion rupiah. The high number of breast cancer (Carcinoma Mammae) in Indonesia is a priority for the Government. With this, the Government strengthens medical services for the treatment of breast cancer patients, by regulating the distribution of health services for cancer patients to make it easier for patients to access adequate health services. In 2021 RSAL Dr. Ramelan Surabaya received a certificate of appreciation from BPJS Health for his real commitment and contribution in providing the best service for JKN-KIS participants in the category A class A Hospital Surabaya branch. Thus, researchers want to know more about how the implementation of the policies of the Social Security Administering Agency (BPJS) in serving outpatients at the Oncology Poly RSPAL Dr. Ramelan Surabaya as a plenary type A hospital. Using the theory of policy implementation according to George Edward III (1980), with the variables of communication, resources, disposition, and organizational structure. By using qualitative research methods and data collection techniques interview, observation, and documentation. Although there are obstacles in implementing the BPJS program at RSAL Dr. Ramelan, but this can be handled well by the efforts made by RSPAL Dr. Ramelan. It is recommended that in the implementation in the field more strengthening of health workers either directly or indirectly. Comprehensive socialization in every part of the hospital from the bottom to the top RSPAL Dr. Ramelan starts from written or unwritten policies. Facilitate the use of BPJS for new breast cancer patients seeking treatment.

**KEYWORDS:** Implementation, BPJS Program, Health Services

### INTRODUCTION

Law No. 24 of 2011 also stipulates that the National Social Security will be administered by BPJS, which consists of BPJS Health and BPJS Employment. Especially for the National Health Insurance (JKN) will be held by BPJS Health whose implementation will begin on January 1 2014. Operationally, the implementation of JKN is set out in Government Regulations and Presidential Regulations, including: Government Regulation No. 101 of 2012 concerning Contribution Assistance Recipients (PBI) ; Presidential Regulation No. 12 of 2013 concerning Health Insurance; and the JKN Roadmap (National Health Insurance Roadmap). Health costs are increasing every year, making health a very affordable thing. Health insurance offered by private companies is currently considered burdensome for the people of Indonesia. When BPJS is present, the community gets convenience. Currently, 86% of Indonesia's population has received health insurance protection by participating in the JKN-KIS Program. The scope of this participation includes the poor and the underprivileged, which is financed by the government as participants in the Contribution Assistance (PBI). Retired ASN/TNI/POLRI also automatically become JKN-KIS participants. Head of Public Relations (Humas) BPJS Kesehatan M. Iqbal Anas Ma'aruf said that BPJS covers all diseases contained in the JKN-KIS regulation, including chronic diseases, including; cancer, stroke, heart, kidney, liver cirrhosis, thalassemia, leukemia and hemophilia. This is explained in Article 52 of the Presidential Regulation Number 82 of 2018 concerning health insurance, and it is explained that several services that are not covered by BPJS include overcoming infertility, straightening teeth or orthodontics, and health problems due to drug or alcohol dependence. In the BPJS Health info booklet, it is stated that the cost of health care insurance in 2016-2020 reached IDR 374.86 trillion, and 83.31 percent of them were referral services for chronic diseases.

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Breast cancer (Carcinoma Mammae) ranks first in terms of the highest number of cancers in Indonesia and is one of the first contributors to cancer deaths. Globocoan data in 2020, the number of new cases of breast cancer reached 68,858 cases (16.6%) of the total 396,914 new cases of cancer in Indonesia. Meanwhile, the number of deaths reached more than 22 thousand cases. Reporting from the CNBC Indonesia news portal, in 2020 cancer treatment has absorbed BPJS funds of 3.1 trillion rupiah. The high number of breast cancer (Carcinoma Mammae) in Indonesia is a priority by the government. With this, the Government strengthens medical services for the treatment of breast cancer patients, by regulating the distribution of health services for cancer patients to make it easier for patients to access adequate health services. Breast cancer ranks highest in Indonesia in 2020 with more than 60 thousand patients. Meanwhile, based on data from the Surabaya City Health Office, the number of cancer cases over the last three years is still fluctuating. The number of cancer patients until 2021 is still above 2,000 cases. Of the many cancer cases in Surabaya, breast cancer (Carcinoma Mammae) is dominated by 1,073 cases. To serve JKN patients with cancer, BPJS Kesehatan cooperates with hospitals that provide chemotherapy facilities, oncology boards, and radio therapy.

Although the presence of BPJS has a positive impact on the people of Indonesia, in its implementation in the field there are still obstacles experienced by people with cancer in accessing health care facilities. With the changing regulations and the lack of communication between the puskesmas/hospital and BPJS Health, it is possible for problems to occur in the puskesmas/hospital as the implementer of the JKN BPJS program that deals directly with patients. So that health service centers such as Puskesmas/Hospitals are also still trying to adjust the implementation of the JKN BPJS Program with all changes to existing rules. In the rules, the new BPJS card can be active and can be used after a week from registration. Referrals to health service institutions appointed by BPJS Health are also a problem because they are limited. Even though they collaborate with other health insurance providers, participants are only allowed to choose one facility to get a referral. These limitations make it difficult for people who frequently travel and work in distant places. Another problem that often occurs is the service queue and the complexity of the BPJS Health service flow because it applies a tiered service flow. This is regulated in the Regulation of the Minister of Health of the Republic of Indonesia Number 28 of 2014 concerning Guidelines for the Implementation of the National Health Insurance Program, a referral letter can only be used for up to three months from the initial publication of the letter. If within 3 months the patient's condition has not improved, then the patient is required to extend the validity of the same referral letter by repeating the procedure from the beginning, namely returning to the first health facility where the patient is registered to get a basic medical examination and renew the referral. In addition, certain procedures such as radiation therapy, hormone therapy, chemotherapy, and surgery are often delayed or it is difficult to get an action schedule. As stated by the Director General of Disease Prevention and Control, Maxi Rein Rondonuwu, radiotherapy treatments such as chemotherapy, radiotherapy, or immunotherapy services for cancer patients only exist in Eastern Indonesia, namely Surabaya with a long waiting period.

According to Sumaryadi (2010) operationally, public services provided to the community can be divided into two major groups, namely; First, public services that are provided without regard to individuals, but the general needs of the community which include the provision of transportation facilities and infrastructure, provision of health centers, development of educational institutions, maintenance of security, and so on; Second, the services provided by individuals include resident cards and other documents. Based on the Decree of the Minister of Health of the Republic of Indonesia Number 986/Menkes/Per/11/1992 general hospital services in Indonesia, the Government of the Ministry of Health and the Government are classified based on the facilities and types of services into classes/types A, B, C. Dr. Naval Hospital. Ramelan Surabaya has become a BPJS referral hospital in dealing with cases of Breast Cancer (Carcinoma Mammae) and has carried out recredentialing in 2020. Recredentialing is an assessment and feasibility of hospitals in continuing their collaboration with BPJS Health. In 2021 RSAL Dr. Ramelan Surabaya received a certificate of appreciation from BPJS Health for his real commitment and contribution in providing the best service for JKN-KIS participants in the category A class A Hospital Surabaya branch.

RSPAL Dr. Ramelan Surabaya has had brilliant achievements that made it one of the hospitals that received an award in the form of plenary accreditation from the Hospital Accreditation Commission (KARS) in accordance with SK No: KARSSERT/37/V/2014, this is the highest accreditation for hospitals and as well as a level I hospital in East Java which is an integrated referral center in the eastern part of Indonesia. Thus, RSPAL Dr. Ramelan Surabaya is ready to compete with foreign hospitals, because the city of Surabaya became a pilot for the entry of foreign hospitals during AFTA. Class A Hospital is a hospital that is able to provide broad specialist and subspecialist medical services by the government, this type A hospital is referred to as a central hospital because it has been designated as the highest referral service (top referral hospital).

Every year, many positive assessments of RSPAL Dr. Ramelan Surabaya. The positive assessment is based on the existing reality where the community is very satisfied with the services provided by RSPAL Dr. Ramelan Surabaya. There are several services at RSPAL Dr. Ramelan Surabaya. In this study, the authors chose outpatient services at the oncology poly at RSPAL Dr. Ramelan which is one of the poly that handles and treats cancer and one of them is the case of Breast Cancer (Carcinoma Mammae). The

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oncology polyclinic has the most patient visits, namely 50-60 patients, this can be seen from the large number of requests for medical record files for catastrophic diseases. The number of breast cancer (Carcinoma Mammae) patients undergoing outpatient treatment at RSPAL Dr. Ramelan from the period May 2019- April 2021 reached 354 people. The most widely accepted therapeutic treatment by breast cancer patients at RSPAL Dr. Ramelan is chemotherapy. Until 2021, 5936 patients with Breast Cancer (Carcinoma Mammae) use BPJS services to undergo treatment and treatment. With the background described by the researcher above, the researcher wants to know more about how the implementation of the policies of the Social Security Administering Agency (BPJS) in serving outpatients at the Oncology Poly RSPAL Dr. Ramelan Surabaya as a plenary type A hospital that provides special and broad sub-specialty services in treating breast cancer patients (Carcinoma Mammae) as a disease that ranks first in terms of the highest number of cancers in Indonesia and is one of the first contributors to cancer deaths. Given that the RSPAL Dr. Ramelan is the highest referral hospital in East Java Province which always gets point A in 2021 for 2 consecutive semesters related to community (patient) satisfaction.

### **RESEARCH METHOD**

This study uses qualitative methods is research on research that is descriptive and tends to use analysis. Process and meaning (subject perspective) are more highlighted in qualitative research. The theoretical basis is used as an integrated so that the research focus is in accordance with the facts on the ground. In addition, the theoretical basis is also useful for providing an overview of the research background and as a material for discussing research results. There is a fundamental difference between the role of theoretical foundations in quantitative research and qualitative research. In qualitative research, research departs from theory to data, and ends in acceptance or rejection of the theory used; whereas in qualitative research it starts from data, uses existing theory as an explanation, and ends with a "theory".

The focus of this research is intended to limit qualitative studies as well as limit research in order to choose which data are relevant and which are irrelevant (Moleong, 2011). The limitations in this qualitative research are based on the level of importance/urgency of the problems encountered in this research. This research will focus on "analyzing the implementation of the policy of the Social Security Administration (BPJS) in serving outpatients at the Oncology Poly RSAL Dr. Ramelan Surabaya" using Edward III's theory. This study uses a qualitative descriptive type of research, the data analysis is done by "describe". According to (Sugiyono, 2017) data analysis is the process of systematically compiling data that has been obtained from the results of interviews, observations, and documentation, by organizing the data into existing provisions to obtain predetermined data results so that they are easily understood by yourself. or someone else. To find out how the BPJS Policy Implementation at the Oncology Poly RSAL Dr. Ramelan Surabaya, especially for breast cancer patients. Researchers used descriptive qualitative techniques to create a picture of situations and events. The data is then analyzed using several steps according to the theory of Miles, Huberman and Saldana (2014), namely analyzing the data with 3 (three) steps, namely: data condensation (data condensation), data display (presenting data), conclusion drawing and verification (drawing conclusions). or verification. Data condensation refers to the process of selecting, abstracting, and transforming data. In more detail, the steps are according to the theory of Miles, Huberman and Salda (2014)

### **RESULTS AND DISCUSSION**

Study on BPJS Policy Implementation in Outpatient Poly Oncology RSPAL Dr. Ramelan Surabaya, with a case study of the implementation of BPJS policies running optimally (good). George Edward III began by asking the following questions: What preconditions are needed so that a policy implementation is successful. Edwards tries to answer these two important questions by discussing four crucial factors or variables in the implementation of public policy. Variables include communication, resources, disposition, and bureaucratic structure. According to Edwards III, because the four factors that influence policy implementation work simultaneously and interact with each other to help and hinder policy implementation, the ideal approach is to reflect on this complexity by discussing all of these factors at once. Based on this theory, below will be described the factors that influence the implementation of BPJS policy at RSPAL Dr. Ramelan Surabaya, with a case study on the implementation of policies of the Social Security Administration in Serving Outpatients at the Oncology Poly RSPAL Dr. Ramelan Surabaya.

#### **1. Communication**

During the implementation of BPJS policy services, RSPAL Dr. Ramelan underwent a long transformation in socializing the BPJS program to the public or patients seeking treatment. As did Karumkital Dr. Ramelan at the morning apple always reminded to continue to provide the best service to patients who seek treatment, both BPJS and Non BPJS through morning reports (for medical and paramedics) which later the messages will be conveyed by the leadership (department head) to the departments poly at RSPAL Dr. Ramelan is one of the oncology polyclinics. Then not only that related to the BPJS policy at RSPAL Dr. The forecast

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from the RSPAL Dr. Ramelan also participated in launching the “zone of integrity” program which was declared directly by Dr. Karumkital RSPAL. Ramelan and signed by all employees to make improvements in order to support RSPAL Dr. Ramelan as a government agency that implements the zone of integrity by forming agents of change such as improving communication that takes place during the treatment process carried out by patients and the hospital.

In terms of clarity, knowing the importance of BPJS Health for the community, RSPAL Dr. Ramelan as the largest referral hospital in East Java has participated in assisting by implementing government programs since 2014 as stated in Law no. 24 of 2011 concerning National Social Security organized by BPJS. In the implementation of the BPJS program at RSPAL Dr. Ramelan cancer patients well, friendly, and informative. Then put up banners in every corner of the hospital (waiting room and counter administration room) about patient and family obligations, patient and family rights, BPJS patient responsibilities. Next, make the RSPAL Dr. Ramelan also created the official website [rsalramelan.com](http://rsalramelan.com) to provide information via online and there is also a place for complaints and patient satisfaction with the "complaint/conflict flow" menu and has structured the procedures for making complaints at Dr. RSAL. Ramelan in full. In order for communication to be effective, the method of delivering messages or information needs to be carefully designed and conveyed clearly in accordance with the characteristics of the communicant and the circumstances in the social environment concerned. With messages, one can control the attitudes and behavior of the communicant. In order for the communication process to be carried out effectively. For a communicator, a message to be communicated has clear content, but what needs to be considered is the management of the message. The message must be arranged according to the communicant who will be the target. So that the RSPAL Dr. Ramelan, especially to administrative staff and health workers when on duty, is required to be able to provide clear and informative information so that patients can understand so that communication can run effectively and in accordance with the desired goals.

Consistently as a Level I TNI hospital and the largest referral place for TNI patients in Eastern Indonesia, RSPAL Dr. Ramelan participates in running government programs through the national health insurance program organized by BPJS Health to ensure that all Indonesians are protected by comprehensive, fair and equitable health insurance. This is evident from the offer made by the health workers on duty at the Oncology Poly to suggest new breast cancer patients to make BPJS first. Due to the cost of treating breast cancer patients is very expensive and takes a long time in the treatment process. This proves that RSPAL Dr. Ramelan consistently participates in providing ongoing support for the BPJS policy program launched by the government. Then the health workers who are guarding the oncology poly also do not stop to continue to socialize to patients regarding the procedure for online registration of BPJS breast cancer patients who will consult for treatment, the rules of rights & obligations, and patient responsibilities that must be known to BPJS breast cancer patients. while on treatment. The goal is that the message is embedded and can influence people's behavior.

### **2. Resources**

Implementation instructions may be passed carefully, clearly, and consistently, but if implementers lack the necessary resources to implement policies, then this implementation is likely to be ineffective. Very important resources include: adequate staff and good skills to carry out the tasks, powers and facilities needed to translate the above proposals to carry out public services. a. Human Resources The most important resource in implementing the policy is staff. One thing to keep in mind is that numbers do not always have a positive effect on policy implementation. This means that a large number of staff does not automatically encourage successful implementation, this is due to the lack of skills possessed by government staff or employees. RSAL Dr. Ramelan has made a strict selection regarding the doctors on duty at the hospital. Doctors owned by RSAL Dr. Ramelan is the best doctor in Indonesia, and has a good experience. Doctors and nurses in the poly oncology department are no exception, where they have a lot of responsibility for breast cancer patients. Starting from providing recommendations for medical treatment needed by patients, evaluating the results of treatment and treating the patient's condition after treatment. So the doctor at the RSAL oncology poly Dr. Ramelan does not focus on the treatment of patients only, where doctors also have to help to relieve the symptoms of the disease experienced by patients at the oncology poly Dr. RSAL. Ramelan.

Breast cancer has a variety of symptoms, so the doctor at the RSAL oncology poly Dr. Ramelan must know the patient's medical history systematically and completely. The advantages of RSAL Dr. Ramelan in dealing with patients with breast cancer is radiotherapy services that other hospitals do not have. Currently Rumkital is only able to serve 60 radiotherapy patients if the additional capacity and equipment is completed, RSAL Dr. Ramelan Surabaya will target to be able to serve as many as 130 radiotherapy patients every day. RSAL Dr. Ramelan Surabaya is trying to complete the hospital infrastructure. According to the hospital, investing in facilities and infrastructure will generate income many times over. By improving the quality and quantity of hospitals can produce more. RSAL Dr. Ramelan is the only largest level 1 hospital owned by the Indonesian Navy, having duties and functions as a TNI referral hospital for the Eastern Indonesia Region. In order to support all aspects of health, it is necessary to develop health facilities and infrastructure, this will have a positive impact in producing potential human resources. For that

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RSAL Dr. Ramelan is required to be able to provide the best and professional health services, which not only rely on human resources but also health support facilities and equipment that play a very important role in determining the quality of health services.

Currently BPJS participants consist of government agency employees, private employees, and non-employees and their families. Participants will be Health, one of which is RSAL Dr. Ramelan Surabaya. The existence of a tiered referral rule by empowering level 1 health services to play a more optimal role, by being claimed to BPJS Health, means that in other words there is no replacement for costs so patients have to pay for the treatment themselves. It can be seen from the compliance with the use of the BPJS provider formulary at RSAL Dr. Ramelan Surabaya reached 99%, almost close to perfect and has carried out recredential assessment and hospital eligibility in continuing the Cooperation with BPJS Health in 2020 which is carried out directly by the BPJS Health Team. In 2021 RSAL Dr. Ramelan Surabaya received a certificate of appreciation from BPJS Health for his real commitment and contribution in providing the best service for JKN-KIS participants in the category A class A Hospital Surabaya branch. This is evidence that the turnover of the budget used for treatment by BPJS breast cancer patients at RSAL Dr. Ramelan has been going well as it should. The advantage of a good budget turnover is to function as a means of controlling employee work patterns in carrying out an activity. So it can be concluded that the discussion of the sources of effective policy implementation. Without these sources, the policies that have been formulated will not be successful. Sources that support effective policies from the number of staff who have adequate skills and complete facilities, and sources of budget capital that are running well.

### **3. Disposition**

Disposition is also one of the factors that influence the successful implementation of a policy or program. Important things that need to be observed on the disposition variable include:

Honesty, hospital integrity is a commitment, even in the face of challenges. Integrity is a person's attitude in defending himself to stick to the correct values of norms, morals and ethics. At RSPAL Dr. Ramelan strongly adheres to integrity because it is the capital of a health worker's professionalism. The value of honesty is the most important value because honesty is closely related to conscience. Speaking and behaving honestly is an attitude of respect for the people around you as well as for yourself. The definition of honest is to say the words and provide information that is in accordance with the actual situation. It was proven when all the staff of the RSPAL Dr. Ramelan runs the BPJS health insurance program, where they do not charge any administrative fees. When there are medical expenses that require additional funds to purchase drugs that are not covered by BPJS after chemotherapy, the hospital does not force them to buy them. In handling BPJS breast cancer patients in outpatient poly oncology, all health workers when diagnosing breast cancer correctly, correctly, and tells the truth about the disease. Thus, BPJS breast cancer patients at the oncology polyclinic will continue to trust doctors and nurses because the drugs that doctors give to patients are in accordance with their disease and this can facilitate the healing process of BPJS breast cancer patients. Honesty can increase credibility and also good reputation for health workers in poly oncology which also affects the credibility of RSPAL Dr. Ramelan is proven from the results of the community satisfaction survey in the first and second semesters of 2021 reaching 95% category A.

### **4. Bureaucratic Structure**

Bureaucratic structure is discussing the implementing agency of a policy, it cannot be separated from the bureaucratic structure. Bureaucratic structures are characteristics, norms, and patterns of relationships that occur repeatedly in executive bodies that have both potential and real relationships with what they have in carrying out policies. According to Edwards, there are two main characteristics of bureaucracy, namely work procedures with basic measures called Standard Operating System (SOP) and Fragmentation. a. SOP (Standard Operating System), Organizational structure - the organization that implements the policy has an important influence on implementation. One of the most basic structural aspects of an organization is the standard operating procedures (SOP). These common procedures for dealing with common situations are used in public and private organizations. By using SOPs, implementers can take advantage of the available time. In addition, SOPs uniform the actions of officials in complex and widespread organizations, which in turn can lead to great flexibility (people can be moved easily from one place to another) and great uniformity in the application of regulations - regulation. Measures with SOP at RSPAL Dr. Ramelan is realized by the existence of the BPJS Program Policy Control Team in collaboration with the central BPJS Team which has branches in Surabaya. The regulations contained in the BPJS program are standard and sourced from Law no. 24 of 2011 concerning BPJS. However, from the results of interviews with patients using BPJS, the regulation is difficult and has a long bureaucracy. So that when implementing BPJS at RSPAL Dr. Ramelan had problems, but with alacrity and responsiveness the RSPAL Dr. Ramelan tries to help BPJS patients who seek treatment as much as possible by providing detailed information so that patients seeking treatment at RSPAL Dr. Ramelan comes by knowing and preparing administration or documents completely.

The mechanism for implementing the BPJS Health program at RSPAL Dr. Ramelan Surabaya is in accordance with applicable regulations, starting from registration, referring to the next stage in accordance with the regulations regulated by Minister of



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Health Regulation No. 40 of 2012 concerning guidelines for the implementation of National Health Insurance. When the health workers and staff of the RSPAL Dr. Ramelan providing services or carrying out his duties is not in accordance with the applicable regulations, then the member concerned will be called by the head of the hospital and evaluated regarding the tasks he performs so as to investigate the reasons for doing things that are not in accordance with applicable regulations. From the results of the evaluation, a solution will be taken against the member, whether to find a middle way or get strict sanctions from the head of the hospital. The more frequent and large the violation is, the more stringent the sanctions will be imposed on the member concerned. The bureaucratic structure means that in a government organization or bureaucracy it must have a clear structure / SOP related to the duties and responsibilities that have been charged and the RSPAL Dr. Ramelan Surabaya has a good standard operating procedure (SOP), because it is in accordance with the regulations, laws, and SPO (Standard Operating Procedures) that apply in the hospital. This can be seen in providing services and other organizational activities that always follow the applicable laws. The law used as a reference in providing services is Law no. 36 of 2009, Law no. 44 of 2009 concerning hospitals, and PP No. 70 of 2012 concerning the procurement of goods and services. RSPAL Dr. Ramelan has its own SOP in carrying out its activities as stated in the decision of the head of the navy hospital, the code of ethics for hospitals in Indonesia, and the code of ethics for the RSPAL Dr. Ramelan.

b. Fragmentation, the second characteristic of the bureaucratic structure that influences policy implementation is organizational fragmentation. Responsibilities for a policy area are often spread among several organizations, and there is often a radical decentralization of power in order to achieve policy objectives. The fragmentation of the bureaucratic structure like this is also reflected in the organizational structure of the BJS Program Control Team, where the organization has units that handle many things such as the Head of Yansep, Head of Input, Head of Code, and others. Ramelan.

The goal is to spread responsibility for sharing activities in several work units in accordance with their respective fields. Not only the BPJS program, in carrying out treatment at RSPAL Dr. Ramelan also has several routes for registration of treatment, which have been structured in a way that the sections and duties of each field have been structured. In the structure of the RSPAL Dr. The forecast contains clarity on how the organization's plans will be implemented, coordinated, and communicated. With a clear division of labor, good cooperative relations, and also the division of rights, obligations, and responsibilities to achieve the goals that have been determined. From the discussion of the crucial factors that influence the BPJS program policy, there are problems that hinder the implementation of the policy. The problems in question are findings in the field which are none other than the constraints caused by the four factors that affect the implementation. According to Edward III, because the four factors that influence policy implementation work simultaneously and interact with each other to assist and hinder policy implementation, the ideal approach is to reflect on this complexity by discussing all of these factors at once. Besides directly influencing implementation, each factor also indirectly influences policy implementation through its impact on each factor.

### **CONCLUSION**

After going through the analysis phase of the research results and discussion of the research, it can be concluded that the process of implementing the Policy Implementation of the Social Security Administering Agency (BPJS) in Serving Outpatients at the Oncology Poly RSPAL Dr. Ramelan Surabaya has been running optimally. This can be seen in the BPJS service program policies that have been regularly implemented by analyzing using Edward III's Public Policy Implementation theory which includes 4 indicators including: Communication, Resources, Disposition, and Organizational Structure. The four factors that influence policy implementation work simultaneously and interact with each other to assist and hinder policy implementation.

Although there are obstacles in implementing the BPJS program at RSAL Dr. Ramelan, but this can be handled well by the efforts made by RSPAL Dr. The predictions in Edward III's 4 indicators include:

- a. Communication: Karumkital Dr. Ramelan at the morning apple always reminded to continue to provide the best service to patients who seek treatment, both BPJS and Non BPJS through morning reports (for medical and paramedics) which later the messages will be conveyed by the leadership (head of department) to the departments in every poly, including the oncology poly. The benefits of morning apples are not just habituation of employee discipline, but as a means to convey important information, as well as directions from the leadership. Besides that, with the morning apple a sense of kinship and togetherness can be created.
- b. Resources: for human resources at RSPAL Dr Ramelan Surabaya, doctors are selected strictly and are the best doctors in Indonesia. With good experience, the doctor at RSPAL Dr. Ramelan can provide maximum service to patients, especially those with cancer. Broadly speaking, for standard hospitals that have had plenary A accreditation and as the largest referral hospital in East Java, RSPAL Dr. Ramelan has very complete, comfortable, and modern facilities and equipment. The turnover of the budget used for treatment by BPJS breast cancer patients at RSPAL Dr. Ramelan has been running well as it should, the patient has never been asked for additional, just BPJS Health.

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- c. Disposition: In terms of commitment, RSPAL Dr Ramelan has a high commitment in providing services in treating BPJS outpatients, which can be seen from its readiness to carry out coaching and initial examinations for breast cancer patients who will seek treatment. For RSAL Dr. Ramelan. In terms of honesty, where both health and non-medical workers try to provide services to BPJS patients in outpatient poly oncology honestly. For example, where BPJS outpatient poly oncology patients are not asked to pay a penny to get treatment, because all medical expenses have been borne by BPJS Health.
- d. Bureaucratic Structure: RSAL Dr. Ramelan Surabaya has a good standard operating procedure (SOP) in carrying out its responsibilities, because it is in accordance with the regulations, laws, and SPO (Standard Operating Procedures) that apply in the hospital. This can be seen in providing services and other organizational activities that always follow the applicable laws. The law used as a reference in providing services is Law no. 36 of 2009, Law no. 44 of 2009 concerning hospitals, and PP No. 70 of 2012 concerning the procurement of goods and services. RSAL Dr. Ramelan has its own SOP in carrying out its activities as stated in the decision of the head of the naval hospital, the code of ethics for hospitals in Indonesia, and the code of ethics for the Dr. Naval Hospital. Ramelan. The fragmentation of the bureaucratic structure like this is also reflected in the organizational structure of the BJS Program Control Team, where the organization has units that handle many things such as the Head of Yansep, Head of Input, Head of Code, and others. Ramelan. The goal is to spread responsibility for sharing activities in several work units in accordance with their respective fields

### REFERENCES

- 1) Abdelhak, M.; Grostick, S.; Hanken, M.A. (2011). *WB. Saunders Company. Health Information: Management of A Strategic Resource*. Sydney: WB. Saunders Company.
- 2) Ade Irma, and Agung Suharyanto. 2016. Implementation of the Health Insurance Administration Agency (BPJS) Program in Improving Health Administration Services at Sibuhuan General Hospital, Padang Lawas Regency. *Journal of Public Administration Science* 4 (1) (86-99) <http://ojs.uma.ac.id/index.php/publikauma>
- 3) Agung Julipriohadi. 2016. Analysis of Chemotherapy Services for Participants in Social Security Administering Bodies in Carnation Short Care at the "Dharmais" Cancer Hospital with the Lean Method 2015. Postgraduate Study Program for Hospital Administration Studies, Department of Health Administration and Policy, Faculty of Public Health, University of Indonesia.
- 4) Agustina, I.E; Hastuti, A.P.; Mulyono, S. (2010). "Overview of the Outpatient Service Procedure Flow of Jamkesmas Participants at the Karanganyar District Hospital". *Journal of Health* <http://ejurnal.stikesmhk.ac.id>
- 5) Bastin Nur Aliefia, Gamasiano Alfiansyah, et al. 2020. Analysis of the Length of Time for Providing Outpatient Medical Record Files for Old Patients at the Surgical Oncology Polyclinic at Dr. Rsal. Ramelan Surabaya 2020. *Journal of Medical Records and Health Information* Vol. 2 No. December 1, 2020.
- 6) BPJS Health. 2014. Bridging System Shortens Service Queues. *BPJS Health Info Bulletin*. Edition X. Jakarta: BPJS Health.
- 7) Social Security Administering Body (BPJS). 2014. Technical Guidelines for Claims Verification of the Directorate of Services. Jakarta: Social Security Administering Body (BPJS)
- 8) Choiri Suhaila, and Drs. Ari Subowo, M.A. 2016. Implementation of the BPJS Health Program at the Bandarharjo Health Center, North Semarang. Page: <http://www.fisip.undip.ac.id> email [fisip@undip.ac.id](mailto:fisip@undip.ac.id)
- 9) Hasrillah, Yaqub Cikusin, et al. 2021. Implementation of Public Health Services through the BPJS Health Program (Study at the Kedungkandang Public Health Center, Malang City). Department of State Administration, Faculty of State Administration, Islamic University of Malang, *Journal of Research Innovation* Vol.1 No.12 May 202.
- 10) Ignasia Suryani, and M. Harun Al Rashid. 2021. Policy Implementation of the Health Social Security Administering Body (Bpjs) at the Bekasi Regency General Hospital. Volume (9) Issue 2, Year (2021).
- 11) Indonesian Ministry of Health. 2013. Exposure Material for National Health Insurance (JKN) in the National Social Security System (SJSN). Jakarta: Ministry of Health of the Republic of Indonesia.
- 12) Indonesian Ministry of Health. 2014. Guidelines for Assistance for Accreditation of First Level Health Facilities, Jakarta: Directorate General of Health Efforts.
- 13) Laili Rahayuwati, Kusman Ibrahim, et al. 2017. Treatment Options for Chemotherapy Breast Cancer Patients: A Case Study. *Indonesian Journal of Nursing*, Volume 20 No.2, July 2017, pp. 118-127.
- 14) Litjan Poltak Sinambela, et al. 2011. *Public Service Reform Theory, Policy, Implementation*. Jakarta: Earth Literacy.
- 15) Masadib Akmal Vyandri. 2016. Implementation of the BPJS Health Policy in the City of Surabaya (Study on PBI Health Insurance Participation in Accessing Health Services). *PAP: Journal of Public Administration Research* 1586 October 2016, Vol. 2 No. 2, p. 343 – 354.

## Policy Implementation of Social Security Providing Agency in Serving Outpatient Patients in Oncology Poly Rspal Dr. Ramelan Surabaya

- 16) Merilee S. Grindle in (Subarsono 2013), defines that her view on implementation in general is the task of implementation is to make a link that facilitates policy objectives 5 (1), 33-38.
- 17) Moleong, L.J, 2020. Qualitative Research Methodology/ Lexy J. Moleong. Ramaja Rosdakarya
- 18) Mulya Elvira. 2021. Obstacles to the Implementation of Bureaucratic Trimming Policies in the Bukittinggi City Government. Institute of Internal Governance, Journal of Government Policy 4 (1) (2021): 1-13.
- 19) Muhammad Dahlan, Laksono Trisnantoro, et al. 2017. Evaluation of the results of the implementation of the JKN Program on Servants of Stroke Patients treated at the Stroke Unit of the PPK II Hospital. Gajah Mada University.
- 20) Nazarwin Saputra, and Chairunissa. 2020. Implementation of the Chronic Disease Management Program (Prolanis): A Case Study at the Ciputat Health Center. Public Health Study Program, University of Muhammadiyah Jakarta, JUMANTIK Journal Vol. 5 No. 1 Dec 2019 – May 2020.
- 21) Noviatry, L. Wahyu and Sugeng. Analysis of Factors Causing Delay in Submission of BPJS Claims at Panti Nugroho Hospital. Journal of Vocational Health. Vol. 1 No.1-October 2016. ISSN 2541-0644.
- 22) Nur Hasan. 2019. Implementation of Health Services to BPJS Recipients (Social Security Administering Body). Journal of Social and Political Sciences Public Administration Study Program, Tribhuwana Tungadewi University Vol. 8 No. 4.
- 23) Nuryati, and Savitri Citra B, et al. 2016. Obstacles in the Implementation of the JKN Program Related to Paein Recipients, Medical Data Processing, Reporting and Funding of JKN at Puskesmas Gondokusuma II Yogyakarta. Indonesian Journal of Health Information Management Vol. 4 No.1 March 2016 ISSN: 2337-6007 (online); 2337-585 X.
- 24) Parsons, Wayne. 2006. Public Policy: Introduction to Policy Analysis Theory and Practice. Jakarta. Kencana Prenada Media Group.
- 25) Regulation of the Minister of Health of the Republic of Indonesia Number 76 of 2016 concerning Indonesian Case Base Groups (INA-CBG) Guidelines in the Implementation of National Health Insurance. Jakarta: Minister of Health of the Republic of Indonesia.
- 26) Regulation of the Minister of Health of the Republic of Indonesia Number 28 of 2014 concerning Guidelines for the Implementation of the National Health Insurance Program.
- 27) Regulation of the Minister of Health of the Republic of Indonesia Number 52 of 2016 concerning Health Service Tariff Standards in the Implementation of the Health Insurance Program
- 28) RI Presidential Regulation Number 82 of 2018 concerning Health Insurance. prank. A.M.W., and Vidhyandika. 1996. Empowerment: Concepts, Policy and Implementation, edited by: Onny S.P. and Prank. Jakarta: Center of Strategic and International Studies.
- 29) Prastowo, Andi. 2011. Qualitative Research Methods in the Perspective of Research Design. Yogyakarta: Ar-Ruzz Media.
- 30) Setiawan, et al. 2014. A Review of the Causes of Delay in Claiming the National Health Insurance (JKN) for Outpatients at Panti Waluyo Hospital, Surakarta. Journal of Medical Records, ISSN 1979-9551 Vol.VIII No.2 October 2014:43-48.
- 31) Subarsono. 2006. Public Policy Analysis: Concepts, Theories, and Applications. Yogyakarta: Student Library.
- 32) Sugiyono. 2011. Educational Research Methods. Alfabeta. Bandung.
- 33) Suhaila, C and Subowo, Ari. 2017. Implementation of the BPJS Kesehatan Program at the Bandarharjo Health Center, North Semarang, Indonesian Journal of Public Policy and Management Review, Diponegoro University.
- 34) Suharto, Eddie. 2008. Qualitative Research Methods and R & D, Bandung: CV. Alfabeta.
- 35) Suprpto, and A. Abdul Malik. 2019. Implementation of the Discretionary Policy in Health Services Health Insurance Administration Agency (BPJS). Scientific Journal of Health Sandi Husada Vol.7, Issue,1, pp. 1375-1377, <https://akper-sandikarsa.e-journal.id>
- 36) Tiur Rajagukguk, and Happy Siregar. 2019. Analysis of BPJS Health Policy Implementation Against Health Center Services (Type of Care) in Medan City. Journal of Management Volume 5 Number 2 (2019) <http://ejournal.lmiimedan.net>.
- 37) Wayne Parsons. 2006. Public Policy: Introduction to Policy Analysis Theory and Practice. Jakarta: Kencana Prenada Media Group.
- 38) Law Number 40 of 2004 concerning the National Social Security System (SJSN)
- 39) Law Number 24 of 2011 concerning the Social Security Administering Body (BPJS).
- 40) RI Law 36 of 2009 concerning Health. RI Law No. 44 of 2009 concerning Hospitals.
- 41) Vriezka Mutiara Arin. 2018. Patient Satisfaction with Emergency Room Services at Rumkital Dr. Ramelan Surabaya City, East Java Province.



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## The Law Enforcement of Mining Sand Material C in Dua Boccoe Sub-District, Bōne Regency Based on Law No 4 the Year 2009



**Maskawati**

Department of Law Science, Institut Agama Islam Negeri Bone, Indonesia

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**ABSTRACT:** The Exploration, construction, mining, management, refining, transportation, and sales of C sand mining in the Bōne Regency the development of liars harms the environment and community morals are all part of the frameworks of research, management, and exploitation. The number of illegal sand mining operations increased from 2013 to 2015 despite efforts by the Bōne Regency's legal authorities to eradicate it. In several instances of illegal sand mining in the Bōne Regency, there was no legal procedure. In order to implement law enforcement against those involved in illegal sand mining in Dua Boccoe District, Bōne Regency, and to ascertain the extent of the government's role in controlling it, this study was conducted. Direct study at the site or location being studied falls under the category of field research. The amount of discussion about the consequences of lying sand mining in Bōne Regency for the community and the impact of such mining must be increased, and efforts must be made to apprehend those who engage in such mining rather than taking preventive action.

**KEYWORDS:** Law Enforcement, Sand Mining, Minerals C

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### I. INTRODUCTION

Humans play a significant role in the environment and affect their environment. Both meet the necessities of life, such as food, clothing, and shelter. The growth and development of human thought are related to technological developments that can negatively and positively impact the environment. Indonesians are indeed required to protect and improve the environment so that it can continue to be a source of life for Indonesians (Salim HS 2005). Utilization of natural potential in each region can be done for anything and anyone, but rules and norms must be adhered to and agreed upon. Excavated C is a mining material usually used for infrastructure development and private, private, and government buildings (Andriana 2021; Siburian 2016; Surya 2019). Excavated rock, also referred to as class C minerals, is crucial for infrastructure development, particularly for the establishment of road infrastructure facilities, the building of homes, and the construction of office buildings. The rise of sand mining carried out by community members can have a positive or negative impact; small-scale miners still have to pay attention to geological and legal aspects because much of small-scale mining do not / do not heed this matter. Such as the many related legal aspects in the form of permits, spatial or regional arrangements, including policies on zoning, land, control, pollution, and reclamation, as well as customary law. This must be done by everyone who conducts mining business to protect and preserve the environment. Chapter 65 point (1) of Law Number 4 of 2009 concerning Mineral and Coal Mining that business entities, cooperatives, and individuals who will carry out mining must meet administrative, technical, environmental, and financial requirements.

In accordance with regional laws or other regulations, local governments issue permits, which serve as proof of legality and permit holders to engage in specific commercial or recreational activities (Y. Sri Pudyatmoko 2009). There are various types of permits that we can find in Law Number 4 of 2009 Regarding Mineral and Coal Mining in the form of; Mining Business Permit (IUP), Exploration IUP, Production Operation IUP, People's Mining Permit (IRP), Special Mining Business Permit (IUPK), Exploration IUPK, and Production Operation IUPK. Dua Boccoe Subdistrict has various natural resource wealth, which has various potentials for increasing Regional Original Income (PAD) through efforts to utilize potential natural resources (SDA), namely minerals. By increasing revenue for the area and examining potential sources of regional income in the field of regional taxation, it is possible to finance the implementation of regional government and enhance community services. Dua Boccoe Sub-district has various mineral resources scattered in several areas, mainly sand and stone.

Due to the Dua Boccoe Sub-mineral district's C's significant potential, both private individuals and corporate entities have engaged in numerous mining-related activities. The mining operations conducted need to be authorized. This does not rule out

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the possibility that illegal mining activities often escape the government's attention as the party authorized to issue permits. One of the concrete examples of excavation C comes from Pakkasalo Village, Dua Boccoe District, Bõne Regency. In this village, all of the C minerals are explored and managed by the private sector. The management by the private sector certainly brings in revenue for the region, directly related to the location and local government. Those directly related to the excavation site feel there is an advantage. Because the location of excavation C in this area is very close to community (village) settlements, the manager usually provides opportunities for the surrounding village community to earn a living by working as unskilled "sand collectors" in the C excavation. The Based Article 41 Number 4c of Regional Regulation Number 2 of 2013 concerning the Regional Spatial Plan of Bõne Regency reads: "Natural sandy gravel commodities are determined in parts of Sibulue District, Ajangale sub-district, part of Palakka sub-district, and part of Kajuara District". It has been stated that among several sub-districts in Bõne Regency, Dua Boccoe is not included as an area/area that is allowed to carry out non-metal mineral mining. So, business actors should not be allowed to carry out mining C excavation in Dua Boccoe District because the regional regulation clearly states which areas are allowed to conduct mining business for mineral C, sandy gravel commodity.

The problem that then arose from the mining business in Pakkasalo Village, Dua Boccoe District, was the damage to the road where the road was the main road for drivers was traversed by the vehicle transporting excavation C from the mine site to the consumer; this was due to the capacity of the road before the presence of excavation C in the mining area. This area is still covered with rough asphalt (not Hotmik), so it cannot withstand the load on it, which is passed by large trucks every day, so the only road to the village where excavation C is located is badly damaged. In addition, the environmental impact generated by mining activities must also be considered because there have been many cases around the mining area experiencing damage. This is also inseparable from the conditions in the area because mining activities are carried out without any direction for environmentally sound mining, both in the mining sector and the surrounding community. Hence, the risk of geological disasters that will be caused is very high, such as landslides. To minimize the impact of mining activities without permits. carried out by the community, the government has the authority to enforce the law by referring to Article 158 of Law Number 4 Year 2009 concerning Mineral and Coal Mining which reads "everyone who carry out a mining business without an IUP, IPR, or IUPK as referred to in article 37, article 40 paragraph (3), article 48, article 67 paragraph (1), article 74 paragraph (1) or (5) shall be subject to a maximum imprisonment of 10 years and a maximum fine of Rp. 10,000,000,000.00 (ten billion)". With the intention that the state and society The Dua Boccoe Subdistrict area is not permanently harmed by the actions of people or groups of perpetrators of illegal sand mining crimes, which saves the country from the threat of economic loss and raises its dignity of the country.

### **II. RESEARCH METHOD**

The method comes from the Greek methods, consisting of two words, meta, which means to go, though, and to follow. At the same time, hodos is the way, way, and direction. So the meaning of the word Methodos is a scientific method that does something according to specific rules (Juliansyah Noor 2014). Such as in the preparation of research that uses several methods as follows: This study used field research, where the researchers directly gathered information from interview subjects or respondents who had something to say about law enforcement. Against Mining of Mineral C Sand in Dua Boccoe Subdistrict, Bõne Regency based on Law No. 4 of 2009 in Bõne Regency. Based on the problems studied by the author, the research method used is juridical empirical. The empirical juridical legal research method is carried out by looking at the reality in practice. This approach is also known as the sociological approach, carried out directly in the field (Soekanto, Soerjono 2009).

### **III. RESULT AND DISCUSSION**

Natural resources abound in every district and region of the Unitary State of the Republic of Indonesia. Oil, coal, tin, gold, sand, and minerals are the foundation of wealth. The government controls and owns wealth for the benefit of its citizens (Adrian Sutedi 2012). Based on the 1945 Constitution of the Republic of Indonesia, optimizing the wealth of natural resources on land and at sea has the potential for economic progress and improvement of the Indonesian nation. Mineral mining is the extraction of minerals from rocks or seeds that does not involve the use of geothermal energy, natural gas, or groundwater. The Republic of Indonesia is a country with abundant natural resources and contains a variety of minerals. Based on Article 1 of Government Regulation No. 27 of 1980 concerning the classification of minerals, they are classified into 3 groups, namely:

1. Group A or strategic minerals included in these minerals are petroleum, liquid bitumen, natural wax, natural gas, solid bitumen, asphalt, anthracite, coal, uranium, radium, thorium, and other radioactive minerals such as nickel, koalt, tin.

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2. Group B or vital minerals included in these minerals are iron, manganese, molybdenum, chromium, tungsten, vanadium, titan, bauxite, copper, lead, zinc, gold, platinum, silver, mercury, diamond, arsine, antimony, bismuth, yttrium, ruthenium, cerium and other rare metals.

3. Group C or minerals that do not include minerals A and B; nitrates, phosphates, rock salt (halite), asbestos, talc, mica, graphite, magnesite, yarosit, leucite, alum, ocher, gemstones, semi-precious stones, quartz sand, kaolin, feldspar, gypsum, pumice bentonite, tras, obsidan, pearlite, diatnome, Fullers earth, marble, slate, limestone, dolomite (Salim 2012).

Everyone carrying out mining business activities must obtain a permit from a competent authority. Without such a permit, the person carrying out the mining business can be qualified as illegal mining. Perpetrators of mining criminal acts can be charged in article 158 of Law Number 4 of 2009 concerning Mineral and Coal mining which reads as follows "everyone who conducts mining business without IUP, IPR or IUPK as referred to in article 37, article 40 paragraph (5) shall be sentenced to a maximum imprisonment of 10 years and a maximum fine of Rp. 10,000,000,000.00 (Ten billion rupiah).

### 1. The Government's Role in Controlling Illegal Sand Mining in Indonesia Dua Boccoe District, Bōne Regency

Licensing is one of the administrative instruments used as a means in the field of prevention and control of environmental pollution. Licensing in the mining sector is associated with the granting of mining authorizations. Based on article 2 of government regulation number 32 of 1969, mining authorization is given in the form of:

- a. Mining assignment decree, namely mining authorization granted by the minister to government agencies to carry out mining business.
- b. People's mining permit decree, namely mining authorization granted by the minister on a small scale and with a minimal area.
- c. Decree on granting mining authorization, namely mining authorization granted by the minister to state companies, regional companies, other midwives, or individuals to carry out mining businesses (Suparto 2005, 32).

Provision of Mining Business Licenses for Metal Mineral and Coal Exploration: Administrative, Technical, Environmental, and Financial Requirements:

#### 1. Administrative Requirements

a. Company:

- 1) application letter signed on stamp duty by the board of directors Business entity;
- 2) The make-up of the board of directors and the shareholders' list; and
- 3) copy of domicile certificate.

b. Cooperative:

- 1) application letter signed on stamp duty by the chairman of the cooperative;
- 2) the composition of the management; and
- 3) copy of domicile certificate

c. Individual:

- 1) application letter signed on stamp duty; and
- 2) copy of domicile certificate.

d. Firms and limited partnership companies:

- 1) application letter signed by the company management;
- 2) composition of management and list of shareholders; and domicile certificate

#### 2. Technical Requirements

- a. Curriculum vitae and statement letter of the most experienced mining and geological expert with at least 3 (three) years; and
- b. WIUP map with geographical coordinates of latitude and longitude according to the National Geographic Information System (GIS).

3. **Environmental Requirements Stamped statement letter to comply with the provisions of laws and regulations in environmental protection and management.**

#### 4. Financial Requirements

- a. Proof of placement of exploration seriousness guarantee; and
- b. Proof of payment of compensation value for WIUP information data.

The granting of authority to regions (districts/municipalities is) an acknowledgment which is confirmed by the existence of Chapter IV: regional authority, but chapter III of Law Number 32 of 2004 concerning Regional Government entitled the division

## **The Law Enforcement of Mining Sand Material C in Dua Boccoe Sub-District, Bõne Regency Based on Law No 4 the Year 2009**

of government affairs, is more regulatory than acknowledgment, even though in article 10 paragraph (1) it is stated that "local governments carry out government affairs under their authority unless government affairs are determined by this law to be government affairs." Indonesia is one of the world's countries with many natural resources, both renewable and non-renewable. Non-renewable types of natural wealth an example is natural resources in the form of mining. There are many types of mining materials in Indonesia, including sand. In carrying out the control of sand mining, to avoid deviations in the implementation of tasks, the organizational structure and a clear division of functions and tasks are essential factors that can reduce the occurrence of irregularities. Control policies, especially in the field of sand mining, can be in the form of written or unwritten provisions. However, for the implementation of supervisory duties to run well, it is better if the implementation details are carried out in writing. This is intended to make it easier to evaluate the implementation of the work because there is written evidence.

### **5. Implementation of Law Enforcement Against Sand Mining Actors Illegal in Dua Boccoe District, Bõne Regency**

The advancement of the law's completion as it is, supervision of its application to ensure there is no violation, and, in the event of a violation, restoration of the law that has been broken so that it can once again be enforced. However, due to numerous influencing factors, enforcing the law is not always simple. These factors are as follows:

- a. legal factor itself, in which it is limited to the law only
- b. Law enforcement factors, namely the parties that form and apply the law.
- c. Factors of facilities or facilities that support law enforcement
- d. Community factors, namely the environment in which the law is enforced or applied
- e. Cultural factors, The namely works of creativity and taste based on the human initiative in social life (Suparto 2005).

The goal of law enforcement is to oversee the proper application of the law and ensure that no violations occur. A mining area has mineral and coal potential after being referred to as WP and is unrestricted by government administrative boundaries that are a part of the national spatial layout. The emergence of the term industrial minerals for group C minerals is because, psychologically, the minerals belonging to group C are considered not strategic and not vital. Judging from their functions and uses, group C minerals can be divided into:

- a. Construction excavated materials, namely those fully used as filling and building materials. Includes: sand, gravel, limestone, andesite, granite, quartz sand and marble
- b. Industrial minerals, namely minerals that become industrial raw materials. Includes: zeolites, semi-precious stones, bentonite and ocher.

The state has the legal authority to manage the earth, the water, and the natural resources found there, including mining. As a result, anyone planning to engage in mining operations must first request permission from the state or government. From this definition, it can be inferred that sand mining is a prohibited act under the law, and that anyone who violates the prohibition by engaging in mining activities, specifically sand mining without a permit from the government and harming the surrounding environment, will face threats (sanctions) in the form of specific crimes. The form and organization of mining companies through "People's Mining" is not stated in detail in the Law on Mining and Coal. However, it is stated in the Law on Principal Mining Article 5 letter (h). Furthermore, community mining is described in Article 11 of Law Number 11 of 1967 concerning Basic Mining Provisions, namely:

- a. People's mining aims to provide opportunities for the local people to cultivate minerals to participate in developing the country in the mining sector with the government's guidance.
- b. People's mining is only carried out by local people who hold mining rights (permits) for People's Mining.
- c. Provisions regarding People's Mining and the methods and conditions for obtaining a People's Mining Authorization (permit) are regulated in a Government Regulation.

In handling out law enforcement efforts against illegal sand mining in the Dua Boccoe District, Bõne Regency, several laws and regulations governing this matter have been set. However, there are still challenges with implementation, including:

- a. Lack of Legal Awareness in the Community

Legal awareness is a factor in legal discovery. Awareness of the law means awareness that the law is the protection of the interests of the community. The emergence of the law is essentially due to conflicts or conflicts between human interests. In protecting each other's interests, humans in society must remember, consider, maintain and respect the interests of other human beings so that there is no conflict or harm to other parties or people. Other, so legal awareness should be what we do or do and what we do not do or do, especially to other people. This means being aware of our legal obligations to other people and the state. Increasing numbers of actions are being taken that are in violation of the laws regulated by the Act due to a lack of legal awareness in the community.

- b. Lack of Public Knowledge of the Impact of Mining Sand Illegally

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Some people do not understand the environment and the importance of a sustainably maintained environment; sand mining provides benefits and causes problems. Public knowledge about licensing for sand mining is also felt to be lacking, which has resulted in increasingly widespread mining; economic factors faced by the community also drive this and mining activities that use heavy equipment that functions to dredge materials cause ecological and social problems for the surrounding environment (M. Ashraf et al. 2011; M. A. Ashraf et al. 2011; Gavriletea 2017). Law enforcement, especially criminal law enforcement, is a process of implementing the law to determine what is lawful, with which one can be punished or punished according to the provisions of material criminal law, with instructions on how to act and the efforts required for the smooth implementation of good law, before and after unlawful acts occurred following the provisions of formal criminal law (Dwiyana 2017). The following factors influence law enforcement:

- a. The legal factor itself is that the laws and regulations are still Unclear or incomplete so that there is difficulty in finding Guidelines and fundamental laws and regulations in dispute resolution.
- b. Law enforcement factors, namely the parties that form or apply the law. What is meant by law enforcement here are those who are directly involved in law enforcement which not only includes "law enforcement" but also "peace maintenance". Law enforcers include those who work in the fields of justice, prosecutors, police, lawyers and correctional facilities. Law enforcers, as mentioned above, have an essential role in resolving a dispute.
- c. Factors of facilities or facilities that support enforcement  
These resources or facilities include well-trained and competent employees, efficient operations, suitable resources, and so forth. Law enforcement cannot be carried out efficiently without these facilities.
- d. Community factor  
Specifically, the setting in which the law operates or is applied. The goal of law enforcement, which is a community institution, is to bring about social peace.
- e. Cultural factors  
Specifically as a result of labor, originality, and taste based on individual initiative in social life. The law is a system, or a component of the community system, that combines structure, content, and culture. The values that underlie the relevant law are part of the legal culture (system), and these values are conceptions. The abstract notion of what is deemed acceptable and what is deemed inadequate (so avoided) (Dwiyana 2017). These five factors are closely related to each other because they are the essence of law enforcement and are benchmarks of the effectiveness of law enforcement. Material crime, with instructions on how to act and the efforts that must be made for the smooth implementation of the law before and after the unlawful act, occurs following the provisions of formal criminal law.

### IV. CONCLUSION

The licensing is one of the administrative instruments used as a means in the field of prevention and control of environmental pollution. Licensing in the mining sector is associated with the granting of mining authorizations. Based on article 2 of government regulation, number 32 years 1969 The granting of authority to regions (regencies/municipalities is) recognition which is confirmed by the existence of Chapter IV: regional authority, but chapter III of Law Number 32 of 2004 concerning Regional Government entitled the division of government affairs, is more regulatory than recognition, although in Article 10 Paragraph (1) states that "local governments carry out government affairs under their authority unless government affairs are determined by this law to be government affairs". In the implementation of the control of the sand mining, in order to avoid deviations in the implementation of tasks, the organizational structure and a clear division of functions and tasks are essential factors which can reduce the occurrence of deviations. Control policies can take the form of written or unwritten provisions, particularly in the context of sand mining. The goal of law enforcement is to carry out the law as it is, monitor its application to ensure there are no violations, and, in the event that there are, fix the law in question so that it can once again be enforced. The goal of law enforcement is to oversee the proper application of the law and ensure that no violations occur. There would be additional attempts to reinstate the corrupt institution. There will be additional attempts to reinstate the broken law. A mining area, from now on referred to as WP, is a region with the potential for coal and minerals that is not restricted by administrative boundaries of the government and is a part of the national layout.

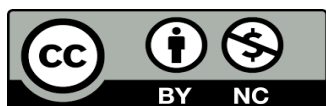
### REFERENCES

- 1) Adrian Sutedi. 2012. *Hukum Pertambangan*. Jakarta: Sinar Grafika.
- 2) Andriana, Apep. 2021. "Penegakan Hukum Terhadap Kegiatan Tambang Galian C Ilegal Di Kabupaten Wakatobi." *Sultra Research of Law* 3(2): 37–44.



## The Law Enforcement of Mining Sand Material C in Dua Boccoe Sub-District, Bōne Regency Based on Law No 4 the Year 2009

- 3) Ashraf, Muhammad et al. 2011. "Sand Mining Effects, Causes and Concerns: A Case Study from Bestari Jaya, Selangor, Peninsular Malaysia." *Scientific research and essays* 6: 1216–31.
- 4) Ashraf, Muhammad Aqeel, Mohd Jamil Maah, Ismail Yusoff, and Abdul Wajid. 2011. "Sand Mining Effects , Causes and Concerns : A Case Study from Bestari Jaya , Selangor , Peninsular Malaysia." 6(6): 1216–31.
- 5) Dwiwana, Achmad Hartanto dan Suyoto. 2017. "Penanganan Kasus Penambangan Galian C Ilegal Di Kawasan Pegunungan Kendeng Selatan Dan Pegunungan Kendeng Utara Di Kabupaten Pati." In *Prosiding Seminar Nasional Publikasi Hasil-Hasil Penelitian Dan Pengabdian Masyarakat*, , 107–22.
- 6) Gavriletea, Marius Dan. 2017. "Environmental Impacts of Sand Exploitation . Analysis of Sand Market."
- 7) Juliansyah Noor. 2014. *Metodologi Penelitian*. Jakarta: Kencana.
- 8) Salim. 2012. *Hukum Pertambangan Mineral & Batu Bara*. Jakarta: Sinar Grafika.
- 9) Salim HS. 2005. *Hukum Pertambangan Di Indonesia*. Jakarta: Rajawali Press.
- 10) Siburian, Nova Yanti. 2016. "Penegakan Hukum Terhadap Pertambangan Pasir Bahan Galian c Di Kabupaten Kuantan Singingi Berdasarkan Undang-Undang Nomor 4 Tahun 2009 Tentang Pertambangan." *JOM Fakultas Hukum* 3(2): 1–15.
- 11) Soekanto, Soerjono, Sri Mamudji. 2009. *Penelitian Hukum Suatu Tinjauan Singkat*. Jakarta: Raja Grafindo Persada.
- 12) Suparto, Wijoyo. 2005. *Hukum Lingkungan Kelembagaan Pengelolaan Lingkungan Di Daerah*. Surabaya: Airlangga University Press.
- 13) Surya, Achmad. 2019. "Penegakan Hukum Terhadap Pertambangan Galian C Tanpa Izin Di Kabupaten Bener Meriah." *RESAM Jurnal Hukum* 5(2): 126–40.
- 14) Y. Sri Pudyatmoko. 2009. *Perizinan, Problem Dan Upaya Pembenahan*. Jakarta: Gramedia Wediasarana Indonesi.



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## 4<sup>th</sup> Industrial Revolution: Skills Sets for Employability of Business Graduates in Bangladesh



**Wahida Akther**

Assistant Professor & MBA Coordinator, Department of Business Administration, Leading University, Bangladesh.

**ABSTRACT:** This paper aims to find out whether the current business graduates of Bangladesh are ready to perform in the new era of Industry 4.0 by unearthing the lacking of their skill sets. Industry 4.0 will bring new implementation and integration of technologies which will be very difficult for business graduates to adapt without adequate skills needed for Industry 4.0. After conducting an extensive literature review a skill set has been revealed to help the business graduates for better employment opportunities in the new environment of Industry 4.0. However, after completing the whole study, it is clear that there is a huge gap between the skills that have in our current business graduates and the skills required for better employability in Industry 4.0. Current business graduates mainly have lacking in three areas: Knowledge of AI, Cognitive Flexibility, and Data Analysis skills. Recent business graduates indicate inadequate facilities as a barrier to developing the skills needed for Industry 4.0. Although lack of interest, lack of awareness and additional cost also work as a barrier to developing the needed skills. After finding out the skill gap of current business graduates this study recommends some important measures to optimize the skill gap.

**KEYWORDS:** Industry 4, Skills Set, Revolution, Employability, Business Graduates, Bangladesh.

### I. INTRODUCTION

In the 21st century, the pattern of business is changing. The driving force of Industry 4.0 is robotics, AI, virtual reality, block chain, the internet of things, nanotechnology, genomics, biotechnology, cloud computing, 3D printing, big data, and others. As a developing country, Bangladesh has a growing manufacturing base, huge manpower, and creative entrepreneurs. But the country is far behind the automation facility in every sector. However, the industry sector of Bangladesh is mainly based on garments and a few other minor industries and the level of infrastructure is poor enough to cope with the changes of Industry 4.0 (Shibli, 2022). The 4<sup>th</sup> industrial revolution highlights the importance of various digital technologies and how these technologies will be managed. Bangladesh has to be fast enough to formulate policies to govern the use and development of new technologies for grabbing the benefits of Industry 4.0. However skilled human resource is required to support the process of policymaking and implementation. According to different sources, businesses will be key drivers for Industry 4.0, as a result, the government should attract global business giants to step ahead in the competition and the skill base of workers should be developed enough to cope with the changing environment (Nile, 2022). In Bangladesh the nature of jobs in demand will change, many skills available in the market will become invalid, and different new skills have to be learned. As Bangladesh is moving toward Industry 4.0, it is assumed that high-income cognitive jobs and low-income manual jobs will increase in demand. Demographically Bangladesh is mainly youth-based. About 30% of the current population is under the age of 15. This age group has to be developed with proper skills for Industry 4.0. The skill of problem-solving, interpersonal skills, creative thinking, and adaptability will be highly in demand in the upcoming age. However, for the current workforce upskilling and reskilling are required to cope with changes (A. 2022). With automated production, connected machines, big data, AI, smart transport systems, networked supply-chain, production simulation, etc., Bangladeshi businesses can increase the value of products and services, create new revenue streams, reduce labor costs, and expand both local and global markets. But for this, the challenges must have to be considered carefully. To understand the future scenario of Industry 4.0 it is important to understand what employers want and what is the current level of skill sets. Although, it is not surprising that the new upcoming era will call for new skills. It is also a matter of consideration whether our current graduates are equipped with the proper skill to lead the

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upcoming days of automation. This paper will focus on finding the skill sets for business graduates in terms of their employment requirements in Industry 4.0. In Bangladesh, the industries are traditionally running their businesses and moving toward automation and tech-oriented method of business day by day. So there is a possibility that there will be a huge gap between the skills required by employers and the skills of our graduate students. For optimizing this gap, this study will try to develop the skill set for the employability of the business graduates and will try to find out the lacking of the skills of business graduates.

### LITERATURE REVIEW

In the past every industry was run through a manual process but as time passes digitalization and automation occur in every industry and so develop day after day. Now key personnel of every industry focuses on finding out ways of making easy the way they are doing their jobs. As a result, the industry is moving through a development phase from Industry 1.0, Industry 2.0, and Industry 3.0 to Industry 4.0.

The concept of Industry 4.0 came into existence in 2011 from a project in the high-tech of the German government, which focuses on promoting the computerization of manufacturing. At the Hannover Fair, the term "Industry 4.0" was publicly announced in the same year. Since then the journey of Industry 4.0 began (Short History of Manufacturing: From Industry 1.0 to Industry 4.0 – KFactory, n.d.). The characteristics of Industry 4.0 includes convergence of information technology and operation technology, automated machines, artificial intelligence, machine learning, cyber-physical systems enabled by the internet of things, smart factories, and cloud-based architecture. It may appear that the skills of humans will not be needed at all. But in a real sense soft skills and skills that are transferable across functions and organizations cannot be replaced by machines (Sugant, 2022). It will be challenging for enterprises to develop human resources for a completely new environment of Industry 4.0 because more focus is given to technological changes in the organizations but the concern about human resources is ignored. The challenge will be more difficult because of the changing nature of the employment structure, requirements for future industrial employees, managerial staff, and the education process (Saniuk et al., 2021). For dealing with the new era of Industry 4.0 managers have to overcome the barrier of strategy and analysis, planning and implementation, cooperation and network, business models, human resource, and change and leadership (Schneider, 2018). A skill set refers to a specific area of competence, knowledge, experience, and abilities required to do a job (What Is a Skill Set? | Definition and Examples | Resume.Com, 2019). For industry 4.0 the skill set of adapting to and greater communication across production lines, industrial data analysis, and understanding and managing advanced information technology is required in a greater concern to deal with technological integration. The new era of industry 4.0 will be in the favor of the workforce having the skill of monitoring, managing, and optimizing integrated smart manufacturing facilities (Perron, 2018).

Employability refers to the attributes of a person that make that person able to gain and maintain employment (*Employability - Wikipedia*, 2022). The word employability indicates one's ability to get initial employment, maintain current employment, and acquire new employment if needed.

Bangladesh is the fastest-growing economy in South Asia. According to different scholars, the main challenges for Bangladesh in moving toward Industry 4.0 are poor infrastructure, availability of cheaper labor, expensive installation of technologies, lack of government supports, and lack of knowledge (Islam et al., 2018). The problem for Bangladesh is that the skills needed for getting the benefits of industry 4.0 are inadequate till now. The Cisco Digital Readiness Index 2019 and Network Readiness Index (NRI) 2020 indicate that the present initiatives for producing a skilled human resource for industry 4.0 are not sufficient (Nile, 2022). In Bangladesh fourth industrial revolution is a huge threat to unskilled labor. Around 5.7 million unskilled laborers will lose their jobs because of automation in the upcoming days (Masud, 2019). However, 90 percent of the industrial units in Bangladesh are SMEs, who are not able to adapt the emerging technologies and Bangladesh is subject to criticism for its lack of production, labor skills, factory infrastructure, technology applications, and low-level adjustments based on industry development and availability (Bhuiyan et al., 2020)

### DEVELOPMEN OF SKILLS SET REQUIRED FOR INDUSTRY 4 AND EMPLOYABILITY OF BUSIESS GRATUATES

From extensive literature review it has been found out that, followings are the major skills that will be required by business graduates for better employment during Industry 4.0.

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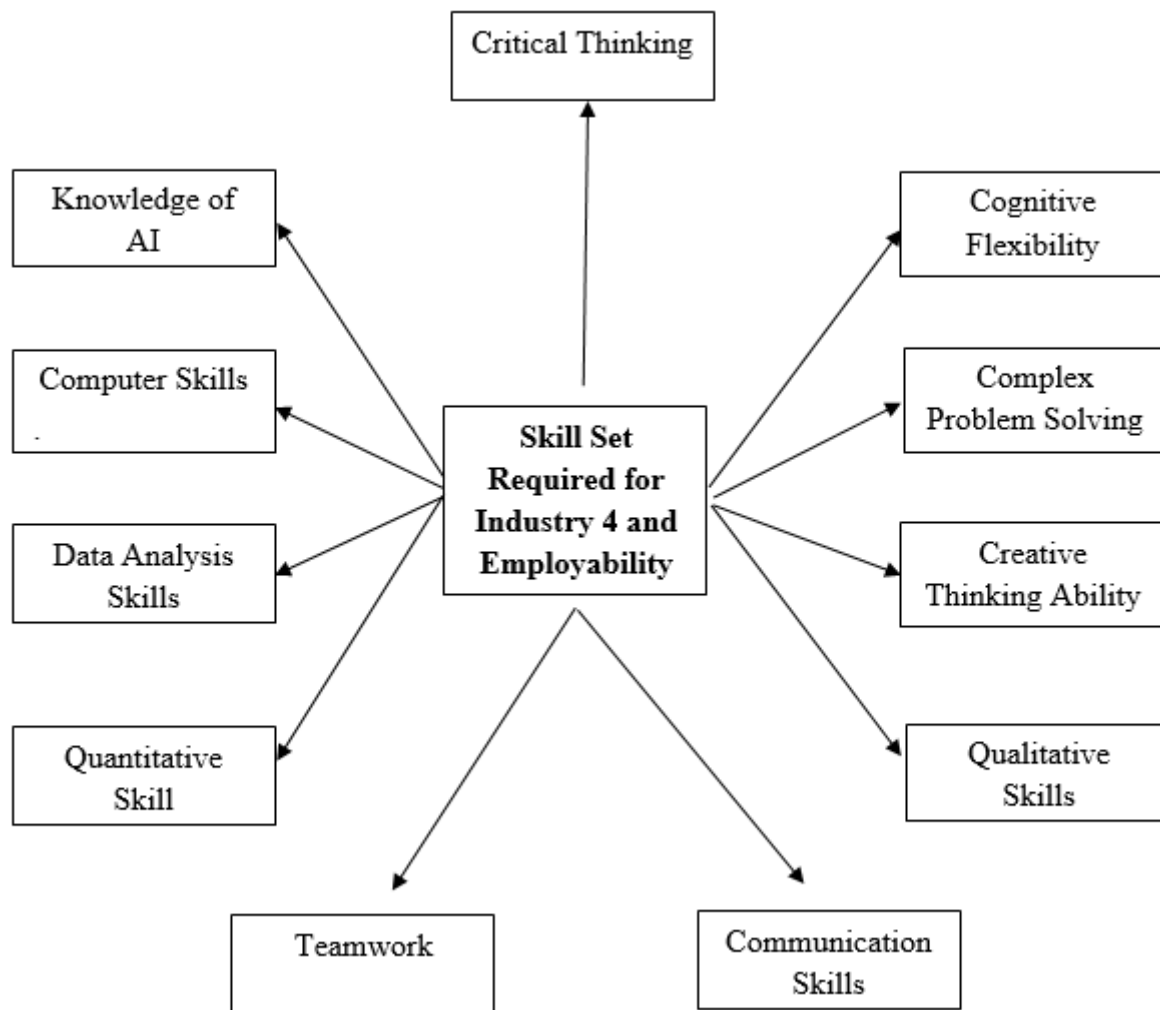


Figure 1: Skill Set Required for Industry 4.0 and Employability of Business Graduates.

For doing any job effectively and efficiently skill sets are important. In this 21<sup>st</sup> century for the upcoming fourth industrial revolution different skills are needed. To deal with the changes and innovations of Industry 4.0 business graduates of Bangladesh must have the following skills:

- **Critical Thinking:** Critical thinking is the analysis of available facts, evidence, observations, and arguments to form a judgment (*Critical Thinking - Wikipedia, 2022*).
- **Cognitive Flexibility:** Cognitive flexibility is the ability to adapt our behavior and thinking in response to the environment (Makowski, 2020).
- **Complex Problem Solving:** Complex problem-solving skill is a collection of self-regulated psychological processes and activities necessary in dynamic environments to achieve ill-defined goals that cannot be reached by routine actions (Dörner & Funke, 2017).
- **Qualitative Skill:** Qualitative skills are those which can be observed, but are not measurable. This is in direct contrast with quantitative skills, which can be measured objectively (McMahon, 2022).
- **Communication Skills:** Communication skills are one of the fundamental life skills which are required for a greater understanding of information. It can be done vocally, visually, non-verbally, and through written media (Khullar, 2022).
- **Teamwork:** Teamwork is the collaborative effort of a group to achieve a common goal or to complete a task most effectively and efficiently (*Teamwork - Wikipedia, 2022*).
- **Quantitative Skill:** It includes the use or manipulation of numbers in different forms and can be applied to everything from the design of evaluation surveys and experiments to the use of digital media, archives, or open data (Khromova, 2020).
- **Data Analysis Skills:** Data analysis skills include the ability to use analytical and logical reasoning to evaluate the collected data (*Data Analysis | Definition, Importance for Career, Ways to Improve, 2016*).

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- **Computer Skill:** Computer skills are the skills and abilities which enable anyone to use computers effectively, including related equipment and computer software (*Computer skills: Definitions and examples | indeed.com* 2021).
- **Knowledge of AI:** Knowledge of Artificial Intelligence (AI) represents how the beliefs, intentions, and judgments of an intelligent agent can be illustrated suitably for automated reasoning (Deb, 2022).

### STUDY OBJECTIVES

This study aims at investigating the skills of graduates for the 4<sup>th</sup> industrial revolution needed in Bangladesh. Another objective includes finding out the gap between the skill sets required in Industry 4.0 and the skills that are possessed by business graduates by highlighting the lacking of different skills. However, this study will also unearth the reasons why business graduates are not able to develop their skill sets for dealing with the new environment of Industry 4.0 and for greater employability.

### DATA SOURCES AND METHODOLOGY

For finding out the gap between the skill sets that are required for industry 4.0 and the skill sets that current business graduates of Bangladesh have, primary data were collected by the extensive distribution of a set of questionnaires. However, secondary data were collected from various published sources including national and international journals, books, relevant websites, etc. Microsoft Excel 2016 has also been used for analyzing collected data and for constructing all necessary tables and figures.

### RESULTS AND ANALYSIS

For this study, data were collected from 117 business graduates from different universities in Sylhet. The collected data have analyzed using Excel 2016 by using descriptive statistics.

#### Demographic Information of Respondents:

The research questionnaires help to find out the demographic information of respondents by unearthing their age and gender. The overall identification of respondents is not conveyed because of safeguarding confidentiality.

**Table 1: Demographic Information of Respondents.**

Total Respondents	No. of	Particulars	Frequency	Percentage
117	Age	Below 25	81	69%
		25-34	26	22%
		35 and above	10	9%
	Gender	Male	97	83%
		Female	20	17%

Table 1 illustrates that a larger segment of the respondents are below the age of 25, which indicates that research covers mostly the fresh business graduates of recent times and it accounts for 69% of the respondents. However, 22% of the respondents are between 25 and 34, and 9% of the total respondents are between 35 and above. Although 83% of our respondents are male, female respondents stand for only 17%.

#### Weaknesses of Required Employability Skills of Business Graduates:

**Table 2: Weaknesses in Skills Required for Employability of Business Graduates for Industry 4.0**

Serial No.	Weaknesses in Skills Required for Employment in 4.0	Frequency	Percentage	Ranks
1	Critical Thinking	5	4%	9
2	Cognitive Flexibility	14	12%	2
3	Complex Problem Solving	6	5%	8
4	Creative Thinking Ability	7	6%	6
5	Qualitative Skills	4	3%	11
6	Communication Skills	5	4%	9
7	Teamwork	7	6%	6
8	Quantitative Skills	9	8%	5

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9	Data Analysis Skills	13	11%	3
10	Computer Skills	10	9%	4
11	Knowledge of Artificial Intelligence	37	32%	1
	<b>Total</b>	<b>117</b>	<b>100%</b>	

Table 2 illustrates the detailed analysis of the collected data, and represents the lacking of skills among business graduates and ranked them based on their frequency. By analyzing the questionnaires it is observed that there is a huge knowledge gap among recent business graduates about Artificial Intelligence. The analysis suggests that 32% of the respondents do not have adequate knowledge of Artificial Intelligence. However, 12% of business graduates do not possess the skill of cognitive flexibility, and 11% of business graduates do not have the skill of analyzing data. In the 21<sup>st</sup> century, it is surprising to know that till now 9% of business graduates have not learned the skills needed to operate a computer effectively. Furthermore, among 8% of our respondents, there is a lack of quantitative skills. For teamwork and creative thinking ability, the percentage stands at 6%. 5% of the respondents cannot solve complex problems, and 4% of business graduates do not know how to communicate effectively in a business climate. The percentage of respondents who do not have the skill of critical thinking is also 4%. Finally, 3% of business graduates do not have qualitative skills.

#### Why Business Graduates were not able to Develop Their Skills Required for Industry 4.0:

**Table 3: Reasons why Business Graduates were not able to Develop Skills Required for Employment during Industry 4.0**

Particulars	Frequency	Percentage
Inadequate Facility	43	37%
Lack of Interest	31	26%
Lack of Awareness	27	23%
Additional Cost	16	14%
<b>Total</b>	<b>117</b>	<b>100%</b>

Table 3 illustrates the reasons why business graduates were not able to develop their skills required for Industry 4.0 with relative frequency and percentage. According to Table 3, 37% of business graduates are deprived of the facilities required for developing the skill sets essential for Industry 4.0. However, 26% of the respondents have not had any interest to develop their skill sets for better employment in the job market. Although, 23% of the respondents were not aware of the importance of acquiring these skills, and 14% of the respondents indicate additional cost as a barrier to their skill development process.

#### RECOMMENDATIONS

For moving toward Industry 4.0 and getting its benefits, the gap between the skills required for Industry 4 and the skills that are currently possessed by business graduates should be at the optimal level. For this the following measures are strongly recommended:

- ✓ Redesigning the traditional education system by integrating different soft skill training facilities within the academic curriculum.
- ✓ Increasing awareness among young people about the skills needed for upcoming days to deal with the new era of Industry 4.0
- ✓ Increasing collaborative efforts by the projection of team-based case study that focuses on solving complex problems.
- ✓ Business graduates should keep on linking what they have learned during their academic study with different real-life situations.
- ✓ Training facilities for computer learning should be implemented in every educational institution by authority or by the government through a collaborative effort with educational institutions.
- ✓ Business students have to focus on network building from their early academic life for improving both verbal and written communication skills.
- ✓ Industry-based qualitative and quantitative skills must be taught during academic life by introducing business students to business culture by enabling them to deal with corporate data and by providing adequate internship facilities.

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- ✓ Different course work should be implemented problem solving that requires extensive thinking in a completely new environment to improve the adaptability of the new environment.

### CONCLUSION

Overall, the findings of the study represent that the business graduates of Bangladesh are not well equipped with the needed skills for Industry 4.0. And there is no doubt that a lack of skills among the business graduates will suffer them a lot in creating better employment because the overall environment and operating system of the industries will change dramatically with innovations and integration. This will result in an increasing rate of unemployment among graduates. However, it will be very challenging to get the immense benefits of Industry 4.0. As a developing economy, Bangladesh is quite difficult to implement the necessary steps for moving toward Industry 4.0 rapidly. As a result, the policymakers of government levels should focus on necessary steps along with making a skillful workforce by providing needed facilities and uprooting the barriers from the key level.

### ACKNOWLEDEMENT

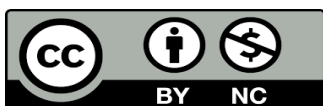
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### REFERENCES

- 1) Shibli, A. (2022, February 12). *The economic impacts of the 4IR on Bangladesh*. The Daily Star. <https://www.thedailystar.net/recovering-covid-reinventing-our-future/blueprint-brighter-tomorrow/news/the-economic-impacts-the-4ir-bangladesh-2960641>
- 2) Nile, M. A.-U.-R. (2022, February 14). *Preparing Bangladesh for the Fourth Industrial Revolution (4IR)*. The Daily Star. [https://www.thedailystar.net/recovering-covid-reinventing-our-future/fourth-industrial-revolution-and-digital-transformation/news/preparing-bangladesh-the-fourth-industrial\(2022, February 15\). 4th Industrial Revolution \(4IR\) and the job market of Bangladesh. Astha IT. https://www.asthait.com/tech-stuffs/4th-industrial-revolution-and-the-job-market-of-bangladesh](https://www.thedailystar.net/recovering-covid-reinventing-our-future/fourth-industrial-revolution-and-digital-transformation/news/preparing-bangladesh-the-fourth-industrial(2022, February 15). 4th Industrial Revolution (4IR) and the job market of Bangladesh. Astha IT. https://www.asthait.com/tech-stuffs/4th-industrial-revolution-and-the-job-market-of-bangladesh)
- 3) Sugant, R. (2022, May 29). *Industry 4.0: Challenges, advantages and the skills you need to shape the future*. Telegraph India. <https://www.telegraphindia.com/edugraph/career/industry-4-0-challenges-advantages-and-the-skills-you-need-to-shape-the-future/cid/1867410>
- 4) *Short history of manufacturing: from Industry 1.0 to Industry 4.0*. KFactory. Retrieved September 03, 2022, from <https://kfactory.eu/short-history-of-manufacturing-from-industry-1-0-to-industry-4-0>
- 5) Saniuk, S., Caganova, D., & Saniuk, A. (2021). Knowledge and Skills of Industrial Employees and Managerial Staff for the Industry 4.0 Implementation. *Mobile Networks and Applications*. Published. <https://doi.org/10.1007/s11036-021-01788-4>
- 6) *What is a Skill Set? | Definition and Examples | Resume.com*. (2019, December 30). Resume.Com Career Advice. <https://www.resume.com/career-advice/resumes/what-is-a-skill-set-and-how-to-develop-one/>
- 7) Perron, G. (2018, April 16). *Industry 4.0 and the new worker skillset explained*. KnowledgeOne. <https://knowledgeone.ca/industry-4-0-and-the-new-worker-skillset-explained/>
- 8) *Employability - Wikipedia*. (2022, August). <https://en.wikipedia.org/wiki/Employability>
- 9) Islam, Md Asadul and Islam, Md Asadul and Jantan, Amer Hamzah and Hashim, Haslinda and Chong, Choo Wei and Abdullah, Mirza Manirajah and Abdul Hamid, Abu Bakar, *Fourth Industrial Revolution in Developing Countries: A Case on Bangladesh* (December 1, 2018). *Journal of Management Information and Decision Sciences (JMIDS)*, Volume 21, Issue 1, 2018, Available at SSRN: <https://ssrn.com/abstract=3417813>
- 10) Masud. (2019, February 14). *What the 4th Industrial Revolution has in store for Bangladesh*. Dhaka Tribune. <https://archive.dhakatribune.com/opinion/op-ed/2019/02/14/what-the-4th-industrial-revolution-has-in-store-for-bangladesh>
- 11) Bhuiyan, A. B., Ali, M. J., Zulkifli, N., & Kumarasamy, M. M. (2020, October 21). *INDUSTRY 4.0: CHALLENGES, OPPORTUNITIES, AND STRATEGIC SOLUTIONS FOR BANGLADESH*. *International Journal of Business and Management Future*, 4(2), 41–56. <https://doi.org/10.46281/ijbmf.v4i2.832>
- 12) *Critical thinking - Wikipedia*. (2022, September). [https://en.wikipedia.org/wiki/Critical\\_thinking](https://en.wikipedia.org/wiki/Critical_thinking)
- 13) Makowski, M. (2020, December 1). *What Is Cognitive Flexibility and How Do I Help My Child With It? - Foothills Academy*. <https://www.foothillsacademy.org/community/articles/cognitive-flexibility>

#### 4<sup>th</sup> Industrial Revolution: Skills Sets for Employability of Business Graduates in Bangladesh

- 14) Dörner, D., & Funke, J. (2017, July 11). *Complex Problem Solving: What It Is and What It Is Not - PMC*. PubMed Central (PMC). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5504467/>
- 15) McMahon, M. (2022, August 19). *What Are Qualitative Skills? (with pictures)*. Practical Adult Insights. <https://www.practicaladultinsights.com/what-are-qualitative-skills.htm>
- 16) Khullar, H. (2022, January 6). *Communication Skills: Definitions and Examples- Talent Economy*. ShineLearning. <https://learning.shine.com/talenteconomy/career-help/communication-skills/>
- 17) *Teamwork - Wikipedia*. (2022, August). <https://en.wikipedia.org/wiki/Teamwork>
- 18) Khromova, Y. (2020, July). *Quantitative Skills: What Professions Require [+Examples]*. <https://www.getcoverletter.com/blog/quantitative-skills-what-professions-require/>
- 19) *Data Analysis | Definition, Importance for Career, Ways to Improve*. (2016, August 12). Cleverism. <https://www.cleverism.com/skills-and-tools/data-analysis/>
- 20) *Computer skills: Definitions and examples | indeed.com*. (2021, May 21). Indeed. <https://www.indeed.com/career-advice/resumes-cover-letters/computer-skills>
- 21) Deb, S. (2022, August). *What is Knowledge Representation in AI? | Different Techniques | Edureka*. Edureka. <https://www.edureka.co/blog/knowledge-representation-in-ai/>
- 22) Islam, M. A. (2022). Industry 4.0: Skill set for employability. *Social Sciences & Humanities Open*, 6(1), 100280. <https://doi.org/10.1016/j.ssaho.2022.100280>



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## Consumer Legal Protection on Electronic Transactions through the Platform without the Collective Account Features by Trusted Third Parties



Syifa Rana Tsary

Faculty of Law, Slamet Riyadi University, Jl. Sumpah Pemuda No.18, Surakarta City, Central Java Province, Indonesia

**ABSTRACT:** This study examines the existence of a marketplace to meet the needs of the e-commerce-based community and legal protection for consumers in the event of a default that harms them due to online transactions without a trusted third-party intermediary as joint account holders. The formulation of the problem discussed is how a marketplace among the public facilitates online shopping, and how is legal protection for consumers who transact without a joint account? The research method used is normative and literature study based on primary materials (laws), secondary materials (scientific works, journals, books, documents, and other literature), and tertiary legal materials (legal dictionaries). The study results are that the ease of transacting online makes people start to depend on the existence of e-commerce platforms and marketplaces with various exciting features. If there is a default in transactions carried out without a joint account, legal protection can be given to consumers through complaints to the Consumer Dispute Settlement Agency), which is resolved through litigation or non-litigation.

**KEYWORDS:** Marketplace, Electronic Transactions, Legal Protection, Joint Account, Good Faith

### I. INTRODUCTION

The formation of law is a set of norms that bind people to obey the rules and maintain the behavior in relationships with other people (Rahardjo, 1991:27). The legal relationship arises according to Article 1313 of the Civil Code (from now on referred to as the Civil Code); "An agreement is an act by which one or more persons bind themselves to one or more other persons." If an agreement is reached between the seller and the buyer, there is a sale and purchase.

The Government has given the parties' position in buying and selling a legal umbrella in Law Number 8 of 1999 concerning Consumer Protection (from now on, referred to as UUPK). According to Article 1 paragraph (2) UUPK, the term buyer states, "Consumer is every person who uses goods and/or services available in the community, both for the benefit of oneself, family, other people, and other living creatures and not for trading." While the term seller, according to Article 1 paragraph (3) UUPK; "A business actor is every individual or business entity, whether in the form of a legal entity or not a legal entity established and domiciled or conducting activities within the jurisdiction of the Republic of Indonesia, either alone or jointly through an agreement to organize business activities in various economic fields."

One of the benefits of technological developments is to receive and provide information quickly, as well as communicate without boundaries of distance, space, and time, resulting in a borderless world and significant social change. In addition, it also contributes to the community, company, or government, especially to the emergence of marketplaces and business networks without boundaries (Rokfa, et.al., 2022:162). The Internet is an intermediary medium of interaction in communicating globally and connecting millions of computer networks via satellite, telephone, and others (Priyanto, 2009). The number of users of e-commerce platforms is increasing and triggering a shift in media consumption patterns because it reaches all circles, so it is used as an accurate strategy in marketing products/services. Besides selling products, Internet media can also be used for endorsement or paid promotion activities by celebgrams and/or influencers who are increasingly doing digital marketing because the promotion has been optimally visualized using photos, videos, posters, and animations (Ramli, et.al., 2020:121) The progress of internet-based cyberspace has also affected the economic sector known as digital economics or digital economy, then gave birth to a new buying and selling system, namely electronic transactions or electronic commerce (e-

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commerce) (Indrajit, 2001:33). The World Trade Organization (WTO) explains that the scope of e-commerce consists of production, distribution, marketing, sales, and delivery of goods or services via electronics.

Digital economics requires business actors to run their business with internet media without the need for a physical store so that they play a significant role in changing the face of trade which was initially conventional, namely the direct buying and selling process between business actors and consumers who are both present on the spot, turning into virtual which is done indirectly or indirectly, without meeting face to face in the place. E-commerce is considered to provide convenience for many parties, especially consumers, to fulfill their needs without having to leave the house, access through a device connected to the internet network, and then choose to use a platform or website that is increasingly mushrooming. In line with the understanding according to Black's Law Dictionary, which explains that e-commerce is an online transaction facility that utilizes the internet primarily related to buying and selling a product (Garner, 2014). The e-commerce platform on social media is a computer-based technology that facilitates ideas, ideas, thoughts, and information through the construction of networks and virtual communities regarding electronic communications, personal information, documents, videos, and photos (Dollarhide, 2020).

At the meeting of the Indonesian E-commerce Association (IdEA), some problems had to be addressed so that the local e-commerce industry could develop; 1) find solutions to the challenges of unstable internet infrastructure and unreliable transportation, and inefficient customs clearance procedures; 2) dependence on cash payments; 3) low consumer confidence and security in conducting online transactions; 4) negative stigma of e-commerce; 5) the government's regulatory support has not been maximized for e-commerce start-ups, tiny and medium-sized businesses, primarily related to tax determination; 6) completion of the e-commerce industry protection plan (<https://id.techinasia.com/solusi-rudiantara-pemerintah-kominfo-masalah-ecommerce-indonesia>). E-commerce must remain subject to the general principles of contract law, namely the principle of good faith contained in Article 1338 of the Civil Code; "Agreements must be executed in good faith." This means that the parties involved must have good intentions in carrying out their obligations.

Law Number 11 of 2008 concerning Information and Electronic Transactions, which was subsequently changed to Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 (from now on referred to as UU ITE), the meaning of electronic transactions in Article 1 paragraph (2) ITE Law; "Legal actions carried out using computers, computer networks and/or other electronic media." E-commerce creates rights and obligations as a legal consequence of the parties' agreement (Priowirjanto, 2014:287). The agreement is in the form of consumer approval for goods and/or services offered by business actors through a display on the website page, also known as the electronic signing process during purchase, inspection, and delivery (Barkatullah & Prasetyo, 2005:VII).

However, progress that provides many benefits cannot be separated from negative impacts, such as product fraud that does not match the description or the product is not delivered to consumers, thus making consumers suffer losses and decreasing the level of trust in the e-commerce system. Although currently, there are many marketplaces offering services as a trusted third party, namely holding the money paid by consumers not to be directly handed over to business actors until the product ordered is received by them. This method is known as a joint account, so consumers don't have to worry if they want to shop online.

Based on the explanation above, the author would like to study further in the research entitled "Consumer Legal Protection for Electronic Transactions Through Platforms Without Joint Account Features by Trusted Third Parties." The problems discussed are; 1) How is a marketplace among the public to facilitate online shopping, and 2) What is the legal protection for consumers who transact without a joint account?

## **II. RESEARCH METHODS**

The method used in this research is the normative method and literature study; the study of research objects based on sources of legal materials that are still relevant, both primary such as related laws and regulations, secondary such as literature and other reading materials, as well as tertiary namely legal dictionaries. Furthermore, these materials are inventoried and researched using positive laws in force in Indonesia (Waluyo, 1991:14). This research is based on the statute approach and descriptive qualitative approach. The qualitative approach creates descriptive data such as written or oral from the informant and attitudes that are considered and not stated in the form of variables or hypotheses (Moleong, 2000:2).

## **III. RESULTS AND DISCUSSION**

### **A. The Existence of a Marketplace in the Community as an Effort to Ease Shopping Online**

Article 1457 of the Civil Code explains, "A sale and purchase is an agreement in which one party binds himself to deliver an object, and the other party pays the promised price." A sale and purchase agreement is an agreement in which the seller

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transfers or agrees to transfer ownership of the goods to the buyer in exchange for a sum of money called the price (Muhammad, 2010:243). Electronic Commerce (e-commerce) is the process of buying and selling or exchanging products, services, and information through computer networks, requiring databases, electronic mail (e-mail), and other non-computer technology, such as; delivery systems and payment methods. The payment method is a method that consumers can use to pay for goods or services to get the product's benefits.

E-commerce was born based on electronic buying and selling contracts between business actors and consumers, which require a legal force like conventional contracts (Rantung, 2022:89). Article 1 number (17) of U ITE explains that; "Electronic Contract is an agreement of the parties made through the Electronic System." Furthermore, it is also regulated in Article 47 paragraph (3) of Government Regulation Number 71 of 2019 concerning the Implementation of Electronic Systems and Transactions (from now on referred to as PP PSTE), at least containing; identity data of the parties; objects, and specifications; electronic transaction requirements; prices and fees; procedures in the event of cancellation by the parties; provisions that give the injured party the right to be able to return the goods and/or request a replacement of the product if there is a hidden defect; and choice of law for electronic transaction settlement."

However, the ITE Law has not accommodated the legal requirements for electronic contracts, so it still refers to Article 1320 of the Civil Code; agree, speak, a specific thing, and a lawful cause. According to Subekti, the sale and purchase agreement was born when an agreement was reached on goods and prices (Subekti, 1995:2). Agree is a critical point contained in the principle of consensual; if it is associated with e-commerce, it can be seen in Article 20 paragraph (1) of the ITE Law; "Unless otherwise specified by the parties, electronic transactions occur when the transaction offer sent by the Sender has been received and approved by the Recipient."

The existence of an e-commerce platform as a means of buying and selling online is closely related to consumer trust in sellers. Trust is built by one party's belief in his integrity and ability. Moorman, Deshpande, and Zaltman also state that trust is a willingness to rely on a trusted partner (Morgan, 1994). Marketplace management is entirely carried out by the platform provider, while business actors only take care of ordering goods or services (Silviasari, 2022:152). Now various marketplaces are competing to provide the best promos and offer to attract consumers, such as; Shopee, Tokopedia, and Lazada, as online marketplace providers (from now on, referred to as "OMP"). OMP is an application or site that provides e-commerce facilities from various existing sources (Utomo et.al. 2022:348).

The steps in e-commerce are business actors upload product catalogs accompanied by detailed descriptions on the site or marketplace. Consumers choose products to be included in the shopping cart after that fill in their data and address in the order format, then make payments that various methods can make; credit card, bank transfer or electronic wallet (e-wallet), Cash on delivery (COD) or Pay later (pay later). A consumer who submits an offer and places an order into a shopping cart, an agreement is reached, although not directly, and the business actor is obliged to send the goods that have been ordered or do what is his obligation. According to Munir Fuady, e-commerce is divided into (Fuady, 408):

- a. Business to Business (B2B): consumers and business actors are companies, not individuals. Usually, this transaction is done to establish cooperation between these companies.
- b. Business to Consumer (B2C): transactions between companies and consumers. Usually use the website is commonly used by the public.
- c. Consumer to Consumer (C2C): transactions between individuals and individuals who sell goods to each other.
- d. Consumer to Business (C2B): transactions that allow individuals to sell goods to companies.
- e. Non-Business Electronic Commerce
- f. Intra-business (Organizational) Electronic Commerce

Factors that cause e-commerce to develop rapidly; 1) e-commerce can reach more customers without a time limit because it can be accessed continuously by consumers; 2) e-commerce encourages the creativity of business actors and the distribution of information quickly and accurately; 3) e-commerce ensures the efficiency of various things and is informative; 4) e-commerce can increase customer satisfaction (Safitri, 1999). Meanwhile, Desruelle and Burgelman mention five other factors, namely; 1) globalization and trade liberalization; 2) increasingly fierce competition; 3) technological developments; 4) physical reduction of goals, and 5) publicity (Desruelle & Burgelman, 2001:485-497).

The existence of the marketplace is felt to be increasing because of the role of the community in the digital era, who are increasingly aware of the sophistication and ease of operating various online platforms to fulfill the needs of daily life. Marketplace shows more flexibility in services that attract consumers, especially if business actors have interesting strategies in promoting their wares so that they spark curiosity for consumers to buy them. E-commerce platforms at least comprehensively

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regulate the use of company data, storage practices, and other responsibilities held by third parties, namely business actors and consumers, regarding data privacy and security (Steinman & Hawkins, 2010:1-9).

### ***B. Legal Protection for Consumers Who Transact without Joint Accounts***

Technological advances that have penetrated the world of trade do not make law as a social engineering tool lose its role when juxtaposed with digital phenomena. According to Laura J and McCoy, the birth of electronic transactions as a business method can create new cyber law norms and standards (Azhari, 2015). This statement carries the connotation that the law will always embellish human life and even continue to fill the dynamics of the changing times so that it opens up opportunities for the birth of new legal norms and standards that play a role in shaping regulations.

The platform's existence in Indonesia has shown how significant its role is to support the needs and lives of the people as a social networking tool and a forum for channeling content and creativity. Its novelty and consistency, which constantly adapts over time, with a display that continues to be packaged, is increasingly attractive and easy to use, making it accessible to users of all ages. There are also more opportunities to use a platform that does not only play a role in connecting relationships but also as a container or distributor of e-commerce, on the one hand being able to increase the efficiency of goods/services transactions and reduce purchasing and producer costs significantly. However, e-commerce has problems and flaws in information security if encryption is not used correctly (Abbasi & Zare, 2016:12-16). The digital transformation issues on e-commerce platforms are based on trust, privacy, and security.

E-commerce offers a variety of payment methods that are expected to provide legal protection for consumers to make transactions more secure, effective, fast, and reliable. One of them uses banking services as a channel of funds for product payments through transfers from consumer accounts to business actors' accounts or called account to account (Makarim, 2008:78). The transaction transfers ownership or enjoyment of goods or services from the goods or service provider to the consumer (Nasution, 1995:37). Business actors must send products paid for by consumers to fulfill achievements on e-commerce agreements. However, there is an understanding that consumers must be ready to bear the consequences of their choices in buying goods and/or services offered by business actors (Samsul, 2004:4, Sjahputra, 2010:48-49).

The rights owned by consumers are contained in Article 4 of the UUPK, including; the right to comfort, security, and safety in consuming goods and/or services; the right to choose goods and/or services, and to obtain such goods and/or services by the exchange rate and the promised conditions and guarantees; the right to correct, straightforward and honest information regarding the situation and warranty of goods and/or services; the right to have their opinions and complaints heard on the goods and/or services used; the right to obtain proper advocacy, protection, and efforts to resolve consumer protection disputes; the right to be treated or served correctly and honestly and not discriminatory; the right to receive compensation, compensation and/or replacement, if the goods and/or services received are not by the agreement or not correctly.

The rights of business actors are contained in Article 6 of the UUPK; "the right to receive payments by the agreement regarding the conditions and exchange rates of traded goods and/or services; the right to obtain legal protection from consumer actions with bad intentions; the right to conduct appropriate self-defense in the legal settlement of consumer disputes; the right to rehabilitate reputation if it is legally proven that traded goods and/or services do not cause consumer losses; rights regulated in other laws and regulations."

An engagement born of an agreement or law creates a legal obligation that the parties must obey (Harahap, 1986:190). Consumers' responsibility in e-commerce is to find and compare information on goods/services needed more freely without being limited by area (borderless) (Dikdik, et.al., 2005:144). It must complete the payment of the price of the goods purchased. The legal terms and norms in the agreement must be by Article 1338 paragraph (3) of the Civil Code, which is dynamic, covering the entire process of the agreement (Syaifuddin, 1993:96); thus, the achievement is carried out adequately based on the principles of good faith and propriety.

The following are the obligations of consumers according to Article 5 of the UUPK; "read or follow instructions for information and procedures for the use or utilization of goods and/or services, for the sake of security and safety; have good faith in making transactions for the purchase of goods and/or services; pay according to the agreed exchange rate; follow the efforts to settle consumer protection disputes properly."

The obligations of business actors according to Article 7 of the UUPK are; "have good intentions in carrying out their business activities; provide correct, clear and honest information regarding the condition and guarantee of goods and/or services as well as provide an explanation of the use, repair and maintenance; treat or serve consumers correctly and honestly and non-discriminatory; guarantee the quality of goods and/or services produced and/or traded based on the provisions of the applicable quality standards of goods and/or services; provide opportunities for consumers to test, and/or try certain goods

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and/or services as well as provide guarantees and/or guarantees for goods manufactured and/or traded; provide compensation, compensation and/or compensation for losses resulting from the use, use and utilization of traded goods and/or services; provide compensation, compensation and/or replacement if the goods and/or services received or utilized are not in accordance with the agreement.”

This is confirmed in Article 1491 paragraph (2) of the Civil Code, which regulates the obligation of business actors to guarantee "there are no hidden defects in the goods, or in such a way as to give rise to reasons for canceling the purchase." Subekti stated that business actors are responsible for hidden defects (*Verborgen gebreken*) for goods sold if the deficiency results in reduced ability to use. Hence, consumers are reluctant to buy them (Subekti, 1992).

Now e-commerce is not only carried out through public platforms but has begun to transform into a marketplace that becomes explicitly a place for buying and selling transactions with various methods and features that make it easier for consumers to find and fulfill their life needs. Marketplace, as a trusted third party in practice, will act as a guarantor of security and consumer protection by providing a joint account feature, in which after the consumer makes a payment by transfer via the virtual marketplace account, the disbursement of funds will be forwarded to the business actor after the consumer receives the goods or services provided—ordered in good condition. The existence of a joint account offers a high sense of trust for consumers when they want to transact online; in addition to making the process easier, it also ensures that consumers can apply for a refund if the goods are not received or are received in conditions that do not match the product description. Thus, if there is a loss, the consumer has a place to complain so that the parties involved in the transaction are not only consumers and business actors but also the marketplace.

E-commerce is not just transactions via the internet but also deals with customer service and partner collaboration (Kumah, 2017). Some conditions are vulnerable to consumer protection through e-commerce platforms, mainly because the agreement only involves two parties without the role of a trusted third party. Hence, the anticipation of losses is minimal for the parties. Even though the marketplace is growing, people are still loyal to using public platforms for buying and selling transactions; for example, on Facebook, in paying for a product, users only need to register a MasterCard or visa to be given a unique pin so that the security of their bank data is guaranteed. This payment method prompted Facebook to create its marketplace and inspired millions of its users to transact privately. This also impacts other platforms such as Instagram, Twitter, or Tiktok. In addition to Facebook, there is also Carousell, a platform that provides a stall feature for business actors to sell their new and used goods. Carousell has no joint account feature; transactions only involve business actors and consumers, so they do not provide payment methods that guarantee consumer protection.

Some people still lack understanding about using a MasterCard or the like because it is easier if the payment is made by transfer from the consumer's account directly to the account of the business actor or instead choose the Cash on the Delivery method (pay on the spot). Thus, even though e-commerce users continue to experience an increase, fear or anxiety about fraud also goes hand in hand; legal protection is still needed for the parties to create optimal protection. It is possible that when carrying out the contents of the agreement, one of the parties breaks the promise; the following four elements are contained in the default (Subekti, 2000:50); 1) Not doing what it's supposed to do; 2) Carry out something but not as promised; 3) Did what was promised, but it was too late; 4) Doing something that according to the agreement should not be done. Therefore, if there is a default, it must be a responsible way of replacing costs, losses, and interest.

Three legal protections must exist in an e-commerce agreement; 1) legal protection for business actors, clear rules regarding the payment period so that they are not blamed if they sell goods/services that have been ordered because the payment deadline is over; 2) legal protection for consumers to obtain goods/services according to the qualifications offered and obtain compensation guarantees if the goods do not match the order; 3) protection of personal consumer data that can be accommodated using a privacy policy or privacy policy.” (Makarim, 2010)

If parties are harmed, then legal protection should be given by giving a sense of security to victims and witnesses (Fajar & Achmad, 2017). One form of protection in Article 38 paragraph (1) of the ITE Law; is "Everyone can file a lawsuit against the party that operates the Electronic System and/or uses Information Technology that causes losses." Furthermore, Article 39, paragraphs (1) and (2) of the ITE Law explain that; "Civil lawsuits are carried out by the provisions of the legislation. In addition to the settlement of civil lawsuits as referred to in paragraph (1), the parties may resolve disputes through arbitration or other alternative dispute resolution institutions by the provisions of the Laws and Regulations."

Consumers have a more vulnerable and weak position when shopping through e-commerce; they only based on feeling and trust that the goods they receive will not disappoint and match the photos displayed in the product catalog. Suppose it turns out that the item is unsatisfactory or even not as expected when buying it at the beginning. In that case, he can send a complaint accompanied by photo or video evidence when unboxing for the warranty claim process.

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The legal protection of e-commerce shows the Government's readiness for the rapid growth of information technology in the digital era. Further, it emphasizes the entry of humans into the business revolution, which is now also digital. However, regulations have not been able to answer concretely the responsibility and legal protection of consumers for their transactions with temporal business actors or through electronic systems.

If the consumer is harmed, the UUPK has made a particular article regarding the form of legal protection in Article 1 paragraph (1) of the UUPK; "Consumer protection is all efforts that guarantee legal certainty to protect consumers." The five principles that form the basis of consumer protection are a benefit, justice, balance, consumer safety and security, and legal certainty. Such legal protection is provided with the aim of; "Improving consumer awareness, ability, and independence to protect themselves; elevating the dignity of consumers by preventing them from the negative excesses of the use of goods and/or services; increasing the empowerment of consumers in choosing, determining, and demanding their rights as consumers; create a consumer protection system that contains elements of legal certainty and information disclosure as well as access to information; raise awareness of business actors regarding the importance of consumer protection to grow an honest and responsible attitude in doing business; improve the quality of goods and/or services that ensure the continuity of the business of producing goods and/or services, health, comfort, security, and safety of consumers." Legal protection can be done before the transaction (no conflict/prepurchase) and/or after the transaction (conflict/post-purchase) (Gunawan, 1999:3):

1. Legislation; consumer legal protection before the transaction through establishing laws and regulations. So it is hoped that the limits and provisions governing transactions between consumers and business actors can guarantee their implementation correctly.
2. Voluntary Self Regulation; consumer legal protection is carried out before the transaction occurs. Namely, business actors are expected to make regulations for themselves to be more careful in running their businesses.

Furthermore, legal protection after the transaction (conflict/post-purchase) can be done through negotiation, consultation, mediation, or expert assessment. Article 19, paragraph (1) of the UUPK stipulates that the business actor is responsible for compensating for the loss to the consumer by returning the consumer's money, exchanging similar products or equivalent to the exchange price, providing health care, or providing compensation. Suppose the business actor is reluctant to take responsibility or provide balance. In that case, a lawsuit can be filed against him through litigation (court) or non-litigation (Consumer Dispute Settlement Agency / BPSK), which is adjusted to the agreement of the disputing parties. The losing party may file an objection to the District Court within a grace period of 14 days from receiving the notification of the BPSK decision. Thus, dispute resolution at BPSK is an alternative to resolving disputes quickly, easily, and cheaply (Nugroho, 2008:99). Quick, because the UUPK stipulates that within a grace period of 21 working days, BPSK is obliged to give its decision. Easy because the administrative procedures and decision-making are straightforward. Cheap lies in affordable court fees.

The implementation of this law has not been maximized because consumers lack awareness about how to defend their rights, especially if goods are purchased at low prices, making them lazy to follow up and consider the problem trivial (Geriya, 2016). Criminal sanctions are also contained in Article 28 in conjunction with Article 45 paragraph (2) of the ITE Law, which states that lying or misleading information about consumers is classified as a prohibited act, and offenders can be sentenced to a maximum imprisonment of six years and even a maximum fine of Rp. 1 billion.

Trading in cyberspace is a transaction across geographical boundaries that connects consumers and business actors from various countries. If a dispute arises, the parties can choose the Online Dispute Resolution (ODR) or online arbitration method to be more practical, low-cost, and effective (Khotimah & Chairunnisa, 17). Online arbitration is the development of non-litigation dispute resolution through Online Dispute Resolution (ODR), which is considered the best way for business people to resolve disputes in the virtual world (Barkatullah, 2010). Online Arbitration and Alternative Dispute Resolution (APS) is not much different from the conventional system, which differs only in using electronic means and their implementation. In online arbitration, case registration, selection of arbitrators, submission of documents, deliberation of arbitrators in the case of an arbitration tribunal with more than one arbitrator, making decisions, and notification of decisions will be made online. APS has advantages;

First, it is not done through the judiciary, so the costs are relatively low. Second, it is faster than court institutions that have to queue because many cases are handled, so it takes longer. Third, the injured party will receive compensation or compensation, meaning that a good relationship between business actors and consumers is restored. Fourth, confidentiality is guaranteed so as not to damage the good name of anyone, whether consumers, business actors, or e-commerce parties. Fifth, handled by parties who are experts in their fields and minimize injustice, such as siding with one party

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## IV. CONCLUSIONS

A growing marketplace with various exciting features makes its existence one of the fulfillment of the needs of people's lives with ease and efficiency, especially as a trusted third party also provides legal protection for consumers with the existence of payment methods through joint accounts, thus building trust to shop online and become mediator if it turns out that there is a default which is detrimental to one of the parties. The legal settlement can be through litigation or non-litigation based on the parties' agreement

## REFERENCES

- 1) Abdul Halim Barkatullah dan Teguh Prasetyo, *Bisnis E-Commerce: Studi Sistem Keamanan dan Hukum di Indonesia*, Pustaka Pelajar, Yogyakarta, 2005.
- 2) Abdulkadir Muhammad, *Hukum Perjanjian*, Bandung: PT. Alumni, 2010.
- 3) Afida Ainur Rokfa, et.al., *Penyelesaian Sengketa Sistem Pembayaran Cash On Delivery pada Media E-Commerce*, Jurnal Bina Mulia Hukum, Vol. 6, No. 2, Maret 2022, <https://jurnal.fh.unpad.ac.id/index.php/jbmh/article/view/533/435>, accessed on 18 September 2022.
- 4) Azhari, A. F. (2015). *Kesiapan Indonesia: Harmonisasi Hukum Negara ASEAN Menuju Komunitas ASEAN* (Proceeding). Universitas Muhammadiyah Surakarta.
- 5) Az Nasution, *Konsumen dan Hukum*, Jakarta: Pustaka Sinar Harapan, 1995.
- 6) Bambang Waluyo, 1991, *Penelitian Hukum dalam Praktik*, Jakarta: Sinar Grafika
- 7) Barkatullah, A. H. (2010). Penerapan Arbitrase Online Dalam Penyelesaian Sengketa Transaksi E-Commerce. Jurnal Ius Quita Iustum. <https://doi.org/10.20885/iustum.vol17.iss3.art2>.
- 8) Cindy Aulia Khotimah dan Jeumpa Crisan Chairunnisa, *Perlindungan Hukum Bagi Konsumen Dalam Transaksi Jual Beli Online (E-Commerce)*, *Business Law Review*: Volume 1.
- 9) Dikdik M. Arief Mansyur dan Elisatris Gultom, 2005, *Cyber Law (Aspek Hukum Teknologi Informasi)*, Refika Aditama, Bandung.
- 10) Dollarhide, M. E. (2020). Social Media Definition. Investopedia. <https://www.investopedia.com/terms/s/social-media.asp#:~:text=Social media is computer-based,of virtual networks and communities.&text=Users engage with social media,often utilizing it for messaging>
- 11) Edmon Makarim, *Kompilasi Hukum Telematika*, Jakarta, Gravindo Persada, 2008
- 12) Edmon Makarim, *Tanggung Jawab Hukum Penyelenggaraan Sistem Elektronik*, Rajawali Pers. Jakarta, 2010
- 13) Enni Soerja Priowirjanto, *Pengaturan Transaksi Elektronik dan Pelaksanaannya di Indonesia Dikaitkan dengan Perlindungan E-Konsumen*, *Padjadjaran Jurnal Ilmu Hukum*, Volume 1 - No 2 - Tahun 2014
- 14) Fajar dan Achmad. 2017. *Dualisme Penelitian Hukum Normatif dan Empiris*, Cetakan IV. Yogyakarta: Pustaka Pelajar
- 15) Garner, B. A. (2014). *Black's Law Dictionary 10th Edition*. West Group
- 16) Geriya., dkk. (2016). *Implementasi Undang-Undang Nomor 8 Tahun 1999 tentang Perlindungan Konsumen Terhadap Jual Beli Online (E-Commerce) di BPSK Denpasar*. Kertha Wicara, Vol: 5(1).
- 17) Iman Sjahputra, *Perlindungan Konsumen dalam Transaksi Elektronik*, Bandung: Alumni, 2010
- 18) Inosenus Samsul, *Perlindungan Konsumen Kemungkinan Penerapan Tanggung Jawab Mutlak*, Jakarta: Pascasarjana Fakultas Hukum Universitas Indonesia, 2004
- 19) Ivana Kriya Lea Rantung, "Perjanjian Jual Beli Barang Melalui Internet (E-Commerce) Menurut Undang-Undang Nomor 11 Tahun 2008," *Journal Lex et Societatis*, Vol. 5, No. 6 Edition of Agustus 2017, <https://ejournal.unsrat.ac.id/index.php/lexetsocietatis/article/view/17912>, accessed on 18 September 2022
- 20) I. Safitri, 1999, *E-commerce dalam Perspektif Hukum*. [http://business.fortunecity.com/buffett/842/art080399\\_ecommerce.htm](http://business.fortunecity.com/buffett/842/art080399_ecommerce.htm).
- 21) Johanes Gunawan, *Hukum Perlindungan Konsumen*, Bandung: Universitas Katolik Parahyangan, 1999
- 22) Kumah, M. K. (2017). *The Role of Social Media as a Platform for E-Commerce*. Ammattikorkeakoulu University of Applied Science
- 23) Lexy J. Moleong, *Metodologi Penelitian Kualitatif*, Cet. ke-13, Bandung: Remaja Rosdakarya, 2000
- 24) M. Abbasi & A. Zare, *Information Security in E-Commerce Law*. UCT Journal of Social Sciences and Humanities Research, 4(03), 2016
- 25) Morgan, R. M. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing*
- 26) Muhammad Syaifuddin, *Hukum Kontrak*, Mandar Maju, Bandung:1993

## Consumer Legal Protection on Electronic Transactions through the Platform without the Collective Account Features by Trusted Third Parties

- 27) Munir Fuady, *Pengantar Hukum Bisnis*, Bandung: Citra Aditya Bakti
- 28) M. Yahya Harahap, 1986, *Segi-Segi Hukum Perjanjian*, Alumni, Bandung
- 29) P. Desruelle & J. C. Burgelman, The impact of e-commerce on the value chain. *info*, 3(6), 2001
- 30) Priyanto, D. 2009. *Belajar Mudah Internet*. Mediakom
- 31) Richardus Eko Indrajit, *E-Commerce: Kiat dan Strategi Bisnis di Dunia Maya*, PT. Elex Media Komputindo, Jakarta, 2001
- 32) Satjipto Rahardjo, *Ilmu Hukum*, Bandung: Citra Aditya Bakti, 1991, hlm. 27
- 33) Silviasari, "Penyelesaian Sengketa Konsumen dan Pelaku Usaha Dalam Transaksi E-Commerce Melalui Sistem Chas On Delivery," *Media of Law and Sharia*, Vol. 1, No. 3, 2020, <https://journal.umy.ac.id/index.php/mlsj/article/view/9192/0> accessed on 19 September 2022
- 34) Subekti. 1992. *Aneka Perjanjian*. Citra Aditya Bakti
- 35) Subekti, *Aneka Perjanjian*, Bandung: Citra Aditya Bakti, 1995
- 36) Subekti, *Hukum Perjanjian*, Cetakan ke-VIII, Jakarta: PT. Intermasa, 2000
- 37) Susanti Adi Nugroho, *Proses Penyelesaian Sengketa Konsumen Ditinjau Dari Hukum Acara serta Kendala Implementasinya*, Kencana Prenas Media Group, Jakarta: 2008
- 38) Steinman, M., & Hawkins, M. (2010). *When marketing through social media, legal risks can go viral*. *Intellectual Property & Technology Law Journal*, 22(8)
- 39) Tasya Safiranita Ramli, et.al., *Aspek Hukum Platform E-Commerce Dalam Era Transformasi Digital*, *Jurnal Studi Komunikasi Dan Media*, Vol. 24 No. 2 Desember 2020, hlm. 121
- 40) Yusuf Arif Utomo (et.al.), "Tanggung Gugat Shopee Sebagai Online Marketplace Provider Dalam Pengiriman Barang," *Jurnal Bina Mulia Ilmu*, Vol. 4, No. 2, Maret 2020, <https://jurnal.fh.unpad.ac.id/index.php/jbmh/article/view/95> , accessed on 19 September 2022
- 41) <https://id.techinasia.com/solusi-rudiantara-pemerintah-kominfo-masalah-ecommerce-indonesia> accessed on 1 Oktober 2022



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## Tubing Movement Analysis in Completion Process at Well X



E. Yohana<sup>1</sup>, Syaiful<sup>1</sup>, Indra Sakti Rahyang<sup>2</sup>, dan Naufal Fajar Pramudya<sup>1</sup>, Shofwan Bahar<sup>3,4</sup>

<sup>1</sup> Department of Mechanical Engineering, Diponegoro University, Semarang, Indonesia

<sup>2</sup> Completion Tools Department, Operation Management Team, PT Halliburton Indonesia

<sup>3</sup> Doctoral Student at Department of Mechanical Engineering, Diponegoro University, Semarang, Indonesia

<sup>4</sup> Department of Mechanical Engineering, Muria Kudus University, Kudus, Indonesia

**ABSTRACT:** The completion process in oil and gas production is one of the most important steps and affects to the final result of the entire process. In actual conditions, many things must be considered in the completion process. One of the most important things is about tubing movement. Tubing movement is the movement of tubing caused by differences in pressure and temperature in the well. Tubing movement can cause deformation of the tubing structure, and if the selection of tubing and packer is not appropriate, it can cause damage to the tubing or well structure. Calculating tubing movement can be done by calculating the total movement and force generated by this four tubing movement effects, which is: temperature effect, ballooning effect, buckling effect, and piston effect. The case study analyzed in this proposal is horizontal well X, and has a total tubing movement of 13,48 in elongation, or produces a force of 47.864,36 lbs. Because the value is positive, the force that applies is the compression force. By knowing the total force and displacement generated by the tubing movement, the engineer can design what type of packer will be used. For the case study in this report, it can be concluded that a force of 47.864,36 lbs can still be resisted by tubing which has a body yield strength specification of 361.000 lbs. Therefore, the tubing can be design to use a no slip packer where there is no movement between the tubing and the packer.

**KEYWORDS:** oil and gas, completion process, tubing movement

### I. INTRODUCTION

The oil and gas industry has an important role in today's modern society in meeting various needs such as vehicle fuel, electricity generators, and so on [1][2]. Exploitation of oil wells in various places around the world is keep going to meet the demand for petroleum[3]. The technology used to mine oil is also growing [4]. Even in some cases, wells that are considered exhausted can still produce oil with newer technology [5][6].

Some of the products of the service company are to provide and consult of tools used to produce petroleum [7]. The tools used are varied and adapted to the conditions of the well that you want to produce. Some wells have extremely high temperatures and pressures, and some contain gases that can damage production equipment [8]. For this reason, analysis is needed in the selection of components in the production equipment for each well [1], [4], [8]–[11].

One of the main components in production is tubing [10][9]. At high temperatures and pressures that fluctuate during a scenario like the installation and production process of the well [11], the tubing will experience a shortening or elongation called tubing movement [4][10]. In a well that is hundreds of meters long, the shortening and lengthening of the tubing will greatly affect the safety and smooth of the production. The factors that caused it are due to the effect of the piston, ballooning, temperature, and buckling [9][6][2].

Tubing movement can interfere with operation and can even cause damage if not given proper handling [4][1]. Therefore, an analysis of the tubing movement is a crucial thing to do in the petroleum production process [6] in a well so that engineers can design the right completion tools for the condition of the well.

## Tubing Movement Analysis in Completion Process at Well X

### II. METHODOLOGY

#### A. Analysis Method

This study uses well X as an analytical medium with the scenario being run is a production scenario. The analysis of well X conducted in this study used an analytical methodology to process the data obtained. Based on the well data that has been provided, the wells to be analyzed are shown in Figure 1. Table 1 shows a description of the completion tools installed in well X.

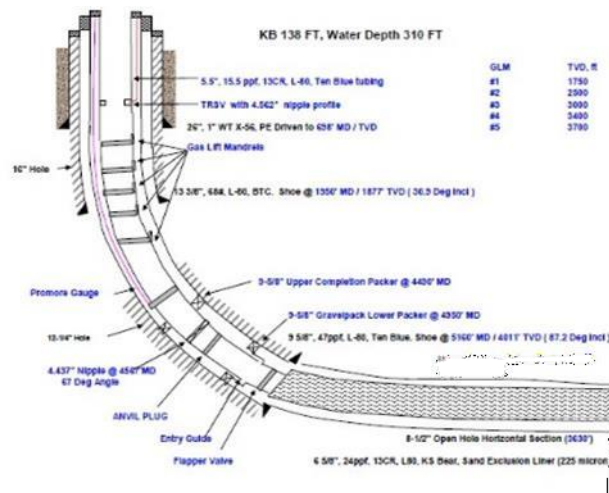


Figure 1. Schematic of Well X

Table 1. Data On Equipment Used.

No.	Completion Tools Parts
1	Surface Casing
2	Intermediate Casing
3	Annulus
4	Production Casing
5	Tubing
6	Packer
7	Liner

#### B. Data Collection

To get the results of the tubing movement that occurs, a calculation analysis is carried out using an empirical formula, ignoring the calculation of heat loss, normal force, drag force, and pressure loss because the values are not significant and have been covered by the safety factor value.

Table 2 below is the specification of the completion tools used in the calculations in well X.

Table 2. Data Specifications On Completion Tools.

Parameter	Casing	Tubing	Packer
Size/Weight	9-5/8 in / 47 lb/ft	5-1/2 in / 15,5 lb/ft	6-5/8 in / 24 lb/ft
Grade	L-80	13 Cr-80	13 Cr-L80
OD Nominal	9,62 in	5,5 in	7,68 in
ID Nominal	8,58 in	4,95 in	5,92 in
$A_0$	-	23,77 in <sup>2</sup>	-
$A_1$	-	19,25 in <sup>2</sup>	-
$A_p$	-	-	46,44 in <sup>2</sup>
$A_s$	-	4,51 in <sup>2</sup>	-
I	-	15,44 in <sup>4</sup>	-

## Tubing Movement Analysis in Completion Process at Well X

In addition to the specifications of the completion tools, the initial and final conditions of the reservoir in well X are also required to be able to calculate the tubing movement. Table 3 describes the condition of the well along with the initial and final phases in the production scenario.

**Table 3. Reservoir Data For Well X**

Reservoir Properties	Value
well depth	3.900 ft TVD
Fluid	Oil and gas
Tubing Length to Packer Installed	4.490 ft MD
Initial Surface Temperature	70°F
Initial Bottom Hole Temperature	212°F
Final Surface Temperature	212°F
Final Bottom Hole Temperature	212°F
Average Initial Temperature	141°F
Average Final Temperature	212°F
Change in Average Temperature between Initial Condition and Final Condition ( $\Delta T$ )	71°F
Initial Tubing Pressure ( $P_1$ initial)	0 psig
Initial Casing/Annulus Pressure ( $P_0$ initial)	0 psig
Final Tubing Pressure ( $P_1$ final)	0 psig
Final Casing/Annulus Pressure ( $P_0$ final)	1.715,31 psig
Change of Average Tubing Pressure between Initial Condition and Final Condition ( $\Delta P_1$ )	1.488,83 psig
Change in Average Annulus Pressure between Initial Condition and Final Condition ( $\Delta P_0$ )	0 psig
Initial Tubing Fluid Density	9,5 ppg
Final Tubing Fluid Density	8,53 ppg
Initial & Final Annulus Fluid Density	9,5 ppg
Area of moment inertia	15,43 in <sup>4</sup>

### C. Tubing Movement

Tubing Movement is a calculation of how the tubing string will be affected by pressure, temperature, and mechanical changes in a well, this effect depends on the condition of the well, tubing to packer, and configuration of the casing and tubing restraint [12].

Prediction and calculation of tubing movement is an important part in the design of completion in wells. Changes in tubing length due to forces are the main cause of problems in the completion section [12].

There are various methods that can be used to determine changes in length and force value on tubing, here are the effects that can cause tubing movement in a well.

#### C.1 Ballooning Effect

Changes in pressure outside or inside the tubing string can cause a ballooning effect shown in Figure 2. The length of the tubing may shorten due to the greater internal pressure. Under different conditions, the pipe can elongate because the annulus pressure is greater than the pressure inside the tubing, this is also called reverse ballooning [12]. Therefore, the calculation of the change in tubing length due to ballooning is based on the average pressure change in the tubing and annulus. Changes in length and force value due to ballooning or reverse ballooning can be calculated using equations (1) and (2):

$$\Delta F_{\text{ballooning}} = -2\mu(A_i\Delta P_i - A_o\Delta P_o) \quad (1)$$

$$\Delta L_{\text{ballooning}} = -\frac{2\mu L}{E(A_o - A_i)} (A_i\Delta P_i - A_o\Delta P_o) \quad (2)$$

## Tubing Movement Analysis in Completion Process at Well X

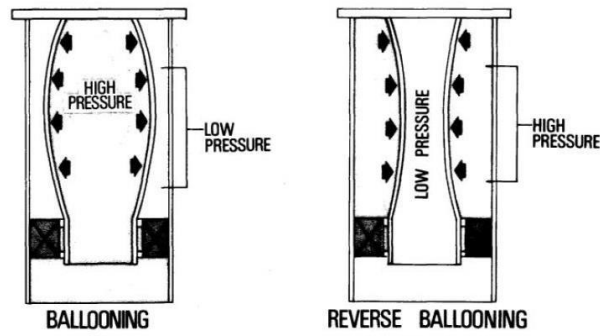


Figure 2. Ballooning Effect on Tubing

### C.2 Temperature Effect

Changes in temperature can occur due to producing hot fluids or injecting cold fluids, this can cause changes in the length of the tubing and generate a tension or compression force due to changes in temperature. A well with a decreasing temperature will make the tubing shrink while a well with an increasing temperature will make the tubing expand shown in Figure 3. The value of the force and length change of tubing due to changes in temperature can be calculated using equations (3) and (4)

$$\Delta F_{\text{temperatur}} = \beta E \Delta T A_s \quad (3)$$

$$\Delta L_{\text{temperatur}} = L \beta \Delta T \quad (4)$$

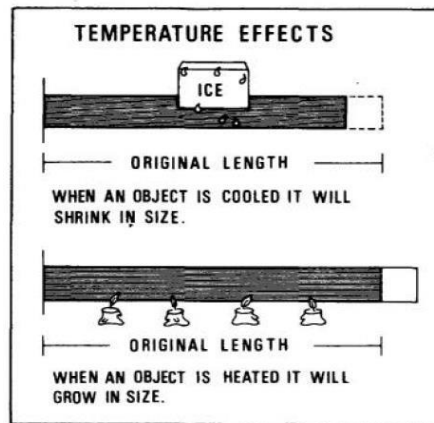


Figure 3. Effect of Temperature on Tubing

### C.3 Piston Effect

The piston effect is the result of the pressure difference at the end of the tubing and the pressure at the annulus. The pressure difference at the end of the tubing occurs in the area difference between the packer valve ( $A_p$ ) and the tubing I.D. ( $A_i$ ).

The pressure difference in the annulus acts on the difference in area between the packer valve ( $A_p$ ) and the O.D tubing area. ( $A_o$ ). This will cause an unbalanced force on the packer area and will tend to push or pull the tubing resulting in a piston effect.

Changes in pressure between the end of the tubing and the annulus due to the piston effect result in changes in the force and length of the tubing shown in Figure 4. Therefore, it is necessary to calculate the change in length and force value which is calculated using equations (5) and (6):

$$\Delta F_{\text{piston}} = (A_p - A_i) \Delta P_i - (A_p - A_o) \Delta P_o \quad (5)$$

$$\Delta L_{\text{piston}} = - \frac{L \Delta F_{\text{piston}}}{E A_s} \quad (6)$$

## Tubing Movement Analysis in Completion Process at Well X

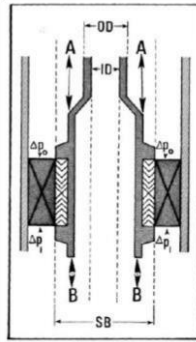


Figure 4. Piston Effect on Tubing

### C.4 Buckling Effect

Buckling phenomenon as Figure 5 can be caused by two different force distributions. Which is, the force from the end of the tubing like the weight of the tubing itself, and the distribution of forces acting across the tubing wall by pressure [7]. The part of the tubing that is exposed to compression forces will have the possibility of buckling. However, parts that are below the tension point will not face buckling problems. Neutral point is the point that limits the occurrence of buckling, where the area above the neutral point will not experience buckling. Here is the formula for finding the neutral point:

$$n = \frac{(A_p)(P_{i\text{final}} - P_{o\text{final}})}{(W_s + W_i - W_o)} \quad (7)$$

$F_f$  (fictitious force) is a combination of internal pressure, external pressure and piston force. The  $F_f$  is not the actual force acting on the bottom of the tubing.  $F_f$  is used to indicate whether the pipe is buckling or not. tubing will buckling if  $F_f$  is positive.

However, if  $F_f$  is zero or less than zero, the pipe will not experience buckling because the pipe is in tension. Here is the  $F_f$  formula:

$$F_f = (P_o A_o - P_i A_i) \quad (8)$$

To be able to find out whether the buckling that is happening is helical or sinusoidal, it is necessary to find the critical force that occurs and compare it with the current force. The following formula is used to determine the critical Helical and Sinusoidal forces:

$$F_{C\text{Helical}} = -1,41 \sqrt{\frac{4EIwsin\theta}{rc}} \quad (9)$$

$$F_{C\text{Sinusoidal}} = -\sqrt{\frac{4EIwsin\theta}{rc}} \quad (10)$$

If  $F_{eff} < -F_{C\text{sinusoidal}}$  then tubing will tend to experience Helical buckling, but if  $F_{eff} > -F_{C\text{Helical}}$  then tubing tends not to buckling. But if  $F_{eff}$  is between the helical and sinusoidal critical forces, the tubing tends to experience sinusoidal buckling. If the tubing has been determined to be buckling, then an analysis is carried out on how much change in length occurs due to buckling using the equation 11:

$$\Delta L_{\text{buckling}} = -\left(\frac{R_c^n A_p^2 (\Delta P_i - \Delta P_o)^2}{8EI(W_s + W_i + W_o)}\right) \quad (11)$$

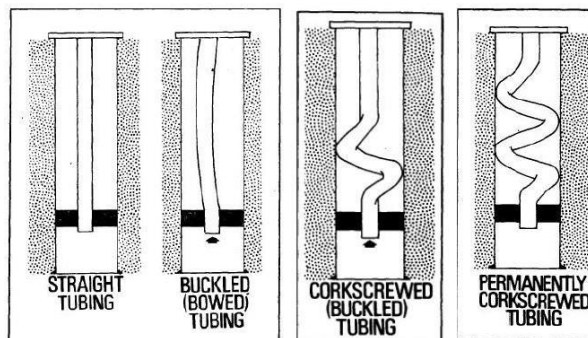


Figure 5. Buckling Effect on Tubing

## tubing Movement Analysis in Completion Process at Well X

### D. Well Trajectory

Well Trajectory design is the first step before directional drilling or as a reference for the implementation of the drilling program, from determining the azimuth, inclination angle, and determining the total length of the path predicted from the calculation. In addition, the well trajectory is an important parameter for the installation of completion tools under the well. Figure 6 shows the well trajectory obtained from the given well X report data, with input data in the form of measured depth (MD), inclination angle, azimuth angle, dogleg (DLS) and packer depth to be installed at a depth of 4.490 ft (1.368,55 m). In well X, the direction of the well is not vertical and will be horizontal at a depth of about 5.000 ft. The bends in the well will be entered into the value of the angle of inclination and dogleg (DLS).

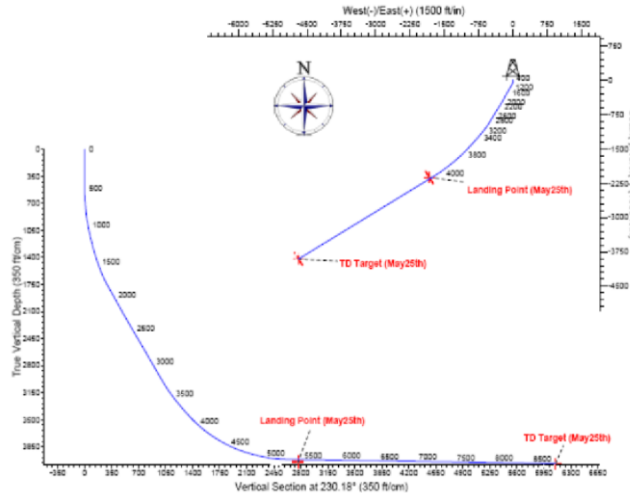


Figure 6. Well Trajectory of the X Well

### E. Burst and collapse

Burst and collapse pressure is the resultant of the pressure difference in the tubing and in the annulus. Meanwhile, each type of tubing has its own burst and collapse rating (resistance) which can be calculated by the following formula:

#### E.1 Burst and collapse Rating

The burst and collapse rating is the value of burst or collapse that can be assigned to a tubing. Burst and collapse rating can be calculated using the following equation:

$$P_{b/c} = 0,875 \left( \frac{2(Y_p)(t)}{D} \right) \quad (12)$$

#### E.2 Burst and collapse Load

Burst and collapse load is the difference between the pressure inside and outside the tubing. This value represents the burst or collapse load that is currently occurring on the tubing. Here is the equation used to find the burst and collapse load:

$$P_b = P_i - P_o \quad (13)$$

$$P_c = P_o - P_i \quad (14)$$

#### E.3 Burst and collapse Safety Factor

Burst and collapse (Figure 7) safety factor is the ratio value between the burst/collapse value that the tubing can withstand and the pressure value that occurs in the tubing plus the design factor value. The design factor value is the security value of an item determined by the customer. The equation for finding the safety factor for burst or collapse is as follows:

$$SF_{burst/collapse} = \frac{\text{Burst/collapse Rating}}{\text{Design Factor} \times \text{Burst/collapse Load}} \quad (15)$$

## Tubing Movement Analysis in Completion Process at Well X

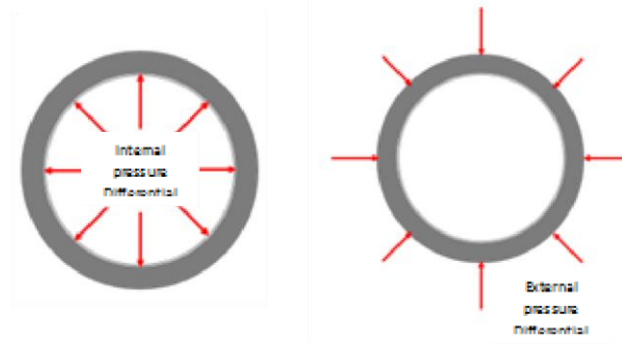


Figure 7. Burst (left) And Collapse (right) Effects on Tubing

### III. RESULTS

For tubing movement analysis, we calculated the changes in length and force value caused by piston force, buckling, ballooning, and temperature effects. This analysis uses table 2 and table 3 as input data for calculating changes in length and force due to the effects of piston, buckling, ballooning, and temperature. The following is a description and explanation of the calculations for each effect.

#### A. Ballooning Effect

In the ballooning effect, there are several things to look for so that the calculation of changes in length and force can be found. After getting the area values from the outer and inner diameters of the tubing, the next step is to calculate the average value of  $P_o$  and  $P_i$  at the initial condition in the following way:

$$P_o \text{ avg} = \frac{P_o \text{ surface} + P_o \text{ packer}}{2}$$

$$P_o \text{ avg} = \frac{0 + 2.218,06}{2}$$

$$P_o \text{ avg} = 1.109,03 \text{ psi}$$

$$P_i \text{ avg} = \frac{P_i \text{ surface} + P_i \text{ packer}}{2}$$

$$P_i \text{ avg} = \frac{0 + 2.218,06}{2}$$

$$P_i \text{ avg} = 1.109,03 \text{ psi}$$

Other than calculating the change in the average pressure of the initial condition, we also have to find out the value at the final condition. After knowing the values of  $P_i$  and  $P_o$  from the packer, which are 3.706,89 psi and 2.218,06 psi, then we can calculate the average value of  $P_o$  and  $P_i$  at the time of the final condition as follows:

$$P_o \text{ avg} = \frac{P_o \text{ surface} + P_o \text{ packer}}{2}$$

$$P_o \text{ avg} = \frac{0 + 2.218,06}{2}$$

$$P_o \text{ avg} = 1.109,03 \text{ psi}$$

$$P_i \text{ avg} = \frac{P_i \text{ surface} + P_i \text{ packer}}{2}$$

$$P_i \text{ avg} = \frac{1.715,31 + 3.706,89}{2}$$

$$P_i \text{ avg} = 2.711,10 \text{ psi}$$

## Tubing Movement Analysis in Completion Process at Well X

After obtaining the initial and final average pressure in the tubing and annulus, the next step is to calculate the change in the average pressure in the tubing and annulus as follows:

$$\Delta P_o = P_o \text{ avg final} - P_o \text{ avg initial}$$

$$\Delta P_o = 1.109,03 - 1.109,03$$

$$\Delta P_o = 0 \text{ psi}$$

$$\Delta P_i = P_i \text{ avg final} - P_i \text{ avg initial}$$

$$\Delta P_i = 2.711,10 - 1.109,03$$

$$\Delta P_i = 1.602,07 \text{ psi}$$

After getting the values that will affect the change in length caused by the ballooning effect, and the Poisson ratio is known to be 0,3 for steel, then calculate the change in length by:

$$\Delta L = -\frac{2\mu L}{E(A_o - A_i)} (A_i \Delta P_i - A_o \Delta P_o)$$

$$\Delta L = -\frac{2(0,3)4.490}{3 \times 10^6(23,76 - 19,25)} ((19,25)(5.1602,07) - (23,76)(0))$$

$$\Delta L = -12,5 \text{ in}$$

Thus, the change in length due to the ballooning effect is -12,5 in. Since the value is negative, the tubing will shorten. Meanwhile, the force caused by the ballooning effect can be calculated by:

$$F_{\text{ballooning}} = -2\mu (A_i \Delta p_i - A_o \Delta P_o)$$

$$F_{\text{ballooning}} = -2(0,3)((19,25)(1.602,07) - (23,76)(0))$$

$$F_{\text{ballooning}} = -18.505,81 \text{ lbs}$$

Thus, the force generated by the ballooning effect on the tubing is -18.505,81 lbs. A negative value indicates that the tubing is under tension.

### B. Temperature Effect

On the effect of temperature, the first thing that needs to be done is to find the average temperature change that occurs in the initial and final conditions as follows:

$$T_{\text{avg initial}} = \frac{T_{\text{surface}} + T_{\text{BHT}}}{2}$$

$$T_{\text{avg initial}} = \frac{70 + 212}{2}$$

$$T_{\text{avg initial}} = 141 \text{ }^\circ\text{F}$$

$$T_{\text{avg final}} = \frac{T_{\text{surface}} + T_{\text{BHT}}}{2}$$

$$T_{\text{avg final}} = \frac{212 + 212}{2}$$

$$T_{\text{avg final}} = 212 \text{ }^\circ\text{F}$$

After getting the average temperature value in the initial and final conditions, then calculate the temperature change in the



## Tubing Movement Analysis in Completion Process at Well X

following way:

$$\Delta T = T_{avg\ final} - T_{avg\ initial}$$

$$\Delta T = 212 - 141$$

$$\Delta T = 71\ ^\circ F$$

After getting the values that will affect the change in length caused by the temperature effect and it is known that the expansion coefficient is  $6,9 \times 10^{-6}$  (/F), then calculate the change in length by:

$$\Delta L = \beta L \Delta T$$

$$\Delta L = (6,9 \times 10^{-6})(4.490)(71)$$

$$\Delta L = 2,19\ ft$$

$$\Delta L = 26,39\ in$$

Thus, the change in length due to the effect of temperature is 26,39 in. Because the value is positive, the tubing will experience elongation. While the force caused by the temperature effect can be calculated by:

$$F_{temperatur} = 207 (As) (\Delta T)$$

$$F_{temperatur} = 207(4,51)(71)$$

$$F_{temperatur} = 66.370,18\ lbs$$

Thus, the force produced by the temperature effect on the tubing is 66.370,18 lbs. The positive force indicates that the force acting due to the temperature effect is a compression force.

### C. Piston Effect

In the piston effect, there are several things to look for, so that the calculation of changes in length and force can be found. After getting the Pi packer and Po packer values in the initial conditions and final conditions in Table 5.

**Table 5. The Value Of The Pressure Difference On The Packer**

	Initial	Final
Pi Packer (Psi)	2.218,06	3.706,89
Po Packer (Psi)	2.218,06	2.218,06

Then proceed by calculating the pressure changes in the annulus and tubing in the packer area as follows:

$$\Delta P_o = P_o\ final - P_o\ initial$$

$$\Delta P_o = 2.218,06 - 2.218,06$$

$$\Delta P_o = 0\ psi$$

$$\Delta P_i = P_i\ final - P_i\ initial$$

$$\Delta P_i = 3.706,894 - 2.218,06$$

$$\Delta P_i = 1.488,83\ psi$$

After obtaining the values that will affect the magnitude of the force caused by the piston effect. Then calculate the magnitude of the force by:

### Tubing Movement Analysis in Completion Process at Well X

$$F = (A_p - A_i)\Delta P_i - (A_p - A_o)\Delta P_o$$

$$F = (46,43 - 19,25)1.488.83 - (46,43 - 23,76)0$$

$$F = 40.478,35 \text{ lbs}$$

The change in force that occurs due to the piston effect is 40.478,35 lbs and the force created is a compression force because the value of the change in force that occurs is positive. However, because the packer and tubing cannot move, the force due to the piston effect is only retained in the packer area and has no effect on the tubing string, the force due to the piston effect is 0 lbs.

$$F = 0 \text{ lbs}$$

Then proceed to calculate the change in length by:

$$\Delta L = -\frac{LF}{EA_s}$$

$$\Delta L = -\frac{(4,490)(0)}{(3 \times 10^7)(4,51)}$$

$$\Delta L = 0 \text{ in}$$

Thus, the change in length due to the piston effect is 0 in.

#### D. Buckling Effect

In the buckling effect, there are several things to look for in order for the calculations can be carried out. First is getting the annulus and tubing pressures on the packer, which is 2.218,06 psi and 3.706,89 psi. These numbers have been added to the hydrostatic value of the depth where the packer is installed.

After that, calculate for the fictitious force and neutral points, in the following way:

$$F_f = A_p (P_i \text{ packer} - P_o \text{ packer})$$

$$F_f = 46,43 (3.706,89 - 2.218,06)$$

$$F_f = 69.141,34 \text{ lb}$$

$$n = \frac{F_f}{W}$$

$$n = \frac{69.141,34}{1,2}$$

$$n = 57.342,9 \text{ in}$$

Because the value of the neutral point is greater than the length of the tubing being analyzed, buckling can occur all along the tubing. In addition, it is also necessary to calculate the weight per unit length of tubing and fluid by adding up the steel load ( $W_s$ ), the fluid load in the tubing ( $W_i$ ), and the fluid load outside the tubing ( $W_o$ ). By knowing the weight and length of the tubing in the tubing specifications, the calculation of the weight per unit can be known as follows:

$$W = W_s + W_i - W_o$$

$$W = 1,29 + 0,79 - 0,87$$

$$W = 1,2 \text{ lb/in}$$

In addition, using formulas 9 and 10, the critical helical and sinusoidal values can be calculated as 269.014,9 lb and 190.791 lb, respectively. Because the  $F_{eff}$  value is smaller than the critical helical value, the tubing will experience helical buckling.

## Tubing Movement Analysis in Completion Process at Well X

To find the change in length due to the buckling effect, use the formula for  $n > L$  as follows:

$$\Delta L = -\left(\frac{r^2 F_f^2}{8EIW}\right)\left(\frac{LW}{F_f}\left(2 - \frac{LW}{F_f}\right)\right)$$

$$\Delta L = -\left(\frac{1,59^2 (69.141,34^2)}{8(3 \times 10^7)(15,43)(1,2)}\right)\left(\frac{4.490(1,2)}{69.141,34}\left(2 - \frac{4.490(1,2)}{69.141,34}\right)\right)$$

$$\Delta L = -0,4 \text{ in}$$

### E. Burst and Collapse

Because the pressure in the tubing is greater than the pressure in the annulus, no collapse load is applied to the tubing. However, there was a burst load of 1.715,31 psi, with a burst rating of 7.000 psi. then the safety factor obtained for burst and collapse is 3,71.

## IV. CONCLUSIONS

Based on the results obtained, it can conclude into several points as follows:

- A. The change in total length when the tubing is free to move caused by the effect of temperature is 26,39 in elongation; Ballooning effect is 12,5 in shortened; piston effect is 0 in; and the buckling effect is 0,4 in shortened. Then the total change in length caused by the movement of the tubing is 13,48 in elongation. However, because the type of packer used does not allow for tubing movement, the effect of temperature will produce a compression force on the tubing of 66.370,18 lbs; the ballooning effect will produce a tension force on the tubing of 18.505,81 lbs; and the piston effect will produce a force on the tubing of 0 lbs. so the total force on the tubing is 47.864,36 lbs compression.
- B. Tubing does not experience collapse load because the pressure in the tubing is greater than in the annulus. However, there is a burst load on the tubing of 1.715,31 psi which is considered safe with a safety factor obtained after entering the tubing properties and design factor of 3,71.
- C. Analysis of the tubing movement in the completion process is very important to be done correctly. By knowing how much force is caused or how far the tubing will move by the tubing movement, the engineer will be able to consider the actions taken to prevent failure of the tool or well by considering safety and cost. In the case of well X with a force of 47.864,36 lbs tubing is still considered safe because the specification of the body yield strength possessed by tubing is 361.000 lbs (5-1/2 in 13 Cr-80). Then the selection of no motion packer can be used.

## ACKNOWLEDGMENT

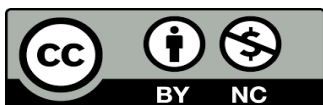
The Author would like to thank the Faculty of Engineering, Diponegoro University which has provided research grants with the number: 455/UN7.F3/HK/2022

## REFERENCES

- 1) J. Liu, L. Zeng, X. Guo, L. Dai, and X. Huang, "Experimental study on flow-induced vibration response characteristics of leaching tubing in salt cavern gas storage," vol. 138, no. March, pp. 1–17, 2022.
- 2) J. Xu, Y. Mou, C. Xue, L. Ding, and R. Wang, "The study on erosion of buckling tubing string in HTHP ultra-deep wells considering fluid – solid coupling," vol. 7, pp. 3011–3022, 2021.
- 3) A. Fu, Y. Long, H. Liu, M. Zhao, J. Xie, and H. Su, "Stress corrosion cracking behavior of super 13Cr tubing in phosphate packer fluid of high pressure high temperature gas well," vol. 139, no. March, 2022.
- 4) X. Guo, J. Liu, G. Wang, L. Dai, D. Fang, and L. Huang, "Nonlinear flow-induced vibration response characteristics of a tubing string in HPHT oil & gas well," vol. 106, no. May 2020, 2021.
- 5) N. A. Sami, "Application of machine learning algorithms to predict tubing pressure in intermittent gas lift wells," vol. 7, pp. 0–6, 2022.
- 6) X. Guo, J. Liu, L. Dai, Q. Liu, D. Fang, and A. Wei, "Friction-wear failure mechanism of tubing strings used in high-pressure, high-temperature and high-yield gas wells," vol. 469, no. September 2020, 2021.
- 7) O. Sayman, K. Jones, R. Hale, E. Pereyra, and C. Sarica, "Journal of Natural Gas Science and Engineering A field case study of plunger lift related tubing deformation," vol. 97, no. March 2021, 2022.
- 8) X. Guo, J. Liu, L. Dai, Y. He, L. Huang, and G. Wang, "Journal of Natural Gas Science and Engineering Fatigue investigation of tubing string in high-yield curved wells," vol. 85, no. May 2020, 2021.

## Tubing Movement Analysis in Completion Process at Well X

- 9) X. Guo, X. Li, J. Liu, L. Dai, and L. Huang, "Fatigue failure mechanism of 3D tubing strings used in high-pressure , hightemperature and high-yield curved gas wells," vol. 128, no. June, 2021.
- 10) J. Liu, X. Guo, G. Wang, Q. Liu, and D. Fang, "Bi-nonlinear vibration model of tubing string in oil & gas well and its experimental verification," vol. 81, pp. 50–69, 2020.
- 11) Y. Mou, Z. Lian, P. Sang, H. Yu, Q. Zhang, and R. Li, "Study on water hammer e f f ect on defective tubing failure in high pressure deep gas well," vol. 106, no. April, 2019.
- 12) S. A. Memon and A. H. Tunio, "Understanding Tubing Movement and Its affects n Pressure and Temperature," vol. 2, no. 3, pp. 2–5, 2018.



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## Implementation of Government Regulations of the Republic of Indonesia Number 68 of 2014 Concerning Structure of The State Defense Area in The North Natuna Sea



Robith Darius Shidqi<sup>1</sup>, Mas Roro Lilik E.<sup>2</sup>, Budi Rianto<sup>3</sup>

<sup>1,2,3</sup>Master of Public Administration, Faculty of Social and Political Sciences, Hang Tuah University, Surabaya, Indonesia

**ABSTRACT:** Indonesia as a maritime country that has wide seas and long coastlines makes the location of the Indonesian archipelago very strategic in terms of economic and environmental, socio-cultural, as well as legal and security aspects. The location of the North Natuna Sea which is between the three countries causes various kinds of problems, one of which is regarding maritime boundaries. This study aims to find out clearly related to field practice based on Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the Defense Area in the North Natuna Sea. The research method used is a mix methodology.

The results of this study are: (1) The implementation of the Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning the Arrangement of the State Defense Area in the North Natuna Sea, which still requires improvement in several sectors so that the implementation of the Government Regulation can run well; (2) Based on the results of the analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT) it was found that the greatest strength is having a spatial plan for the defense area so that it is able to ward off threats according to the direction of the threat, while the biggest weakness is not being able to manage Natural Resources (SDA). ) which are owned independently and the existing technology is still limited. Meanwhile, the biggest opportunity is the agency's work plan in accordance with the Nawacita of the World Maritime Axis, while the toughest threats are easily provoked and easily divided; (3) Strategies that can be implemented include 8 strategies, in order, they are as follows: a) Preparing active defensive defenses, b) Implementing resource management, c) Realizing a universal defense, d) Developing layered defenses, e) Increasing international cooperation , f) Improve maritime, land and aerospace security, g) Build and utilize the defense industry, and h) Create awareness and capability to defend the country.

**KEYWORDS:** Regional Planning, Defense, Maritime, North Natuna Sea

### INTRODUCTION

The sea area is one of the important areas for countries that have access to the sea, both territorial areas and Exclusive Economic Zones. However, the sea is also a problem for some countries because of the unclear boundaries between countries and boundaries with the open sea area. In 2018, marine data was launched which is a manifestation of Indonesia's identity as the largest archipelagic country in the world. This marine data was launched by three institutions, including the Indonesian Navy's Hydrographic and Oceanographic Center (Pushidrosal), the Geospatial Information Agency (BIG) and the Coordinating Ministry for Maritime Affairs. The agreed result is the area of the Republic of Indonesia (land and sea) covering an area of 8,300,000 km<sup>2</sup> consisting of inland waters and archipelagic waters covering an area of 3,110,000 km<sup>2</sup>, the Territorial Sea 290,000 km<sup>2</sup>, an Additional Zone of 270,000 km<sup>2</sup>, the Exclusive Economic Zone of 3,000,000 km<sup>2</sup>, and the Continental Shelf. 2,800,000 km<sup>2</sup>. (Pushidrosal, 2018). As an archipelagic country, territorially there are boundaries with other countries. Indonesia's maritime territory is bordered by India, Malaysia, Singapore, Thailand, Vietnam, the Philippines, the Republic of Palau, Australia, Timor Leste and Papua New Guinea. Indonesia as a maritime country that has wide seas and long coastlines makes the location of the Indonesian archipelago very strategic in terms of economic and environmental, socio-cultural, as well as legal and security aspects. For this reason, it is necessary to determine boundaries through the provisions of the International Law of the Sea as regulated in the 1982 Law of the Sea Convention (KHL 1982). The Indonesian government has ratified the 1982 KHL through Law Number 17 of 1985 so that Indonesia is obliged to follow all the rules contained in the 1982 KHL. Furthermore, in order to maintain maritime potential, the Indonesian Government issued Presidential Regulation Number 16 of 2017 concerning Indonesian Marine Policy

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which was signed in 20 February 2017 by the President of the Republic of Indonesia Joko Widodo. This determination aims to guide the development of the marine sector for the realization of Indonesia as a World Maritime Axis which includes security, defense, law enforcement and safety at sea as well as maritime diplomacy (Riyadi and Sari, 2019).

In 2017 the Government of Indonesia made improvements to a new map of Indonesia's territory and emphasized the boundaries of Indonesia's maritime territory by naming the North Natuna Sea which borders the South China Sea. The Natuna Sea is famous as a producer of oil and gas, so it is called the waters with the largest gas supply in the Asia Pacific and even the world. The potential of fish resources which include the Karimata Strait, Natuna Sea and China Sea is very abundant up to 767,126 tons (Wangke, 2020). This makes it one of the sources of livelihood for traditional Indonesian fishermen by utilizing and processing existing resources optimally, but in this case exploitation and exploration have not been managed optimally. On the other hand, the area is one of the strategic international shipping lanes traversed by other countries that have interests that are directly adjacent to the high seas, where historically there were three ethnicities that inhabited the three areas, consisting of ethnic Malays, ethnic Javanese, and ethnic Chinese. . Because it is a water area, most of them have a livelihood as fishermen (Matompo, 2018). However, the unilateral act carried out by the Government of Indonesia resulted in overlapping territorial claims between the three countries. Bearing in mind that in international relations when a country wants to make a territorial claim by updating the map, there must be a negotiation between countries whose territories face each other or are side by side (Riyadi and Sari, 2019).

The location of the North Natuna Sea which is between the three countries raises various kinds of problems, one of which is regarding maritime boundaries. Previously, there had been conflicts over the South China Sea dispute regarding overlapping territorial claims involving China and several countries in the Southeast Asian region. However, on June 12, 2016 the International Court of Arbitration ruled that all of China's actions in the South China Sea area were not in accordance with the International Law of the Sea, so that China had no right to claim the area. In 2019 there has been a decline in production where the catch only reaches 1 ton of fish per week which normally fishermen get 3 tons of fish per week. This is due, among other things, to the entry of foreign vessels and fishing carried out without a permit in North Natuna Waters (Wulan and Yasa, 2021). The problems that occur in North Natuna can be seen in the following table:

**Table 1. North Natuna Sea Chronology**

Tahun	Fenomena
2016	China claims overlapping territories but China's actions in the South China Sea area are not in accordance with the International Law of the Sea, so China has no right to claim the area. (violates UNCLOS Article 77 on the Rights of the coastal state over the Continental Shelf)
2017	The Indonesian government is revamping a new map and reaffirming the boundaries of Indonesia's maritime territory by naming the North Natuna Sea, which borders the South China Sea. (In accordance with UNCLOS article 75 on Maps and lists of geographic coordinates)
2019	There has been a decrease in production due to the entry of foreign vessels and fishing is carried out without a permit in the North Natuna Waters (in violation of UNCLOS article 73 concerning Enforcement of the legislation of the Coastal State)

The above conditions occur because China claims the Natuna Waters as a nine dash line area, so that China considers its actions legal for catching fish in Natuna Waters. It was proven by the incident that one of the Chinese vessels had been caught casting nets in the Indonesian EEZ in the Indonesian jurisdiction (North Natuna) accompanied by a coast guard to protect his fishing boat. China when doing illegal fishing always brings a coast guard, which is to protect the area that is considered to be theirs. In the case of the violation of the Natuna island territory unilaterally by the Chinese government due to abundant natural resources, the traditional fishing ground which is included in the Indonesian Exclusive Economic Zone is based on the Nine Dash Line claim plus the application of the Air Defense Zone Identification (ADIZ) is a threat to defense. and future security. This can lead to political tensions, encourage a race for arms power, resulting in tension in the ASEAN region and can even lead to open war. The North Natuna Sea area is an area that has a high level of vulnerability, the occurrence of conflicts in the ASEAN Region because of many state interests. Therefore, Indonesia, which is located in the area, must prepare itself with the possibilities that will occur in the

## **Implementation of Government Regulations of the Republic of Indonesia Number 68 of 2014 Concerning Structure of The State Defense Area in The North Natuna Sea**

future according to the priority scale of threats. In accordance with the Regulation of the Minister of Defense Number 19 of 2015 concerning the Policy for the Implementation of State Defense in 2015-2019, a message can be drawn that as an ASEAN member country that has a strategic position in a conflict-ridden region, Indonesia with all its strengths and capabilities must be able to protect national interests. of the consequences of the conflict.

In this condition, Indonesia is actually in a stronger position than China, which is only based on the nine dash line rule. Moreover, coupled with the behavior of China, which has often violated the exclusive zone of Indonesian waters, it has also been implicated several times in illegal fishing by the Chinese community against Indonesian waters and Chinese ships entering Indonesian waters without permission from the Indonesian side. This clearly violates the EEZ Law Number 5 of 1983, especially in Article 7. This article explains that anyone carrying out activities in Indonesian territorial waters must obtain approval from the Indonesian government. Currently, Indonesia through the TNI has prepared an Integrated Trimatra military defense posture with the hope that the use of force is carried out in a synergistic and integrated manner in order to be able to face future challenges, but in its implementation it is still not optimal, besides that the existing threats continue to increase from year to year. China already has military bases in the Spratly Islands which are used as bases for advancing, monitoring trade crossings in the South China Sea and establishing independent cities in the Spratly Islands. This requires serious attention and prioritizes threats that have the potential to become regional conflicts.

Related to some of the descriptions of these problems, the thing that is considered most crucial is the change in the 2017 national map where there is a change in the name of the South China Sea to the North Natuna Sea. The purpose of the renaming is to show Indonesia's diplomatic sovereignty in national waters, but it implies that there is a national interest in the national security framework in the issuance of the new map of Indonesia 2017. In addition, the new map policy is closely related to the vision of the government of President Joko Widodo to make Indonesia as the World Maritime Axis. Based on the above phenomenon, in this case, this writer examines further related to the arrangement of the national defense area in the North Natuna Sea, considering that the North Natuna Sea has great potential in every aspect of ideology, politics, economy, socio-culture as well as defense and security. Muhaimin's research (2018) shows that the naming of the North Natuna Sea in the study of security and international relations can be understood as a step to securitize Indonesia against the sovereignty of its maritime territory. This securitization effort can be seen in the long process of forming a new map involving all national resources as well as diplomatic statements from the Indonesian government (speech act). Tampi's research (2017) shows that the problem of regional status and the ambiguity of state boundaries are often a source of disputes between bordering or adjacent countries. Ruyat's research (2017) shows that the South China Sea dispute is a challenge to regional stability, including Indonesia, which is approaching the Asian Century. This dispute poses a threat to Indonesia's defense because the contested location is near the Indonesian border in the Natuna region.

On the other hand, research by Tienth et al., (2020) shows that Indonesia prefers to maintain the status quo to maintain high economic diplomacy with China. The research of Dipua, Prakoso and Nurdiansyah (2021) shows that there are several inputs and recommendations on policy making to prioritize diplomacy in solving existing problems, especially in Indonesia's maritime border areas with neighboring countries. The research of Chomariyah and Sudirman (2020) shows that the efforts made by the Government of Indonesia are to protest against China's claims to parts of the Natuna Sea waters, based on UNCLOS 1982 and to take a diplomatic approach. The research of Fernandes et al, (2021) shows that the nine-dash line claim is not based on international law but is only based on China's unilateral claims and causes conflicts that have an impact on Indonesia. Rosdiana's research (2018) shows that domestic constraints are through elite political policies, taking diplomatic and political means to adapt to the external environment defensively by changing the name of the EEZ in Natuna to the North Natuna Sea. This research is not new, but there are predecessors. In this study, we will discuss the threat of China, which has built bases in the Spratly Islands, faced with Indonesia's attitude towards potential conflicts that will occur. In accordance with Indonesian Government Regulation No. 68 of 2014 concerning the arrangement of defense areas, it is necessary to increase military strength in the Natuna Islands by carrying out the construction of an ideal military base in accordance with the level of threat which will have the potential to become a war mandala in the event of a dispute in the North Natuna Sea Area. With the development of a defense structure in accordance with Indonesia's vision and mission as the world's maritime axis, it will be able to secure the development of other maritime pillars in order to realize national resilience as expected.

Indonesia has announced its Exclusive Economic Zone as regulated in Law Number 5 of 1983 concerning the Indonesian Exclusive Economic Zone. Article 2 of Law 5/1983 has stated that the Indonesian Exclusive Economic Zone is the outermost 200 nautical miles of the Indonesian territorial sea baseline. Article 3 paragraph (1) of the same Law also explains that if there is an overlap with the Exclusive Economic Zone of another country, it is determined by agreement between Indonesia and that country. Even though it has been regulated as such in UNCLOS, conflicts over territory and disputes over maritime boundaries still occur.

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Recently, the issue of the entry of Chinese ships in the North Natuna Sea, which is the Indonesian Exclusive Economic Zone, has been hot again. The entry of Chinese warships and Chinese fishing vessels accompanied by the Chinese Coast Guard does not violate UNCLOS rules because foreign ships are free to enter the waters of the Exclusive Economic Zone. Foreign ships are only allowed to explore and exploit, as well as utilize other natural resources in the area (Maulana and Rakhman 2020). Indonesia's efforts to defend the territory of the State's sovereignty, the territorial integrity of the Republic of Indonesia and the safety of the Indonesian people in defending the North Natuna Sea (LNU) area which has the potential to become a threatened area. Indonesia as a non-claimant state prioritizes the development of maritime forces and seeks to carry out diplomacy involving military forces, namely the TNI-AL, TNI-AU and TNI-AD (Ilmi 2020).

Based on Law number 3 of 2002 concerning defense, article 1 paragraph 2 states that the national defense system is a universal defense system (Sishta) that involves all citizens, territories and national resources and is prepared early by the government and is carried out in total, integrated, directed, and continuous to uphold the sovereignty of the state, territorial integrity, and the safety of the entire nation from all threats. Therefore, it is necessary to increase defense capabilities, especially in the North Natuna Sea area. Referring to the Law, the Government makes North Natuna a defense area based on Article 1 of the Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning State Defense Territory Structuring which explains that the State Defense area, hereinafter referred to as the Defense Area, is an area determined to maintain state sovereignty, territorial integrity The Unitary State of the Republic of Indonesia. The determination of the defense area as regulated in the Government Regulation of the Republic of Indonesia Number 68 of 2014 Article 5 is to guarantee the certainty of the existence of the Defense Area. The defense area is determined by taking into account regional interests and defense functions. The defense area includes land, sea and air. The elements of the defense area planned by the Government in accordance with Article 6, Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning State Defense Territory Arrangement, namely military bases, military training areas, military installations, testing areas for military equipment and weapons, explosive goods storage areas and other dangerous, disposal areas for ammunition and other dangerous defense equipment, strategic national vital objects and air defense interests.

### **RESEARCH METHOD**

The design used in this study is a mixed method. Mixed methods research design is a procedure in collecting, analyzing and mixing quantitative and qualitative methods in a study or a series of studies to understand the problems in research (Creswell and Plano Clark 2015, 108). According to Creswell, the method of merging or a combination of qualitative and quantitative methods aims to make the resulting data more comprehensive, valid, reliable and objective. There are six mixed method research designs, including the convergent parallel design, the embedded design, the explanatory sequential design, the exploratory sequential design, the transformative design, and the multiphase design. (Creswell 2012). The convergent parallel design is a way of collecting quantitative and qualitative data and then using them together to be used in understanding the problems in research. The explanatory sequential design is a data collection method that begins with quantitative data collection and then continues with qualitative data collection to help analyze the data obtained quantitatively, so that the results of research with this design are to explain a general picture (generalization). The exploratory sequential design is a data collection that begins with the collection of qualitative data and then continues with the collection of quantitative data. The purpose of collecting qualitative data in the first stage is to explore the existing phenomena first, then the second stage is collecting quantitative data to explain a relationship between variables found in qualitative data. The embedded design is data collection carried out by starting with quantitative and qualitative data together or sequentially where one form of data plays a supporting role for other data. The transformative design is a research model that uses one of the four previous models designed using a transformative framework or lens. The multiphase design is a research model based on convergent, explanatory, exploratory, and embedded. The point is if this research is carried out through a series of stages or separate research which has a program of research objectives. (Rifki Ayu Rosmita, 2018)

### **RESULTS AND DISCUSSION**

#### ***1. Implementation of Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the State Defense Area in the North Natuna Sea***

##### **Standards, goals and activities**

Indonesia's defense must be the main focus in relation to the North Natuna Sea because security, defense, unity and integrity are the state's obligation to protect it. Indonesia has an interest in handling conflicts in the North Natuna Sea, because if it cannot be handled properly, it will have an impact on the stability of Indonesia and the region's security. Indonesia also has an interest in asserting its claim to Indonesia's EEZ in the waters located north of the Natuna Islands. In addition, to measure the



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performance of the implementation of Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the State Defense Area, of course, confirms certain standards and targets that must be achieved by policy implementers, policy performance is basically an assessment of the level of achievement of these standards and targets. That the implementation of the Government Regulation of the Republic of Indonesia Number 68 of 2014 starting from the determination, planning, utilization and control has been quite good, but socialization is still needed to the lower units so that it can run as expected. Planning for existing programs must be able to realize national goals in the planning of structuring the defense area.

### **Resource Policy**

The policy is not only the setting of complete standards and objectives in assessing implementation but also must provide adequate resources, including Facilities and Infrastructure Resources, human resources and financial resources in the environment. The existing resources are still limited and need to be added both in terms of quality and quantity. This is an important component that determines the successful implementation of government policies, implementation of work programs and the control function of a policy. In meeting the needs for facilities and infrastructure related to the authority of the local government, regarding the need for development land and other regulations, the local government has full support. This is in accordance with the results of the interview with informant 2 in the field.

Inadequate facilities and infrastructure can be overcome with full support from local governments and local communities in order to realize the national interest. This is in accordance with article 26 paragraph 1 of Government Regulation Number 68 of 2014 which states that the Government and/or local governments are obliged to provide land for the construction and development of defense areas. In addition, the Central Government has implemented a complex strategic plan that covers all aspects of life, both economic, social, political, cultural, defense and security. On the criteria of the Resource Policy, it can be concluded that the number of resources owned and the active role of the Government in carrying out development in the Natuna Islands is a strength that can be utilized as well as possible, but there are also weaknesses that require the management of these resources independently and the technology owned is still This is coupled with the limited budget that is owned, especially in the defense and security sector due to the vast territory of Indonesia so that it is carried out according to a priority scale.

### **Inter-organizational Communication and Activities**

Effective implementation requires program standards and objectives to be understood by individuals and each individual is responsible for achieving them. Communication is vital that we focus on the clarity of standards and objectives, the accuracy of the communication of the implementers, and the consistency (similarity) of being communicated and the various sources of information. Standards and objectives are clearly defined so that implementers can know what is expected. Communication is carried out both within and between organizations in a complex process that seems to have many difficulties. Based on the statement above, it can be interpreted that communication between parties is carried out by sharing procedures and joint operations, so that good synergy is established. The synergy that occurs between stakeholders is built on a sense of trust, effective communication, reciprocal relationships, creativity by providing rewards or innovations in the intended program. Good synergy among stakeholders gives positive results in program implementation. If there is no clarity and consistency as well as uniformity towards a standard and policy objectives, then the standards and policy objectives are difficult to achieve. With that clarity, policy implementers can know what is expected of them and know what to do. In a public organization, local government for example, communication is often a difficult and complex process. The process of transferring news down within the organization or from one organization to another, and to other communicators, often experiences distortion, whether intentional or not. If different communication sources provide inconsistent interpretations of a standard and purpose, or the same information source provides conflicting interpretations, then at one time policy implementers will find an event that is more difficult to implement a policy in a consistent manner. intensive. Thus, the prospect of effective policy implementation is largely determined by accurate and consistent communication to policy implementers (accuracy and consistency).

### **Characteristics of Implementing Agencies**

In the implementation of the Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the State Defense Area in the North Natuna Sea, the implementing agency is a combination of various government institutions and has military authority as well as the North Natuna region. This indicates that Indonesia has made efforts to maintain the existence of the outermost islands within the territorial integrity of Indonesia. The Indonesian Navy carries out more optimal planning when faced with Soldiers involved in the operation to secure the Outermost Islands, they must work hard in patrolling and stopping at the outer islands, both populated and uninhabited, in accordance with applicable procedures and rules in maintaining and securing the territory. NKRI. By placing personnel and adequate equipment, security on the outer islands which are also used as defense areas can be better maintained. From the information above, there is an opportunity that so far joint operations and joint exercises

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have been carried out both with stakeholders and with foreign countries, while the factors that pose a threat are the absence of common Standard Operating Procedures (SOP) and the absence of a Network Centric Warfare program.

### **Performance**

Performance is a measure of the success of the implementation of Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the National Defense Area in the North Natuna Sea, that performance in the implementation of defense is in accordance with PP No. 68 of 2014 concerning the arrangement of the national defense area, this is indicated by the development of defense. massively in the area and the Government Regulation becomes a guideline on how to implement defense in the outermost areas, including in North Natuna. This is in accordance with the ideals of the development of the World Maritime Axis but with various limitations so that the development of the maritime area has not been consistent and is divided into the development of land areas, especially development outside the island of Java.

### **Economic, Social and Political Conditions**

China's threat in the Natuna waters is a threat to Indonesia's sovereignty in the Indonesian territorial sea and a threat to Indonesia's sovereign rights in Indonesia's EEZ. Indonesia's response to the Chinese threat in the Natuna waters under the Jokowi administration was carried out through increasing military capabilities, diplomatic efforts and naming the North Natuna Sea. The Indonesian government under the Jokowi administration wants to make Indonesia a world maritime axis with one of its missions building a strong maritime defense and security. Indonesia is obliged to build a maritime defense force, not only to maintain maritime sovereignty and wealth, but also as a form of the Indonesian government's responsibility in maintaining shipping safety and maritime security. This means that Indonesia must also be active in protecting its border areas that are vulnerable to conflict and threats caused by claims between several countries.

Conditions that can affect the implementation of the Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the National Defense Area in the North Natuna Sea, namely the existence of political conflicts where there are still unresolved maritime boundaries between Indonesia and Vietnam and Malaysia, especially in the North Natuna Sea. The emergence of national interests begins with the needs of a country. This need can be seen from its internal conditions, namely political economy, military, and socio-culture. This interest arises on the basis of the power to be created with the aim of a country being able to gain world recognition of its national interests. That the economic life of the Natuna people depends on Natuna waters because the Natuna area is only 1 percent of the land, apart from that it is sea waters. The livelihoods of the surrounding community are also generally fishermen. Meanwhile, the presence of the TNI in maintaining the Natuna area was also welcomed by the surrounding community.

### **Attitude of the implementer**

Each component of this model is discussed and must be filtered about the perceptions of the implementer or implementer in the area where the policy is delivered. The intensity of the attitude of the implementer is influenced by the performance of the policy. On the implementation of Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the State Defense Area in the North Natuna Sea. that the attitude of the implementers in this study is interpreted as support for the program or the desire to implement policies which are indicated by a commitment to the implementation of the Natuna defense program in accordance with Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the National Defense Territory in the North Natuna Sea. All implementing parties are not only required to accept the policy of the State Defense Area structuring program in the North Natuna Sea, but more than that they are more required to be committed to implementing it and realizing its goals and targets. The expected commitment should be in tangible form through programs and activities that support the Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the State Defense Area in the North Natuna Sea. From the information above, it can be concluded that every component of both the TNI and the people have a unified attitude in defending the territory of Indonesia and carrying out development in the field of defense and security.

### **CONCLUSION**

Based on the discussion in the previous chapter, this research can be concluded as follows:

1. The implementation of Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the National Defense Area in the North Natuna Sea based on the Van Meter Van Horn theory has not run optimally, it still requires various improvements in several ways, namely: a. Aspects of standards, objectives and activities covering the determination, planning, utilization, control of defense areas have been running quite well but still need improvement with the implementation of development programs and good spatial planning so that they are in accordance with the expected

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conditions with very good results; b. Aspects of Resource Policy which include Facilities and Infrastructure Resources, Human Resources and Financial Resources still require improvement and good management by implementing priority scale facilities and infrastructure development, increasing the number and quality of personnel and improving the global economy; c. Aspects of communication between organizations have been going well even though there is no integrated one-command system so that organizational validation is needed that is able to control all existing systems; d. Aspects of Institutional Characteristics related to Standard Operating Procedures (SOP) are still in accordance with their respective agencies and do not yet have the same procedures so that a Network Centric Warfare program is needed in carrying out defense and security in the North Natuna Sea; e. Aspects of the existing performance so far, the development carried out is still divided between maritime development and land areas outside Java, so that priority scale development needs to be carried out; f. Aspects The economic, social and political conditions have been going well and improvement is needed so that Indonesia becomes a developed country and is respected by the world. g. Aspects The attitude of the implementer has been running as desired, namely that all parties are consistent and committed in the development and implementation of Government Implementation Number 68 of 2014 concerning the arrangement of the state defense area.

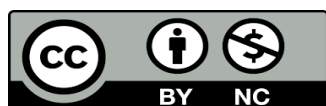
2. Factors in the Implementation of Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the State Defense Area in the North Natuna Sea can be seen from internal factors and external factors. a. Internal factors include factors of strength and weakness. Based on the results of the SWOT analysis, it was found that for the greatest strength, namely having a spatial plan for the defense area so that it is able to ward off threats in accordance with the direction of the threat. This is evidenced by the highest score of 0.349. Meanwhile, the biggest weakness is that they have not been able to manage their own natural resources independently and the existing technology is still limited with the highest score of 0.170; b. External factors include opportunities and threats. Based on the results of the SWOT analysis, the biggest opportunity in State Defense Territory Arrangement in the Perspective of Defense Management in the North Natuna Sea is the agency's work plan in accordance with the Nawacita of the World Maritime Axis. This is evidenced by the highest score of 0.259. While the toughest threats are easily provoked and easily divided with the highest score of 0.229.
3. Strategies that can be applied in the Implementation of Government Regulation of the Republic of Indonesia Number 68 of 2014 concerning Structuring the National Defense Area in the North Natuna Sea based on the defense doctrine of the Republic of Indonesia in sequence according to the results of the AHP analysis are as follows: a. Prepare active defensive defenses; b. Implementing resource management; c. Realizing a universal defense; d. Setting up a layered defense; e. Enhance international cooperation; f. Improving maritime, land and aerospace security; g. Build and utilize the defense industry; h. Creating awareness and ability to defend the country

### REFERENCES

- 1) Agustrian, N, L., Rizkan, R., and Izzudin, M. (2018). Management of Life Skill Program at Al-Hafidz Shelter, Bengkulu City. *Journal of Community Development*, 1 (1), (7-13). <https://ejournal.unib.ac.id/index.php/jpls/article/view/4031>
- 2) Arsyad. 2006. Implementation of Government Regulation Number 33 of 1998 concerning Equity Participation in the "Setia Bhakti Wanita" Women's Cooperative Surabaya. *Equity* Vol.10 No.3 September 2006 ISSN 1411-0393, 356.
- 3) Asfi, M., & Sari, R. P. (2010). Decision Support System for Selection of Outstanding Students Using the AHP Method (Case Study: STMIK CIC Cirebon). *Journal of Informatics*, Vol. 6, No. 2, December 2010: 131-144, 131-144.
- 4) Darmawi, Eddie. 2013. Analysis of the Success of Small and Medium Industry Development in North Bengkulu Regency. *Journal of Social and Political Research*, Vol 2 No.2, ISSN: 2252-5270, 3.
- 5) David, Freddy R. 2015. Personal swot analysis. Jakarta: Gramedia Utama
- 6) Dwidjowijoto, R. N. 2016. Public Policy for Developing Countries. Jakarta: PT Lex Media Komputindo.
- 7) Ekowati, Mas Roro Lilik. 2019. Planning, Implementation, & Evaluation of a Policy or Program (A Theoretical and Practical Policy). Surakarta: Surakarta Chakra Library.
- 8) Fatimah, Fajar Nur'aini D., 2016, SWOT Analysis Techniques, Quadrant: Yogyakarta.
- 9) Science, Nur. 2020. "The Impact of Naming the North Natuna Sea on Indonesia-China Bilateral Relations." *Journal of International Relations*, Volume 6, Number 4 482-490.
- 10) Maulana, Rio Yusri, and Moh. Arief Rahman. 2020. "A Good Governance Approach in Strengthening National Border Security: A Study in the North Natuna Sea Region." *Journal of Political Discourse*, Vol. 5, No. 1, March 71-86.
- 11) Muhaimin, Ramadhan. 2018. "Securitization Policy and Threat Perception in the North Natuna Sea." *Politics*, Vol. 9 No. 1 June 17-37.
- 12) Rubel, Robert C. 2012. *Navies and Economic Prosperity-the New Logic of Sea Power*. Paper, London: Kings College London.

## Implementation of Government Regulations of the Republic of Indonesia Number 68 of 2014 Concerning Structure of The State Defense Area in The North Natuna Sea

- 13) Suharyo. 2019. "Enforcement of Maritime Security in the Unitary State of the Republic of Indonesia and its Problems." DE JURE Journal of Legal Research, Vol. 19 No. 3, September 285-302.
- 14) Fitri, W. I. 2015. Implementation of Regional Regulation of Samarinda City Number 19 of 2001 concerning Regulation and Guidance of Street Vendors (Case Study at Morning Market in Samarinda City). eJournal of Public Administration, 3(4): 1820-1834 ISSN 0000-0000.
- 15) Hamid, Abdul. (2015). Implementation of North Penajam Paser Regent Regulation No. 18 of 2012 concerning the Implementation of Free Education in Nenang Village, Penajam District, North Penajam Paser Regency. Government eJournal, 3, (2) 2015: 623-635, ISSN 0000-0000, 626.
- 16) Herjanto, E. (2018). Management Science Quantitative Analysis For Decision Making. Jakarta: Grasindo.
- 17) Hermabin, John., Djumadi., Idris, Adam. 2014. Implementation of Regional School Operational Assistance (BOSDA) Policy at State Senior High School 1 Sendawar, West Kutai Regency. eJournal Administrative Reform, 2014, 2(3): 1746-1758, ISSN 2338-7637, 1749.
- 18) Science, Nur. 2020. "The Impact of Naming the North Natuna Sea on Indonesia-China Bilateral Relations." Journal of International Relations, Volume 6, Number 4 482-490.
- 19) Irawan, A. 2015. Implementation of Regional Regulation Number 5 of 2001 concerning Permits to Construct Buildings in Malinau District, Malinau Regency City. eJournal of Integrative Governance, 3(2): 362-374, ISSN 2337-8670.
- 20) Marimin. (2014). Multiple Criteria Decision Making Techniques and Applications . Jakarta: Grasindo.
- 21) Matompo, Osgar S. (2018). "Handling Illegal Fish Theft Practices in Indonesian Waters." Legality: Scientific Journal of Law 26, No. 1: 133.
- 22) Maulana, Rio Yusri, and Moh. Arief Rahman. 2020. "A Good Governance Approach in Strengthening National Border Security: A Study in the North Natuna Sea Region." Journal of Political Discourse, Vol. 5, No. 1, March 71-86.
- 23) Muhaimin, Ramadhan. 2018. "Securitization Policy and Threat Perception in the North Natuna Sea." Politics, Vol. 9 No. 1 June 17-37.
- 24) Nurcholis, H. 2015. Theory and Practice of Regional Autonomous Government. Jakarta: Grasindo.
- 25) Prasetyo, M. I. 2013. Evaluation of Sidoarjo's Child Friendly City Policy in Krembung District, Sidoarjo Regency. Journal of Public Policy and Management Volume 1, Number 1, January 2013 ISSN 2303-341X, 141-156.
- 26) Putranti, Ika Riswanti. (2018). "Violations of Indonesia's Sovereign Rights: A Case Study of China in the North Natuna Sea." Journal Of International Relations 4, No. 4 (2018): 870.
- 27) Rubel, Robert C. 2012. Navies and Economic Prosperity-the New Logic of Sea Power. Paper, London: Kings College London.
- 28) Rubiyanto. 2012. Implementation of Regional Regulation Number 11 of 2000 concerning Regulation and Guidance of Street Vendors on the Order of Street Vendors in the City of Semarang. Law and Community Dynamics Vol. 10 No.1 October 2012 ISSN: No. 0854-2031.
- 29) Silalahi, M. (2016). His research. The Study of Ethnomedicine in Indonesia and Its Research Approach, 9, 117-124.
- 30) Suharyo. 2019. "Enforcement of Maritime Security in the Unitary State of the Republic of Indonesia and its Problems." DE JURE Journal of Legal Research, Vol. 19 No. 3, September 285-302.
- 31) Sugiyono. (2018). Combined Research Methods (Mixed Methods). Bandung: CV Alfabeta
- 32) Supriyono, Wardhana, W. A., & Sudaryo. (2017). Structural Official Selection System with AHP Method. Third National Seminar on Human Resources for Nuclear Technology Yogyakarta, 21-22 November 2007 ISSN 1978-0176.
- 33) Taufiqurokhman and Satispi, Evi. (2018). Theory and Development of Public Service Management. South Tangerang: UMJ Press.
- 34) Trisnanto, D. R. 2015. Implementation of Policies for Setting Business Places and Guidance of PKL Krian Terminals in Sidoarjo Regency (Descriptive Study on Factors Affecting the Implementation of Policies for Setting Business Places and Guiding PKL Krian Terminals, Sidoarjo Regency). Public Policy and Management Volume 3, Number 1, January-April 2015, ISSN 2303-341X, 1-15.
- 35) Wangke, Humphrey. (2020). "Enforcing Indonesia's Sovereign Rights in the North Natuna Sea", Journal of the Research Center of the Indonesian House of Representatives Expertise Board 12, no.1



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## Pedagogical Practices of Hospitality Management Faculty Members



**Martino Miguel M. Salcedo**

Lyceum of the Philippines University, Manila, Philippines

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**ABSTRACT:** This research aimed to find out how the Hospitality Management Faculty Members of Lyceum of the Philippines University and University of Santo Tomas are perceived by their students in terms of knowledge, skills, attitudes and teaching strategies and if there is a significant difference among the students' perception regarding, knowledge, skills, attitudes and teaching strategies when grouped according to age and sex. This research used the descriptive method and the data gathered was subjected to statistical treatment making use of weighted mean and Mann Whitney U Test. Majority of the respondents' age were 20 and above, most were female (71.30%). The respondents showed strong agreement that the faculty members are knowledgeable (4.54) which translates as strongly agree. The respondents showed agreement that the faculty members demonstrate execution of complicated skills (4.42), demonstrate attitudes (4.39) that are important in the hospitality industry and teaching strategies (4.42) utilized are varied. When grouped by age, the exhibition of knowledge has a p-value of 0.0164 which rejects the null hypothesis. Its interpretation is that there is a difference between age groups 17-19 and 20 and above. Conversely, Skills (p-value 0.2036), Attitudes (p-value 0.9452) and Teaching Strategies (p-value 0.183) failed to reject the null hypothesis and therefore not significant when grouped according to age. When grouped according to sex, knowledge (p-value 0.4404), skills (p-value 0.8517), attitudes (p-value of 0.9483) and teaching strategies (p-value of 0.7022), all four fail to reject the null hypothesis. This suggests that there is no significant difference when grouped into sex.

**KEYWORDS:** Attitudes, Knowledge, Pedagogical Practices, Skills, Teaching Strategies.

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### I. INTRODUCTION

The teaching profession has continued to be an inspiring and worthwhile career more than employment for salary and wages as compared to other professions around the world. It is least to be chosen among number of college students to enroll in many universities, as it was underscored by Bilbao, Corpuz, Llagas, Salandanan, (2015) that a careful choice must be done before finally choosing this career for its mental, physical, spiritual and financial impact.

Despite these realities, there are other professions that end up in the academe, specifically, in Higher Education Institutions (HEI's) and State Universities and Colleges (SUCs), where the sharing and transfer of knowledge and expertise of specific skills to students have taken precedence. Same goes in the Hospitality Management program.

The end goal of the CHED, memorandum Order #62 series of 2017 is for the Hospitality Management program to keep pace with the demands of the local and global travel, tourism and hospitality sector that is on a globally competitive scale. This will require students to be equipped with competencies needed to execute operational tasks and management functions in areas such as food production, accommodation, food and beverage services and other emerging sectors important to this program.

Hence, the demand rises for a pool of experts in the field of hospitality management to teach the knowledge, skills, attitude, coupled with appropriate teaching strategies necessary for understanding the pedagogies of the program.

Ko (2012) mentions that students respond well to teachers who have professional backgrounds and competencies, exhibit knowledge, skills in their fields of expertise and are knowledgeable in different fields as well.

Education in hospitality management differs from education in other undergraduate courses due to the enhanced skills and service-oriented nature of the hospitality industry (Garcia, Hertzman, Mandabach, 2020). Thus, hospitality management educators are encouraged to adopt new methods to enhance teaching especially for this generation (Wong, Pang, Wong, 2012)

Innovative educators and learning designers have utilized and combined emerging technologies such as computer games, virtual worlds, etc. to design learning environments that are realistic, authentic, engaging and enjoyable (Wong, et al 2012). Even face-to-face activities was stressed by Jacobsen (2011). that it can be used to support online educational activities based on the

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subject for better learning engagement Shared information about teachers' knowledge, skills, attitudes and teaching strategies can increase attention to what the HEI's and SUC's hospitality management faculty members preferred teaching style which may therefore may help the future of Hospitality Management education towards the implementation of improved and effective teaching strategies, learning models and methods (Deale, O'Halloran, Jacques, Garger, 2013)

This research also aims to aid Master's in Business Education candidates who teach under the Hospitality Management program to enhance their knowledge to better address the needs of HEI's and SUC's to utilize specific teaching strategies that are effective to this course.

Employment in the tourism and hospitality industry in the Philippines was pegged at 5.4 million in 2018, 1.8% higher than 5.3 million in the previous year, PSA reported. Share of employment in tourism industries to total employment in the country was recorded at 13.0% last year (Cigal, 2019). It reinforces the need in utilizing teaching strategies effective to Hospitality Management which is supported by Liasidou (2016) that the incorporation of various methods of teaching enhances the learning experience, in this case, its application to the HM course which may make their students more enthusiastic in their involvement. The learning styles of the students should always be considered by educators to better understand them and appropriately address their needs. In doing so will enable them to be more proactive, adaptive and have an overall better learning experience. Bhinder (2019) states that the curriculum content can be developed in such way that it can be enriched with various methods of learning and teaching which may have the potential to help Master in Business Education educators who teach under Hospitality Management program.

This is under the premise that the researcher dealt pedagogical practices of hospitality management faculty members from the selected private universities in the country as assessed by the students

### **OBJECTIVES OF THE STUDY**

This research aimed to find out what are the pedagogical practices of Hospitality Management faculty members as assessed by their students. Specifically, this study sought to answer the following questions:

1. What is the profile of the respondents in terms of: Age and Sex
2. How do the respondents assess the faculty pedagogical practices in terms of: Knowledge, Skills, Attitudes and Teaching Strategies and
3. Is there a significant difference on the faculty exhibition of teacher's assessed pedagogical practices when the respondents are grouped into age and sex?

## **II. LITERATURE REVIEW**

### **Knowledge of Hospitality Management Teachers**

This century, the Generation Z and their educators require faculty members to understand the kind of learners they are to face. It is understood that 21<sup>st</sup> century learners provide potential that have never been seen before. CHED now require teachers and faculty members to provide output pertaining to research extension, seminars, etc. Teachers must also use a variety of teaching strategies that make the

Instructional content relevant and meaningful to today's students. This paradigm occurs since today's learners are drastically different from before.

The students of today are now known as "Generation Z" Born from 1996 to present while most of the current educators are called "Digital Immigrants born from 1980 to 1995 (Wei, et al 2019). To the natives, technology has completely shaped and changed them on how they receive and disperse information, even the way they eat, play, learn, shop and interact with their environment are affected. Educators that will shape the minds of the youth today are tasked to steer them in the right path so they may discover their full potential and help them find their place in the world. It is then their responsibility to also understand what is current to the students and the technologies that affect them. However, for some, this is not quite so easy. Regardless, the immigrants will eventually have to learn the ways of the natives or face obsolescence. (Prensky, 2011)

Hospitality Management instructors may not be familiar with the current educational technology which in turn would hamper their creativity in designing a successful instructional material or course. Cooperation with blended learning specialists who have expertise with the design and teaching aspects could help in delivering effective, easy-to-use and welcoming educational technologies, delivery mechanisms and instructional approaches. (Wong, et al 2012) Guest speakers may even participate in online class discussions to impart with students, up-to-date industry standard knowledge and insights that are globally competitive.

Pedagogical aspects of designing hospitality management curriculum and teaching it in HEI's and SUC's, face an ever existing challenge of how to open up dialogue with teaching tourism and hospitality, and how to apply different non-traditional methods of teaching the students the applied and theoretical aspects. It is made more difficult with the engagement of students

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with different backgrounds, races and learning styles. It is often perceived that there is no room for theory or personal reflection in a curriculum crowded with specialist and applied management knowledge (Fullagar, et al, 2012)

Computer courses and new technology were not given priority in teaching Hospitality Management subjects before. However, today's competencies related to computers and technology is highlighted (Johanson, 2010). Especially in light of the recent spread of the pandemic COVID-19, it has restructured the landscape of education to a more virtual one.

Schoffstall (2013) states that academic engagement is a challenge that Hospitality Management teachers are facing. Today's HM instructors must be competent in many aspects of life and not just in relation to the subject they teach. This ensures that they remain relevant and avoid becoming obsolete. Part of this is their continuous professional development which is required by CHED and Higher Education Institutions (HEI) and State Universities and Colleges (SUC's) and it is also a way for them to impose stricter rules and guidelines against new forms of cheating, plagiarism and intellectual property theft.

That is why HM educators must be adept to not just improve their lives, making things easier for them which in effect will make their jobs easier but to also be able to better understand their 21st century Gen Z students. This in turn will help them become better educators who can fully understand why their students are the way they are and where they are coming from and be able to impart their knowledge in an acceptable fashion to the students to help them realize their full potential.

Besar (2018) mentions Jean Lave and Etienne Wenger expounded in the 1990's the theory of Situated Learning. Situated learning theory holds that knowledge delivered should be contextual. Knowledge should be applicable in authentic settings of daily practice, and should be low-risk.

This usually requires interaction and collaboration with the HM students and their environment; in this case the school will provide a simulated environment.

Eventually, learners become engaged in more dynamic and complex activities, and transition into the role of the expert. This process usually occurs unintentionally. J. Lave & E. Wenger call this process "legitimate peripheral participation" Such was the influence of this theory that it led some researchers to argue that learning can only be meaningful if it is embedded in the social and physical context. It claims that students are more likely inclined to learn when they are actively participating in the learning experience. At its core, situated learning is the creation of meaning from everyday living situations. This supports the theory that Hospitality Management students respond to educational content when they themselves are experiencing it.

### **Skills of Hospitality Management Teachers**

Commission on Higher Education (CHED) Requirements, the CHED MEMORANDUM ORDER (CMO) no. 62, SERIES: 2017, SUBJECT: POLICIES, STANDARDS AND GUIDELINES FOR BACHELOR OF SCIENCE IN TOURISM MANAGEMENT (BSTM) AND BACHELOR OF SCIENCE

IN HOSPITALITY MANAGEMENT (BSHM) states that the minimum qualification of faculty members should have a Master's degree in either Tourism, HM or any of the indicated allied programs and must have a bachelor's degree in Hospitality Management or any related field with at least one year experience in the tourism and hospitality industry.

For Industry Practitioners who do not have the above mentioned qualifications may still teach parttime in the programs provided if they possess at least a Bachelor's degree in Tourism, HM/HRM or allied programs and at least three (3) relevant work experiences.

All faculty members must teach courses only within their field of specialization. However, universities encourage their faculty to have multiple discipline backgrounds so that HM subjects are viewed from multiple perspectives which may help in forming tailored teaching strategies specific to certain types of students. Salazar et al (2017) states that, it is the teacher's knowledge, skills, attitude and teaching strategies that matter to students. The study did not focus on the environment as the schools that they included had similar facilities.

Instructors are tasked with training future professionals in the hospitality industry that are equipped with the knowledge skills, industry practical competence and confidence, so they may become fullfledged professionals in the industry. (Wong, et al 2012)

That is why, the Business Council of Australia have tapped business graduates who have gained varied professional skills and expertise (e.g., cross-cultural, communication, team work, etc.) that aligns with the educational needs of hospitality management students. Critical thinking is being considered as a major skill and its application to independent thinking, critical analysis of issues and problems and its use on different contexts and problems solving. (Business Council of Australia, 2011).

The hospitality industry could provide the educational institutions with better opportunities for internships, trainings, ocular visits and observations for better skills and knowledge development. The increase of number of internships and trainings can improve the overall quality of incoming employees. The strengthening of this mutually beneficial relationship between

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institutions and interns can significantly increase the overall quality and increase number of graduates that are competent Thus, improving the perception of employers of newly graduates and their capabilities. (Tesone, et al 2012)

The practice of students learning from practitioners was already present even during the middle ages. According to Gisslen (2016), during that time, bakers and pastry chefs in France formed guilds to protect and advance their art. The guilds, as well as the apprenticeship system provided a way to pass the knowledge of the baker's trade from generation to generation. It is evident here that if a subject matter is skill intensive it was better to learn from a master practitioner of said skill, in this case baking. To become master bakers, workers had to go through a course of apprenticeship and obtain a certificate stating they had gained the necessary skills.

Chiou as mentioned by Ko (2012) observed that university students placed heavy importance on instructors that have professional industry backgrounds, regardless whether the students themselves had experience with technical courses or general studies. The students tended to place greater reliance on experiential learning modalities. Since Hospitality Management is a course that is also very skills intensive it follows that the students show more aptitude when the instructor shows professional competence. This is where the frame of mind or mindset of the teachers plays an important role.

Tesone (2012) states that it is important that there should be a strong collaborative effort and initiative between educators and practitioners so as to give the students a realistic view of what it is that they will encounter in the industry and dispel any glamorous notions of what it is like to be part of the hospitality industry. Part of this is the continuous professional development of teachers. This is to ensure that the HM teachers remain relevant and are up-to-date with current industry practices. This will show the students that despite the hardships that they will face professionally, it is important to show that the acquisition of new knowledge and skills does not stop.

## **Attitudes of Hospitality Management Teachers**

The saying "The teaching profession is said to be the profession that creates all other professions" (Bilbao, et al.,2015) is quite true. Learning from skilled instructors and industry practitioners is important. However it can also be said that that the teaching profession creates or instill in the student the attitudes and frame of mind needed to succeed in any industry. It is for this very reason that mentors, instructors or practitioners who are also in the academe must be very careful with the type of attitudes and mindset that they show for they do not just impart knowledge, they are the role models with which students, apart from their parents, base and pattern their actions on. The right attitude that teachers display, can help their students reach their full potential. However the wrong attitude can harm students and potentially scar them for life.

Students learning from teachers who display an adaptive mindset and a strong sense of professionalism will give them role models that will provide them the necessary frame of mind that will help them in the professional setting. The importance of a professional attitude begins even before you start your first job. Arriving on time, dressing appropriately, behaving the right way, dedication to quality and eagerness to learn are some examples so that the employers notice you for the right reasons.

The Hospitality Industry is a high pressure environment and this requires staying power or grit to be able to push through long monotonous or grueling hours, working during the holidays and still be consistent is what the students, who go into the workforce, will face. This requires a high level of professionalism, sense of responsibility, dedication and frame of mind to your profession, to your coworkers, and to your customers or clients. Working with people is important. In any hospitality setup, teamwork is essential so that the company remains productive. One cannot afford to let ego problems, petty jealousy, departmental rivalries get in the way of doing your job well. Today's HM industry holds people of many races, nationalities, and origins, from all walks of life that even speak different languages so it is imperative to be a teamplayer (Gisslen 2018).

In terms of attitude there is extremely little difference between hospitality management beverage educators who are from the industry and those who are in the academe. It shows that the attitudes adopted in hospitality management whether industry or academe do not vary (Garcia, 2020)

Despite the varied pedagogical practices of HEI's and SUC's that offer hospitality management, one of the challenges is to teach the students, whom we hope will be our future leaders, is how to develop a reflexive sense of identity, both academic/conceptual and professional/applied. Despite differences there is a commonality between universities, the importance of critical thinking and judgment and creative problem solving. Many course content claim to apply such "creative thinking approaches" (Fullagar, et al, 2012).

Employers according to Tesone, et al (2012) prefer interpersonal interactive abilities over productive and concrete work processing skills. They have learned that in practice, hospitality managers hire mainly based on attitude and specific knowledge and skills second. Traits that are most relevant to employers are teamwork, empathy, anticipation of customer (guest) needs, and a high tolerance for ambiguity as skills and abilities. As far as Attitudes, the practitioners rated pride in helping others, priority of others' needs over self, optimism, and empathy as core values. Also, the respondents emphasized issues concerning realistic



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job expectations. This can give educators in business and hospitality management programs clues concerning the learning outcomes that suit the perceived needs of the hospitality and tourism industry.

### **Teaching Strategies of Hospitality Management Teachers**

Dr. Howard Gardner (2011) who was a professor of education at Harvard University, developed in 1983 and updated in 2011 the theory of multiple intelligences. This theory suggests that the traditional testing of intelligence based on intelligence quotient (I.Q.) scores were too limiting. He proposed nine varied intelligences to account for a wider range of human potential in children and adults. These intelligences are as follows: Linguistic intelligence (“word smart”), Logical-mathematical intelligence (“number/reasoning smart”), Spatial intelligence (“picture smart”), Bodily-Kinesthetic intelligence (“body smart”), Musical intelligence (“music smart”), Interpersonal intelligence (“people smart”), Intrapersonal intelligence (“self-smart”), Naturalist intelligence (“nature smart”), Existential intelligence (“Spiritual intelligence or cosmic smarts”).

Schools and culture according to Dr. Gardner mostly focus on linguistic and logical-mathematical intelligence. These two intelligences are regarded highly by our society. Conversely, Dr. Gardner points out that equal attention should be given to individuals who exhibit remarkable talent in the other intelligences such as chefs, bakers, artists, architects, musicians, dancers, therapists, naturalists, entrepreneurs, designers, etc. Sadly, many do not receive guidance to nurture and grow these talents especially in schools. Talented youths like these need to learn from talented individuals who also excel in the same area and understand the needs and feelings of these children.

Whether they are hospitality management instructors or industry practitioners, the resources of talented people are too few. A lot of these hospitality students even get wrongly assessed and end up being labeled as underachievers, learning disabled or diagnosed with ADD (attention deficit disorder). Or they are simply just let behind since their unique intelligence and learning styles are not addressed especially in a heavily linguistic or logical-mathematical classroom.

That is why universities offering Hospitality Management, the teachers and the curricula must constantly evolve and improve to be able to cater to the educational needs of their students. Armstrong (2018) states that the theory of multiple intelligences proposes a major shift how schools will operate. He proposes that teachers are taught how to effectively deliver to their varied students. That lessons and instructional material be delivered through varied strategies such as music, group projects, art activities, stage plays, multimedia, field trips, journal writing, etc. The theory of multiple intelligences has now become popular among many educators around the world especially in Hospitality Management. However there are still some schools that have not adapted to this way of thinking and still cling to traditional methods of learning. Ultimately, with this, it is the child who will benefit most since this will open up other avenues of learning methods and styles to many children who excel in different fields and have specific learning styles.

Teaching strategies geared multiple intelligence are important whether the teacher has a pedagogical background or an industry professional (non-education background). The strategies have to cater to students who have different learning styles. The present worldwide educational system recognizes greatly the importance of multiple intelligences (Howard, et al 2010). It dictates that if the students of today are to be placed on a competitive level against the best students of the world, educators should be highly qualified to teach in the manner that the students understand and appreciate.

Currently, teachers are tasked to use different teaching strategies that are relevant to today's students. They use numerous strategies to help them impart their knowledge that is acceptable to the students. It is important that the medium is acceptable to the students due to the fact that they are the recipients of the knowledge being imparted. If the strategies do not match the students learning style then there is a high probability that the student will not learn. That is why teaching strategies have to be very varied to be able to cater to different types of students and their learning styles.

The sharing of information about the teachers and teaching preferences and behaviors can spur the increase in awareness as to what hospitality and tourism faculty members do when they teach and the strategies that they prefer. Most importantly, this can help direct the future of hospitality education and its educators along the path towards the implementation of more dynamic teaching and learning models and methods. (Deale, 2013)

Luka, et al (2012) and Lee, et al (2009), mentions that it is important to note that in order for students to learn valuable knowledge, universities must constantly create new curricula and adapt the existing ones to reflect a more realistic view of the industry. Skills that are useful help the students in finding a job such as English Language and Computer skills (Tesone, et al 2012). Hospitality companies are looking for employees that already have these skills to make training easier and faster. Hospitality management programs according to the study of Horng, et al (2008). had six standards that they highly excelled in which were the following: strategic planning, curriculum and instruction, faculty resources, student achievements, administrative management.

The important aspects of these quality educational institutions were namely curriculum, teaching and learning concepts. Those were greatly highlighted in this study while program resources were found least important (Horng et al. 2008). It is

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important to note that universities offering hospitality management must respond to the needs of the industry by adapting their curricula to produce students who are able to supply this need.

The embrace of instructional design in relation to blended learning helps validate as to why hospitality management students welcomed blended learning since they responded more to varied teaching methods. However it was revealed that online learning usually involved the students' own initiative to structure knowledge. Thus, issues regarding emerging educational trends geared towards student-centered learning approach should also be further investigated. (Wong, et al 2012)

The academe and its faculty members of hospitality management are critical in providing inputs on course subject content and may provide a framework which may be applied to design and develop a futuristic liberal hospitality curriculum. (Parvadhavardhini, et al, 2017) Dredge (2012) has observed that creativity and innovation are essential within the curriculum space and is essential to delivery of course content.

Some studies regarding hospitality management curriculum have debated that the curriculum must include not only crucial operational skills but also behavioral aspects of personal and managerial skills and a balanced educational experience will prepare today's graduates to be tomorrow's managers (Swanger, et al, 2016, Schoffstall, 2013).

A trend in hospitality programs stated by Huang (2015) is the evolution of business education from traditional to a more innovative and practical approach. A creative and innovative curriculum is now essential and a fundamental cornerstone for both international and domestic hospitality management students that helps them build comprehensive skills and knowledge and are groomed to be globally competitive employees (Irungu, 2010).

In understanding the hospitality sectors' employers and customers wants and needs, graduates must learn to understand the dynamics of service in the form of experiential learning. In doing so, educators can implement various pedagogical approaches that better prepare hospitality students to become hospitality professionals (Cecil, 2012). Thus, competencies related to the curricula must be developed to allow students to gain competencies both soft and hard skills to better prepare them after graduation.

### **Synthesis**

It is important to note that, whether a teacher has a pedagogical background or is an industry professional, knowledge, skills, attitudes and teaching strategies are important especially in Hospitality Management where all four are integral and are interconnected. Ko (2012) mentioned Chiou to have observed in 2008 that instructors who have professional industry backgrounds were regarded highly by university students, regardless whether the students themselves had experience with technical courses or general studies. It showed that current Hospitality students responded better with experiential learning. Hospitality Management is a course that is very skills intensive. Therefore, it follows that the students show more aptitude when the instructor shows professional competence and is knowledgeable and skilled in his respective field. The Hospitality Management course greatly focuses on teaching strategies that incorporate Jean Lave and Etienne Wenger 1990's the theory of Situated Learning. It is an instructional approach which at its core, situated learning is the creation of meaning from everyday living situations (Besar, 2018).

This supports the researcher's observation and researched data that hospitality students are more likely inclined to learn when they are actively participating in the learning experience and are learning from professors or industry professionals who are knowledgeable, skilled, have the right attitudes or frame of mind and use teaching strategies geared towards the Hospitality Management program.

However, it is important to recognize that regardless whether the teacher has an education background or is an industry professional, teaching strategies greatly help in sharing and transferring to the students the knowledge, skills and the right attitudes or frame of mind that they will use in their future careers. Higher Education Institutions that have exceptional hospitality management programs excelled in these aspects: curriculum, teaching and learning concepts. Those were greatly highlighted in the study of Horng et al. (2008) which coincides with Salazar et al (2017) who states that it is the teacher's knowledge, skills, attitude and teaching strategies that matter to students. The study did not focus on the environment as the schools that they included had similar facilities. It is interesting to point out that program resources were found least important. Which shows, that, it is not about the environment (school facilities) rather it is about the teachers who are knowledgeable and skilled, who have the right attitudes and frame of minds that utilize highly effective teaching strategies despite setbacks to teach the curriculum which in effect will help students create useful and meaningful knowledge and skills that are applicable not just in theory but is pertinent both professionally and in everyday living as well as adopt the correct attitudes and sense of professionalism that will be of benefit to them in the Hospitality Industry (Gisslen, 2018).

Luka, et al (2012) mentions that it is important to emphasize that in order for students to learn valuable knowledge, skills and attitudes, universities must constantly create new curricula and adapt the existing ones to reflect a more realistic view of the industry (Lee, et al 2009).

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The studies and literature in this research aim to reinforce the importance of knowledge, skills, attitudes and teaching strategies to the teachers, students, HEI's and SUC's. It is important to note that teachers should also be considered as stakeholders (Parvadhavardhini, 2017) since they are the facilitators of education and main sources of information of students. The curricula and the teachers that teach the curricula and the teaching strategies that they utilize should constantly evolve together with the students to remain globally relevant especially in the present political, social and economic climate.

The constant improvement or creation of teaching strategies to better fit students that are very varied and have different learning styles as well as the continuous professional development of instructors who are highly knowledgeable, skilled, have the right attitudes and who have an extensive knowledge of teaching strategies. This in turn will help higher education institutions (HEI) and State Universities and Colleges (SUC) and their faculty who offer Hospitality Management by maintaining a standard of excellence. HEI's and SUC's should also look into further professional development of faculty members whose contribution to the school and the students have become an integral and invaluable asset to the institution to which they belong.

### **III. CONCEPTUAL FRAMEWORK**

This research aimed to find out what are the pedagogical practices of Hospitality Management faculty members as assessed by their students. Specifically this study sought to answer the following Hypetheses:

How do the respondents assess the faculty pedagogical practices in terms of?

H1 Knowledge

H2 Skills

H3 Attitudes and

H4 Teaching Strategies

H5 is there a significant difference on the faculty exhibition of teachers' assessed pedagogical practices when the respondents are grouped into age and sex?

H6 Using a .05 level of significance, the researcher hypothesized that there is no significant difference on the faculty exhibition of teachers' assessed pedagogical practices when grouped according to the respondents' profile variables in terms of age and sex.

### **IV. METHODOS**

The researcher used the Descriptive Method. Therefore, the population of the 2 schools were used and computed the sample size determining the respondents for each school. It aims to describe the present conditions of the presented variables. This study focused on the pedagogical practices of Hospitality Management faculty members as assessed by the enrolled second year college students for the 2<sup>nd</sup> semester of S.Y. 2019-2020.

The researcher did not include other higher year levels, for using the old curriculum, 3rd year for not having any enrollees due to the adjustment made in the implementation of K to 12 curriculum and first year level for not yet being done with the current school year the research was conducted. The researcher determined the number of sample size from each school using simple random sampling. The researcher considered 2 schools in Metro Manila offering Hospitality Management. Therefore, the population of the 2 schools were used and computed the sample size determining the respondents for each school. From the total number of 2nd year students of these two (2) schools, the researcher computed the sample size with the use the Cochran's Formula in determining the number of sample size

Particularly, the study is limited only to the private universities in Metro Manila included among the list of Center of Excellence and Development according to CHED (2018) report of 2018 as well as Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA) Accreditation under the Hospitality Management program. These are Lyceum of the Philippines and the University of Santo Tomas (ust.edu.ph, 2022) (manila.lpu.edu.ph, 2022).

The instrument used is a researcher-made survey questionnaire composed of three parts. Part 1 solicited respondents' profile as to age, Part 2 is sex and Part 3 is the respondents' perceived assessment on the pedagogical practices in terms of Knowledge, Skills, Attitudes and Teaching Strategies (KSATs) following the CMO # 62, series of 2017, Policy and standards and program outcomes intended for the graduates of Hospitality Management answerable by the level of agreement with 5 as Strongly Agree, 4 as Agree, 3 as Neither Agree nor Disagree, 2 as Disagree and 1 as Strongly Disagree.

The content of the said instruments was validated by experts in their fields; practitioners and academicians. Furthermore, the reliability of the instruments was obtained through by using Cronbach's Reliability Coefficient of 0.95 which is interpreted as excellent and the average inter-item correlations are almost the same or close to each other. This signifies that the items in the survey questionnaire are dependable, reliable and can provide consistent information.

The Mann Whitney U Test was used to compare two independent samples utilizing nonparametric distributions. The null hypothesis for the test is that the probability is 50% that a randomly drawn member of the first population will exceed a member

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of the second population. The test determines whether the medians of two groups namely Lyceum and UST are different. Furthermore the perception of the students in terms of the variables (knowledge, skills, attitudes and teaching strategies) will be tested for any significant difference.

### V. RESULTS AND DISCUSSION

**Table 1.** Distribution of the Respondents in the Sample

Schools	Population	Proportional Sample Size Based on Schools
UST	217	100
Lyceum	250	116
<b>Total</b>	<b>467</b>	<b>216</b>

The table above shows that the population of UST is 217 2<sup>nd</sup> yr. BSHM students and Lyceum with 250 2<sup>nd</sup> yr. BSHM students S.Y. 2020 with a total of 467 respondents.

**Table 2. Profile of the respondents in terms of Age**

Age Bracket	Frequency	Percentage
17 -19	100	46.30
20 - above	116	53.70
<b>Total</b>	<b>216</b>	<b>100.00</b>

It is evident from the table that on average, the respondents are about 20 and above years of age with 53.7%. Considering the quartile value, nearly 46 percent is below 20 years of age. To be more specific, a large number of respondents is 20 years of age in the sample.

Some interesting feature of the sample respondents is being the first batch to graduate the Senior High School Program since its implementation in the Philippines. Hence, their age is older than the usual Second Year college students in the previous years.

**Table 3.** Profile of the respondents in terms of Sex

Gender	Frequency	Percentage
Male	62	28.70
Female	154	71.30
<b>Total</b>	<b>216</b>	<b>100.00</b>

It is quite clear that out of the total respondents investigated for this study, an overwhelming majority 71.30% of them were female whereas about 28.70% percent were male. This is an indication that the program Hospitality Management is still among the choice program for females in the country.

**Table 4** Perception of the Respondents in terms of Exhibition of Knowledge of Faculty Members

KNOWLEDGE			
Items	Mean	Verbal Interpretation	
Knowledgeable in ingredients its alternatives and sanitation practices regarding food handling	4.52	Strongly Agree	
Knowledgeable in management skills and food and beverage operations	4.51	Strongly Agree	
Knowledgeable in full guest cycle services for front office	4.56	Strongly Agree	
Knowledgeable in housekeeping and facility operations	4.55	Strongly Agree	
Knowledgeable in risk management	4.52	Strongly Agree	
Knowledgeable in food and beverage industry standards	4.55	Strongly Agree	
<b>Overall Mean</b>	<b>4.54</b>	<b>Strongly Agree</b>	

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It could be seen from the table on the previous page that all the recorded weighted means range from (4.51) to (4.56). Thus, the respondents show strong agreement as to the faculty members in the exhibition of knowledge particularly in full guest cycle services for front office (4.56), housekeeping and facility operations and food and beverages standards (4.55) respectively, identification of ingredients its alternatives and sanitation practices regarding food handling and risk management with (4.52), respectively and management skills and food and beverage operations (4.51). This is an indication that the right knowledge of the program Hospitality Management is clearly evident from the faculty members teaching in the universities used in this study.

These results support that students respond better to teachers who are knowledgeable in various fields that are current and relevant pertaining to the Hospitality Industry (CMO no.62, Series of 2017) (Schoffstall, 2013)

**Table 5** Perception of the Respondents in terms of Exhibition of Skills of Faculty Members

SKILLS		
Items	Mean	Verbal Interpretation
Demonstrate execution of complicated dishes	4.35	Agree
Demonstrate skills in food and beverage services and operations	4.50	Agree
Demonstrate guest cycle services for front office	4.41	Agree
Perform housekeeping and facility Operations	4.46	Agree
Demonstrate risk management application	4.36	Agree
Demonstrate seamless food and beverage industry standards operations	4.41	Agree
<b>Overall Mean</b>	<b>4.42</b>	<b>Agree</b>

Based on the table, all the recorded weighted means range from (4.35) to (4.50). Thus, respondents show agreement as to the faculty members exhibition of skills particularly in food and beverage services and operations (4.50), Perform housekeeping and facility Operations (4.46), Demonstrate guest cycle services for front office (4.41), Demonstrate seamless food and beverage industry standards operations (4.41), Demonstrate seamless food and beverage industry standards operations (4.41), Demonstrate risk management application (4.36) and Demonstrate execution of complicated dishes (4.35).

This is an indication that the right skills of the program Hospitality Management is clearly evident from the faculty members teaching in the universities used in this study.

These results support the results that students respond better to teachers who exhibit advanced skills and possess extensive skills expertise in multiple fields that are relevant and current pertaining to the Hospitality industry.

**Table 6** Perception of the Respondents in terms of Exhibition of Attitudes of Faculty Members

ATTITUDES		
Items	Mean	Verbal Interpretation
Displays adaptive mindset	4.47	Agree
Able to adapt to the demands and supply of ingredients and kitchen environment	4.41	Agree
Able to manage food and beverage operations seamlessly despite setbacks	4.41	Agree
Able to quickly address guests needs, wants and complaints	4.38	Agree
Able to maintain the facilities in peak condition despite setbacks	4.27	Agree
Quickly assess situations and act accordingly	4.37	Agree
Able to perform food and beverage operations seamlessly despite setbacks	4.44	Agree
<b>Overall Mean</b>	<b>4.39</b>	<b>Agree</b>

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Based on the table, all the recorded weighted means range from (4.27) to (4.47). Thus, respondents show agreement as to the faculty members exhibition of attitudes particularly displays adaptive mindset (4.47), Able to perform food and beverage operations seamlessly despite setbacks (4.44), Able to manage food and beverage operations seamlessly despite setbacks (4.41), Able to adapt to the demands and supply of ingredients and kitchen environment (4.41), Able to quickly address guests needs, wants and complaints (4.38), Quickly assess situations and act accordingly (4.37) and Able to maintain the facilities in peak condition despite setbacks (4.27).

This is an indication that the right attitudes of the program Hospitality Management is clearly evident from the faculty members teaching in the universities used in this study.

These results support that students respond better to teachers who exhibit attitudes that are relevant and current to the Hospitality industry (Bilbao, et al, 2015) (Gisslen, 2018) (Schoffstall, 2013) (Schoffstall et al, 2013) (Swanger, Min, Gursoy, 2016).

**Table 7** Perception of the Respondents in terms of Exhibition of Teaching Strategies of Faculty Members

TEACHING STRATEGIES		
Items	Mean	Verbal Interpretation
Lecture / Tutorial	4.44	Agree
Demonstration	4.48	Agree
Facilitates return demonstration (students actual lab work)	4.50	Agree
Simulation Games	4.15	Agree
Group presentations	4.40	Agree
Role Playing	4.22	Agree
Field Visit	4.16	Agree
Exercises	4.32	Agree
Case Study	4.25	Agree
<b>Overall Mean</b>	<b>4.32</b>	<b>Agree</b>

Based on the table, all the recorded weighted means range from (4.50) to (4.15). Thus, respondents show agreement as to the faculty members exhibition of teaching strategies particularly Facilitates return demonstration (students actual lab work) (4.50), Demonstration (4.48), Lecture / Tutorial (4.44), Group presentations (4.40), Exercises (4.32), Case Study (4.25), Role Playing (4.22), Field Visit (4.16), Simulation Games (4.15).

This is an indication that the right teaching strategies of the program Hospitality Management is clearly evident from the faculty members teaching in the universities used in this study.

These results support the results that students respond better to teachers who utilise multiple teaching strategies that are relevant and current to the Hospitality industry (Gardner, 2011) (Donina, 2012) (Huang, 2015), (Luka, (Parvadhavardhini, Joshi, 2017)

**Table 8** Hypothesis Testing for the Significant Difference on the Faculty Members' Exhibition of Knowledge, Skills, Attitudes and Teaching Strategies When as Perceived by the Respondents Grouped According to Age

Faculty Exhibition	Group	Rank Sum	p-value	Decision	Remarks
Knowledge	17-19	9780.5	0.0164	Reject H <sub>0</sub>	Significant
	20-	13655.5			
	Above				
Skills	17-19	10276.5	0.2036	Accept H <sub>0</sub>	Not Significant
	20-	13159.5			
	Above				
Attitudes	17-19	10819	0.9452	Accept H <sub>0</sub>	Not Significant
	20-	12617			
	Above				
Teaching Strategies	17-19	10246.5	0.1838	Accept H <sub>0</sub>	Not Significant
	20-	13189.5			
	Above				

Note: Level of significance = 0.05

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It could be seen that when perceived according to age, in terms of exhibition of knowledge which has a p-value of 0.0164, the null hypothesis is rejected which may be interpreted that there is a difference between the perception between those ages 17-19 and those who are ages 20 and above.

Conversely, Skills which has p-value of 0.2036, Attitudes with a p-value of 0.9452 and Teaching Strategies with a p-value of 0.1838, all three failed to reject the null hypothesis and is therefore not significant as perceived by the respondents when grouped according to age.

**Table 9 Hypothesis Testing for the Significant Difference on the Faculty Members' Exhibition of Knowledge, Skills, Attitudes and Teaching Strategies when as Perceived by the Respondents Grouped According to Sex**

Faculty Exhibition	Group	Rank Sum	p-value	Decision	Remarks
Knowledge	Male	7039	0.4404	Accept	Not Significant
	Female	16397		$H_0$	
Skills	Male	6650.5	0.8517	Accept	Not Significant
	Female	16785.5		$H_0$	
Attitudes	Male	6753.5	0.9483	Accept	Not Significant
	Female	16682.5		$H_0$	
Teaching Strategies	Male	6884.5	0.7022	Accept	Not Significant
	Female	16551.5		$H_0$	

Note: Level of significance = 0.05

It could be seen that the exhibition as perceived by the respondents when grouped according to sex, knowledge with a p-value of 0.4404, skills with a p-value of 0.8517, attitudes with a p-value of 0.9483 and teaching strategies with a p-value of 0.7022, thus, the null hypothesis is yields Not Significant and is therefore accepted. So, there is no significant difference between the perceptions of respondents in terms of sex, on the exhibition of knowledge, skills, attitudes and teaching strategies of the faculty members. It may be concluded that both universities' faculty members' line-up are equally competitive in terms of academic and professional qualifications.

## CONCLUSION AND RECOMMENDATION

1. Majority of the respondents' age were 20 years old and above, also it was found that most are female respondents.
2. The respondents show strong agreement that the faculty members are knowledgeable in their fields of expertise. Also, the respondents agree that the faculty members demonstrate execution of complicated skills, demonstrate attitudes that are important in the hospitality industry and teaching strategies are varied.
3. The difference between the perception of the respondents ages 17-19 and 20-Above regarding the exhibition of knowledge is quite significant. It shows that the respondents who were older perceived their professors to be very knowledgeable in their fields of expertise than that of those who are ages 17-19.

However, there were no significant difference in the exhibition of skills, attitudes and teaching strategies

With regards to the exhibition of knowledge, skills, attitudes and teaching strategies as perceived by the respondents when grouped according to sex, all four fail to reject the null hypothesis. This signifies that there is no significant difference on the exhibition of knowledge, skills, attitudes and teaching strategies based on the perceptions of the respondents when grouped into sex. It may be concluded that the faculty members' line-ups are equally competitive in terms of academic and professional qualifications. This study shows that there is a huge impact on the students' perception of the knowledge, skills, attitudes and teaching strategies that the faculty members exhibit. The universities can use this as a guide to further the professional development of their faculty members that may therefore help improve the school's standing as well as helping the faculty members acquire relevant academic and professional development. In doing so a symbiotic relationship between the students and the university is formed where the development of outstanding faculty members also produce outstanding graduates and in return academic integrity for the universities.

## RECOMMENDATIONS

Based on the results of this research, the following recommendations are formulated:

1. Excellent faculty members help universities produce globally competitive Filipino Hospitality Management graduates that set themselves apart from those who are merely experienced as well as establish a path towards supervisory or management positions in the hospitality industry locally and abroad. It is recommended that the HM teachers receive trainings and seminars in tourism and hospitality that are current and relevant to the Hospitality Management program to better impart and enhance

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relevant knowledge, skills and attitudes specific to the HM program. In doing so, this may increase chances of HM graduates being hired in high level positions in a very competitive industry.

One way is for HEI's and SUC's to collaborate through partnerships and or sponsorships with industry institutions and professionals from the tourism and hospitality sector to find out what are the current trainings and certifications that are required locally and globally that are specific to the hospitality management program. This may consequently help the universities produce outstanding faculty members who are knowledgeable and skilled with hospitality industry standards, which will be highly beneficial to the tourism and hospitality sector. The help of these institutions and professionals partnering with these universities may produce Filipino HM graduates that already have the knowledge, skills and attitudes needed to thrive in this industry and in effect, said institutions may apply finances used on time and resources that are usually used for training to other sectors of their business more effectively. This in turn will benefit higher education institutions and state universities and colleges gain globally competitive industry credibility.

2. Another recommendation is for HEI's and SUC's to collaborate through partnerships or through sponsorships with innovative educators and learning designers to find out what are current trainings and certifications concerning current pedagogy specifically tailored for the Hospitality Management program that are based on global standards. Such trainings, workshops and seminars relating the gap between cognitive and psychomotor skills may consequently help the universities produce outstanding faculty members who are knowledgeable and skilled in both hospitality industry standards and pedagogy. This in turn will help them impart their knowledge, skills and attitudes specific to the hospitality management program more effectively and efficiently. It is through this recommendation that HEI's and SUC's collaborate with their HM teachers to continuously improve the curriculum for the hospitality management program to be more inclusive of different learning styles and incorporate more teaching strategies that will be beneficial to HM students. Such trainings, workshops and seminars relating the gap between cognitive and psychomotor skills may help HEI's and SUC's gain academic credibility especially from tourism and hospitality Institutions that these academic institutions produce globally competitive HM graduates. This may very well create a symbiotic relationship between the students, universities and tourism and hospitality institutions where the development of outstanding faculty members also produce outstanding graduates and in return academic integrity for the universities.

3. Finally the researcher proposes a development program for non-education hospitality management faculty members.

Professional development aid teachers by being current and relevant to their students through up-to-date teaching trends as well as improving upon their skills. Administrators also use this as one of the varied methods to ensure their faculty members strengthen, excel and enhance their expertise, ensure tenure and progress in their fields of expertise. Which creates a pool of excellent faculty members for the HEI's and SUC's. This also gives leverage to teachers who are vying for promotion and increase in salary grade.

Quality professional development resources will help faculty members understand what works best for them and allows them to improve and enhance their classroom practice resulting in excellent output in terms of graduates that are globally competitive.

Industry Practitioners may teach part-time in the HM program provided if they possess at least a bachelor's degree in Tourism, HM/HRM or allied programs and at least three (3) relevant work experiences. All non-education faculty members must teach courses only within their field of specialization. HEI's and SUC's today encourage their faculty to have multiple discipline backgrounds so that HM subjects are viewed from multiple perspectives (CMO no.62, Series of 2017), ([www.pup.edu.ph/cthtm/bshh](http://www.pup.edu.ph/cthtm/bshh), 2022)

However, non-education HM teachers face an ever-existing challenge of how to open dialogue with teaching tourism and hospitality management subjects with their students. They lack applied and theoretical knowledge of varied teaching strategies and its utilization and application. It is made more difficult with the engagement of students with different backgrounds, races and learning styles.

It is for these reasons that the researcher proposes a pedagogical development plan for non-education HM faculty members. The idea is that non-education HM faculty members will be required to take the Post Bacalaureate in Teacher Education (PBTE) ([www.pup.edu.ph/coed/pbte](http://www.pup.edu.ph/coed/pbte), 2022) from schools such as the Polytechnic University of the Philippines, College of Education and other universities that offer such courses. This is to ascertain that the HM teachers can learn, utilize, enhance, and tailor effective teaching strategies specifically geared towards HM learners. In doing so, deliver and share their knowledge, skills, and attitudes pertinent to the hospitality industry in the manner that the students understand and appreciate.

## REFERENCES

- 1) Academics -. (2022, August 12). <https://www.ust.edu.ph/academics/>
- 2) ATTITUDE definition in the Cambridge English Dictionary. (n.d.). Retrieved from <https://dictionary.cambridge.org/us/dictionary/english/attitude>



## Pedagogical Practices of Hospitality Management Faculty Members

- 3) Armstrong, Thomas (2018). *Multiple Intelligences in the Classroom* 4th ed. Alexandria, VA: Association for Supervision and Curriculum Development.
- 4) Awards and accreditations. (2022, June 3). Lyceum of the Philippines University Manila. <https://manila.lpu.edu.ph/about-us/awards-and-accreditations/>
- 5) Bachelor of Science in Hotel and Restaurant Management (4 years). (n.d.). Retrieved from <http://www.ust.edu.ph/academics/programs/bachelor-of-science-in-hotel-and-restaurantmanagement>
- 6) Besar, Dk Siti Norainna Pg Hj (2018). *Situated Learning Theory: The Key to Effective Classroom Teaching?*
- 7) Bhinder, H. (2019) *Teaching Techniques Adopted by Hospitality Faculty Members in the Classrooms*. *International Journal of Management Studies* ISSN(Print) 2249 0302 ISSN (Online)2231-2528  
[http://www.researchersworld.com/ijms/,DOI:10.18843/ijms/v6i1\(3\)/07](http://www.researchersworld.com/ijms/,DOI:10.18843/ijms/v6i1(3)/07)  
URL:[http://dx.doi.org/10.18843/ijms/v6i1\(3\)/07](http://dx.doi.org/10.18843/ijms/v6i1(3)/07)
- 8) Bilbao, P. P., Corpuz, B. B., Llagas, A. T., & Salandanan, G. G. (2015). *The Teaching Profession*.
- 9) Brennen, P. G. (2017) - *Experiential Learning in Hospitality Management Education*, Northeastern University, Boston, Massachusetts
- 10) Casado, M. A., & Dereshiwsky, M. I. (2007). *Cultural diversity in higher education: Implications for hospitality programs*. *Education*, 128(2), 294–306.
- 11) Cecil, A. (2012). *A framework for service learning in hospitality and tourism management education*. *Journal of Teaching in Travel & Tourism*, 12(4), 313–331.
- 12) Cervera-Taulet, A., & Ruiz-Molina, M. E. (2008). *Tourism education: a strategic analysis model*. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 7(2), 59–70.
- 13) Chiou, W.B.(2008).*College students’ rolemodels, learning style preferences, and academic achievement in collaborative teaching: Absolute versus relativistic thinking*. *Adolescence*, 43, 129–140.
- 14) Cigara, I. (2019) *Tourism’s Contribution to Philippine economy grows in 2018*. philstar.com.  
<https://www.philstar.com/business/2019/06/07/1924474/tourisms-contribution-philippineconomy-grows-2018>
- 15) Clancey, W. J. (1995). *A tutorial on situated learning*.  
[http://methodenpool.uni-koeln.de/situierteslernen/clancey\\_situated\\_learning.PDF](http://methodenpool.uni-koeln.de/situierteslernen/clancey_situated_learning.PDF)
- 16) CMO no.62, Series of 2017, SUBJECT: Policies, standards and guidelines for Bachelor of Science in Tourism Management (BSTM) and Bachelor of Science in Hospitality Mangement (BSHM) <https://ched.gov.ph/wp-content/uploads/2018/03/CMO-62-BS-Hospitality-TourismManagement.pdf>
- 17) Awards. (2021, September 11). Lyceum of the Philippines University.  
<https://www.lpu.edu.ph/index.php/awards>
- 18) Daniela Wei & Shelly Banjo (April 25, 2019, 4:00 AM GMT+8) *The Future of Shopping Is Already Happening in China*, Bloomberg. (n.d.). Retrieved from <https://www.bloomberg.com/news/articles/2019-04-24/china-s-gen-z-skips-the-stores-and-shopson-social-media?srnd=gen-z>
- 19) Deale, Cynthia Ph.D., O'Halloran, Robert Ph.D., Jacques, Paul Ph.D. and Garger, John MBA (2013) *An Examination of Current Hospitality and Tourism Teaching Methods*
- 20) Deale, C., O'Halloran, R., Jacques, P., Garger, J. (2013) *An Examination of Current Hospitality and Tourism Teaching Methods*. *Journal of Hospitality & Tourism Education* 22(2):20-29 • May 2013
- 21) Department of hospitality management. (n.d.). University of Santo Tomas.<https://www.ust.edu.ph/tourism-and-hospitality-management/department-of-hospitalitymanagement/>
- 22) Dredge, D. (2012). *Key issues in tourism, hospitality and events curriculum design and development*. paper project, Southern Cross University, Queensland. doi:<http://tourismhospitalityeducation.info/>
- 23) Driscoll, M. P. (1994). *Psychology of learning for instruction*. Boston: Allyn and Bacon.
- 24) Fox, R. (2001). *Constructivism examined*. *Oxford Review of Education*, 27(1), 23-35. Lunenberg, F. C. (1998). *Constructivism and technology: Instructional designs for*. *Journal of instructional psychology*,25(2), 75.
- 25) Fullagar, S., Wilson, E. (2012) *Critical Pedagogies: A Reflexive Approach to Knowledge Creation in Tourism and Hospitality Studies*. *Journal of Hospitality and Tourism Management*, 19, page 1 of 6, e2
- 26) Garcia, C., Hertzman, J., Mandabach, K. (2020) *An Assessment of Beverage Management Programs in U.S. Hospitality Schools*. School of Hotel, Restaurant and Tourism, Management New Mexico State University, USA
- 27) Gardner, H. (2011). *Frames of Mind: The Theory of Multiple Intelligences*. London,England: Hachette UK.
- 28) Gisslen, W. (2016). *Professional Baking*, 7th Edition. Hoboken, NJ: Wiley Global Education
- 29) Gisslen, W. (2018). *Professional Cooking*, 9th Edition. Hoboken, NJ: Wiley Global Education.

## Pedagogical Practices of Hospitality Management Faculty Members

- 30) Harvey, L. (2001). Student feedback: a report to the higher education funding council for England. London: HEFCE.
- 31) Hotel, Restaurant and Institution Management Hospitality Management. (n.d.). Retrieved from <https://www.benilde.edu.ph/courses/tracks/abm/hrim.html>
- 32) Horng, J., Teng, C., & Baum, T. (2008). Evaluating the quality of undergraduate hospitality tourism and leisure programs. *Journal of Hospitality, Leisure, Sports & Tourism Education*, 8, 37-54. doi:10.3794/johlst.81.200
- 33) Huang, R. (2015). Industry engagement with tourism and hospitality education: An examination of students' perspective. In D. Dredge, D. Airey, & M. J. Gross (Eds.). *The Routledge handbook of tourism and hospitality education* (pp. 408–421). New York: Routledge.
- 34) Hotel, Restaurant and Institution Management Hospitality Management. (n.d.). Retrieved from <https://www.benilde.edu.ph/courses/tracks/abm/hrim.html>
- 35) Irungu, J. N. (2010). The relationship between Engagement and perceived academic, personal, and social Outcomes for senior international undergraduate Students in research universities (doctoral dissertation). Retrieved from [https://kuscholarworks.ku.edu/bitstream/handle/1808/6157/IRUNGU\\_ku\\_0099D\\_10710\\_DATA\\_1.pdf;sequence=1](https://kuscholarworks.ku.edu/bitstream/handle/1808/6157/IRUNGU_ku_0099D_10710_DATA_1.pdf;sequence=1).
- 36) Jacobsen, M. (2011). A case study of a blended doctoral program in educational technology. In A. Kitchenham (Ed.), *Blended learning across disciplines: Models for implementation* (pp. 173–189). Hershey, PA: IGI Global.
- 37) Johanson, M., Ghiselli, R., Shea, L. J., & Roberts, C. (2010). Revealing Key Competencies of Hospitality Graduates Demanded by Industry: A 25-year review. International CHRIE Conference Refereed Track. Amherst: Hospitality Tourism Management at ScholarWorks@UMass Amherst. doi:ScholarWorks@UMass Amherst
- 38) KNOWLEDGE | definition in the Cambridge English Dictionary. (n.d.). Retrieved from <https://dictionary.cambridge.org/us/dictionary/english/knowledge>
- 39) Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- 40) Ko, Wen-Hwa (2012). A study of the relationships among effective learning, professional competence, and learning performance in culinary field *Journal of Hospitality, Leisure, Sport & Tourism Education* 11(2012)12–20
- 41) Lee, M., Kang, H., Choi, H., Lee, J., Olds, D. Students' perceptions of hospitality education quality in the United States higher education: Domestic versus international students. (2019) *Journal of Hospitality, Leisure, Sport & Tourism Education* 25 (2019) 100212
- 42) Lee, K. M., Lee, M. J., & Kim, H. J. (2009). A comparison of student and industry perceptions of the event management curriculum in Korea. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 8(2), 60–73.
- 43) Lifting the quality of teaching and learning in higher education. (2011). Business Council of Australia. <https://www.bca.com.au/lifting-the-quality-of-teaching-and-learning-in-highereducation>
- 44) Liasidou, S. (2016). Learning and Teaching in Hotel Management Studies: Defining the Students' Experience. *International Journal of Humanities and Social Science*, Vol. 6(11), pp 118-128.
- 45) List of Centers Of Excellence And Development, CHED (2018) <https://ched.gov.ph/wpcontent/uploads/2018/07/List-of-Centers-of-Excellence-and-Development.pdf>
- 46) Luka, Ineta & Donina, Agita (2012) Challenges of tourism education: Conformity of tourism curriculum to business needs. *Academica Turistica*, Year 5, No. 1, June 2012, p.85-p.101
- 47) Mann Whitney U Test. (2019, August 26). Retrieved from <https://www.statisticshowto.datasciencecentral.com/mann-whitney-u-test/>
- 48) Mann-Whitney U Test. Retrieved from <https://www.ucl.ac.uk/child-health/short-courses/events/about-statistical-courses/research-methods-and-statistics/chapter-8-content-1>
- 49) McLeod, S. A. (2013). Kolb - learning styles. Retrieved from [www.simplypsychology.org/learning-kolb.html](http://www.simplypsychology.org/learning-kolb.html)
- 50) Median: Definition, How to Find it, Formula. (2018, March 18). Retrieved from <https://www.statisticshowto.datasciencecentral.com/probability-and-statistics/statisticsdefinitions/median-formula/>
- 51) Morrison A., O'Gorman, K. (2008) Hospitality studies and hospitality management: A symbiotic relationship, *International Journal of Hospitality Management* 27 214–221
- 52) Multiple Intelligences. (n.d.). Retrieved from <http://www.institute4learning.com/resources/articles/multiple-intelligences/>
- 53) Northwest Missouri State University. (n.d.). Teaching Strategies. Retrieved from <https://www.nwmissouri.edu/education/>
- 54) Oregon Technology in Education Council (OTEC) (2007). *Situated Learning (From: Theories and Transfer of Learning)*. [http://otec.uoregon.edu/learning\\_theory.htm#SituatedLearning](http://otec.uoregon.edu/learning_theory.htm#SituatedLearning)

## Pedagogical Practices of Hospitality Management Faculty Members

- 55) Orlich, D. C., Harder, R. J., Callahan, R. C., Trevisan, M. S., & Brown, A. H. (2010). *Teaching Strategies: A Guide to Effective Instruction*. Boston, MA: Cengage Learning.
- 56) Parvadhavardhini, G., Joshi, H. (2017) Faculty perspectives of undergraduate hospitality management curriculum course subject importance. *International Research Journal of Management Sociology & Humanity ( IRJMSH) Vol 8 Issue 8 [Year 2017] ISSN 2277 – 9809 (Online) 2348– 9359 (Print)*
- 57) Prensky, M. (2011). *Digital Natives, Digital Immigrants* By Marc Prensky, *From On the Horizon (NCB University Press, Vol. 9 No. 5, October 2001) © 2001 Marc Prensky*
- 58) Pedagogy | Methods, Theories, & Facts. (n.d.). Retrieved from <https://www.britannica.com/science/pedagogy>
- 59) Powell, K. C. & Kalina, C. J. (2009). Cognitive and social constructivism: Developing tools for an effective classroom. *Education, 130(2), 241-250.*
- 60) PUP. (2022). Polytechnic University of the Philippines. Polytechnic University of the Philippines. <https://www.pup.edu.ph/cthtm/bshh>
- 61) PUP. (2022). Polytechnic University of the Philippines. Polytechnic University of the Philippines. <https://www.pup.edu.ph/coed/pbte>
- 62) Reiser, R. A., & Dempsey, J. V. (2012). *Trends and issues in instructional design and technology (3rd ed.)*. Boston, MA: Pearson Education, Inc.
- 63) Schoffstall, D. G. (2013). The benefits and challenges hospitality management students experience by working in conjunction with completing their studies. Iowa State University, Hospitality Management, Ames Retrieved July 21, 2016, from <http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=4036&context=etd>
- 64) Schoffstall ,D.G., Arendt, S.W. & Brown, E.A., (7-2013) Academic Engagement of Hospitality Students *Journal of Hospitality, Leisure, Sport & Tourism Education 13 (2013): 141, doi:10.1016/j.jhlste.2013.09.004.*
- 65) SKILL | definition in the Cambridge English Dictionary. (n.d.). Retrieved from <https://dictionary.cambridge.org/us/dictionary/english/skill?q=skills>
- 66) Stavenga, J. A. d. J., Wierstra, R. F. A., & Hermanussen, J. (2006). An exploration of the relationship between academic and experiential learning approaches in vocational education. *British Journal of Educational Psychology, 76, 155-169.*
- 67) Stein, D. (1998). Situated learning in adult education. <http://www.ericdigests.org/1998-3/adulteducation.html>
- 68) Swanger, N., Min, H., & Gursoy, D. (2016). A longitudinal investigation of the importance of course subjects in the hospitality curriculum: An industry perspective. *Journal of Hospitality & Tourism Education, 28(1), 10-20.*
- 69) Universitips. (n.d.). Retrieved from <https://www.facebook.com/UniversitipsPh/posts/-due-topopular-demand-2018-top-hrm-tourism-and-hospitality-schools-in-metroman/655013478192412/>
- 70) User,S.(n.d.).International Tourism and Hospitality Management. Retrieved from <https://manila.lpu.edu.ph/index.php/academics/international-tourism-and-hospitality-management>
- 71) Wen-Hwa Ko (2012) . A study of the relationships among effective learning, professional competence, and learning performance in culinary field *Journal of Hospitality, Leisure, Sport & Tourism Education11(2012)12–20*
- 72) Wong, S., Pang, L. Wong, N. (2012). Reflections on Pedagogical Use of Blended Learning in Hospitality Education: A Case Study of Teaching Human Resources Management *Journal of Teaching in Travel & Tourism, 13:251–281, 2013*
- 73) Writing intended learning outcomes | Poorvu Center for teaching and learning. (n.d.). Poorvu Center for Teaching and Learning |. <https://poorvucenter.yale.edu/IntendedLearningOutcomes>



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## The Experiential Marketing, Experience Engagement, Reference Group, and Customer Satisfaction Toward Purchase Intention of Virtual Hotel Operators (VHO): Indonesian Context



Erta<sup>1</sup>, Ika Diyah Candra Arifah<sup>2</sup>, Zainur Rahman<sup>3</sup>, Hapsari Cinta<sup>4</sup>

<sup>1,2,3,4</sup>Universitas Negeri Surabaya

**ABSTRACT:** Budget traveling has developed to become a potential niche market in the hospitality industry as an increasing number of backpackers and domestic tourists with limited disposable income. This niche market has grown to become a multi-billion dollar market globally as its ability to develop the economy through more job opportunity, enforce small accommodation service with low overhead-cost and shift local product increase of destination country such as Virtual Hotel Operators (VHO). This business model provides rented accommodation in which services are accessible on the official website and mobile application. As a marketplace, it enables guest and hotel operators to meet, deal, and finalize accommodation booking transactions online. This study analyzes the influence of experiential marketing, experience engagement, reference group and customer satisfaction on repurchase intention of VHO consumers. The result shows a positive relationship between experiential marketing, experience engagement, VHO consumer reference groups, customer satisfaction, and purchase intention. These results support previous research investigating a so-called "experience profile," which consumer summarize and evaluate memory experiences by combining their sequential experiences received by their senses which provided by company's experiential marketing channels.

**KEYWORDS:** experiential marketing, experience engagement, reference group, customer satisfaction, purchase intention, Virtual Hotel Operator

### INTRODUCTION

Indonesia is one of the largest tourism industry in the world. In 2019, this country attracted 1.16 million visitors worldwide that grew about 5.22 % compared to the previous year. This growth is almost double the global average of about 3.9%, and beyond the Indonesian economy, which grew 5.1 %/year (WTTC, 2019). This great economy sector has contributed about USD 62.2 billion, created 13 million more jobs, and contributed about 6% to Indonesian Gross Domestic Product. Visa reformation and deregulation of tourism business are considered as the influential factors to this growth. This posits Indonesia as the third-largest tourism country behind Thailand and the Philippines in South East Asia.

Furthermore, budget traveling has developed to become a potential niche market in the hospitality industry as an increasing number of backpackers and domestic tourists with limited disposable income (Samy, 2016). This niche market has grown to become a multi-billion dollar market globally as its ability to develop the economy through more job opportunity, enforce small accommodation service with low overhead-cost and shift local product increase of destination country (Scheyvens, 2002). Low-budget travelers usually only need a clean room, sheets, and basic amenities in their selected accommodation (Wiastuti et al., 2016).

Following the emergence of the internet in the 1990s that change how products and services are distributed across the world (Berne et al., 2012), a revolutionary business model has taken attention from the temporary accommodation industry. This business model and platform are called Virtual Hotel Operators. The Virtual Hotel Operators (VHO) is an online platform that listing accommodation where guests could select and book accommodations. It is a business model that provides rented accommodation in which services are accessible on the official website and mobile application. As a marketplace, it enables guest and hotel operators to meet, deal, and finalize accommodation booking transactions online (Brown & Lu, 2016).

Recognized as a disruption in the hospitality industry, the VHO concept was brought by Airbnb about 10 years ago and has become a mainstream service and business model now (Choudary, 2014). Nowadays, many international and local VHO has flooded the Indonesian market with various services such as Airy Rooms (Indonesia), RedDoorz (India), Zen Rooms (Korea), OYO

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(India), Tinggal (Singapore), and Nida Rooms (Indonesia). Each of these VHOs has operated and cooperated with hundreds of hotel operators in the Southeast Asia region. This business concept basically does not have a hotel and chooses a hotel, guesthouse, apartment, or hostel operator that has a minimum of 50 rooms, has a clean hotel room, mid and economy segment (with prices per night starting at USD 150), and a strategic location and then rebranding the hotel with the brand VHO. Furthermore, VHO also conducted an unplanned audit to maintain quality standards and inspect the room and hotel facilities based on service guarantee value before rebranding it. The revenue model does not include a fee but a mark-up of the net price that the hotel offers to VHO. It shows that VHO aims to make affordable hotel services, bring the best economy hotel, audit the hotel, develop facilities, and implement monthly quality control for the hotel.

Furthermore, VHO offers more options to access hotel information from the consumer perspective, including booking process, facilities, payment, location benefit through VHO's website and mobile application. The consumer also could find a glimpse of information or promotional event through VHO's social media. The ease of doing windows shopping and accessing reliable information from various accommodation options on the website and mobile apps from VHO is one of the different experiences offered by VHO compared to conventional hotels, which seem quite late in responding to these needs and trends (Margarido, 2015). This new experience can be categorized as an outcome of experiential marketing implemented by VHO. Usually, experiential marketing appears as a supporter of value-based pricing so that the average accommodation business is applied to the mid and high segment. However, referring to the understanding that experiential marketing is part of the experience economy has the aim of "creating a new valuable experience" related to the type of product, service, and the process of choosing the product and service, making it also needed by attracting low and mid economy segments (Pine & Gilmore, 2003; Guo et al., 2013). This is because the experiential economy and experiential marketing not only emerge as an alternative to the low-price oriented economy but can also be seen as a large investment of a low-budget accommodation business to increase its competitive advantage because price war in mid and low rates is felt it is no longer relevant in winning the competition (Guo et al., 2013).

Another fact supporting this statement is that VHO maintains its business sustainability and competitiveness with fellow VHOs and conventional hotels by developing products that target the low, mid, and premium segments (Guo et al., 2013). For example, VHO and conventional hotels are now scrambling to get strategic locations in various parts of the country that have not been touched before but have new tourism potential (Reference). Furthermore, sense marketing is part of experiential marketing that was recently developed due to the increasing needs of consumers for products or services that can provide more pleasure and excitement that they can feel through their five senses (Hultén et al., 2015).

The marketing experts discuss the influence of multisensory processing on consumer perception and consumer behavior such as the inter-sensory impact and synergy of taste and sight (Hoegg & Alba, 2007); touch and sight (Raghubir & Krishna, 1999), taste and sound (Zampini & Spence, 2004; Krishna & Morrin, 2008). The consideration of examining customer experience is based on some consumer segmentation based on psychographic approaches such as experience-seeker and consumer nature as rational and emotional people who strive for the best experience. There is the categorization of experience based on Schmitt (2010) such as "*strategic experiential modules (SEM): sensory experience (SENSE); affective experience (FEEL); creative cognitive experience (THINK); physical experience, behavior, and lifestyle (ACT); and experiences of social identity that result from being related to reference groups or culture (RELATED)*". The consumer experience is manifested by communication, electronic media sharing, visual and verbal identity, product presence, etc.

The creation of experiential marketing and marketing sense positively influences customer satisfaction and purchase intention (Walsh et al., 2001; Anggie & Haryanto, 2011; Khan & Rahman, 2015; Garcia et al., 2018). This is supported by several previous studies from Razi & Lajevardi (2016), which revealed experiential marketing and sense marketing applied by the burger franchise in Iran are indispensable factors in increasing customer satisfaction and positively influencing purchase intention. In more detail, Josephine & Ja-Shen (2006) revealed that virtual experiential marketing positively influences virtual online purchases. Meanwhile, the study about the positive relationship of experiential marketing that conducted online or offline on purchase intention in the hotel sector also proved by Garcia et al. (2018).

Furthermore, several studies on hotel consumer behavior also revealed that consumer reviews (reference group) also had a positive influence on AiryRooms (one of VHO in Indonesia) consumer purchase intentions (Kurnia & Sulistiani, 2019). A positive relationship of customer experience engagement on loyalty which mediated by customer satisfaction in mobile apps and travel planning apps services has studied by Carlson et al. (2017) and Thakur (2019). Moreover, Choi & Kandampully (2019) focus more on the hotel atmosphere, affecting customer satisfaction and engagement.

Most previous studies analyzed experiential marketing's impact and reference group on customer satisfaction and purchase intention. Nevertheless, these previous studies did not analyze consumers' experience engagement after being exposed to experience marketing touchpoints. Therefore, this study objective is examining the effect of VHO's consumer depth-

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participation in experience marketing through experience engagement and reference group on customer satisfaction and purchase intention. Thus, this research is expected to provide managerial implications for VHO developers to adjust their marketing strategy based on consumers' main driving factors to revisit their hotels. This study's managerial implication is providing suggestion for VHO managers in concerning their consumer's interest to map the competitive advantage of VHO sustainably as a driver of economic progress based on tourism.

### **LITERATURE REVIEW**

#### **Experiential Marketing**

In the new marketing period, experiential marketing focuses on providing an experience of consumers to extraordinary brands to the target customers, which will add value/benefit to consumers' lives and make consumers always remember it. It is not because the brand is intensely promote its product or service, but because the brand can provide an unforgettable experience (Smilansky, 2009).

Humans talk about experiences because life is really a combination of everyday and real experiences. Experience gives true life packed in normal life. Experience includes all life elements and is usually caused by passive or active participation in events including virtual events. Experiences are induced and usually not faked (Schmitt, 1999). What is called experience is what the firm creates as a platform of service, using the product as an instrument and surrounding it with the customer to create an activity the customer deserves to remember. The experiences are supposed to be unforgettable and could stayed in everyone's heart, as the result of physical, emotional, and personal knowledge. It is an interaction of events and personal thoughts which results no identical experiences of each individual (Pine and Gilmore, 2003). In everyday life, humans are always involved in negative or positive brand experiences, and they tend to discuss it with others in their social interactions throughout the day or even for long periods of time. Giving something positive to consumers, from their sacrifice in the form of money to buy products, strengthening and building tangible relationships between brands and consumers is inevitable. This is why experiential marketing has revolutionized the face of marketing (Smilansky, 2009).

Through the media or other marketing channels, marketing communication messages exist to communicate with different consumers or business sectors. In contrast to these traditional marketing communications, the experiential approach focuses on real-time two-way interactions, direct brand experiences, and an intense brand-consumer process of bonding. Hands-on brand interactions typically divulge themselves in the live events form that concede customers to live, breathe and feel the brand through mesmeric sensory links and activities (O'Brien & Toms, 2013). These activities are usually structured to provide meaning to target segment. Experiential marketing is also a method of recognizing and fulfilling client desires and desires in an effective manner, addressing them through two-way interaction that promotes brand personality and brings value to the target segments (Schmitt, 2010). Marketing experience or consumer experience is broader and extends the idea of experience to encounters, partnerships or event situations only. Combination of inputs and outputs cause actions or feedback loop (Lasalle and Britton, 2002, p.30). Meanwhile, Kishka (2003) views experience management as assessing and handling positive and/or neutral consumer feedback.

Gentile et al. (2007) note that: (1) the senses of taste, sight, touch, and sound elicit the enjoyment of aesthetic, excitement, and satisfaction; (2) emotions, moods, and emotional experiences elicit confidence that a relationship with the business will be a successful one; (3) experiences are linked to conscious mental thought and processes, which cause consumers to reconsider their conclusions about a product; (4) practical experience provides a practical act, and consumers get to use the product; (5) consumer experiences that result from lifestyle values and beliefs are the way consumers can relate to others and can be loyal to them, and that those who help build the relationship will be trusted partners (experiences, emerging from social contexts and relationships, which occur during general consumption as part of a real or imagined community or with a corporate social identity). This research reveals that "consumers of these brands feel complex experiences." Each product uses more than one element, and the affiliation between elements depends on the product's characteristics itself. These elements are not triggered individually but have overlapping relationships and increase the probability of becoming interesting in the intensely immersive - or "holistic" - existence of encounters of experiences. Brand experience has a psychological component, and different thoughts, insights, and cognitive emotions can be triggered by goods (Brakus et al. 2009).

However, in reality, it is challenging to measure a consumer's experience. Therefore, this study uses the Brand Experience Scale as an indicator to evaluate experience marketing. Schmidt (1999) first developed the brand experience scale, known as the strategic experiential module consisting of "*SENSE, FEEL, THINK, ACT, and RELATE*". "Sense" emphasizes the experience captured by the five senses: vision, hearing, smell, taste, and touch that provide pleasure, joy, and aesthetic satisfaction. Marketing sense focuses on the customer's inner feelings and emotions to create an emotional experience for them, especially during the

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consumption period. "Feel" is obtained from what stimuli can trigger emotions and encourage consumers to participate automatically. "Think" uses consumer intelligence, which can create creative cognitive thinking to solve consumer problems or evaluate companies and products. "Act" comes from physical experiences, lifestyle, and interactions. Act enhances new physical experiences instead of old lifestyles, generates interactions, and enriches consumers' lives when consuming goods or services. "Relate" derives from the need for self-improvement (e.g. those referring to the perfect self) which allows others to express favourable emotions in order to associate individuals with more social structures. Furthermore, Schmitt and Zarantonello (2010) used this Brand Experience Scale to distinguish between those customers who vary in their brand experience. This experiential dimension includes sensory-effective, intellectual cognitive, and behavioural and action-oriented components described in Table 3.1 below.

**Table 1. Brand Experience Scale**

Type of Experience	Indicator Statement
Sensory (SENSE)	EM1: This brand has a good visual appeal. EM2: This brand appealed to my senses.
Affective (FEEL)	EM3: This brand creates emotions. EM4: This brand creates emotions that can trigger sentiments.
Behavioural (ACT & RELATED)	EM 5: When I use this brand, I am more apt to indulge in such physical actions. EM6: This brand results in specific emotional reactions.
Intellectual (THINK)	EM7: I am knowledgeable when I talk about the brand. EM8: This brand strengthens my problem-solving capabilities and analytical interest.

Source: Schmitt (1999); Schmitt and L. Zarantonello (2009).

Several previous studies on the effect of experience marketing on purchase intention have been carried out by Anggie & Haryanto (2011) and Khan & Rahman (2014) the findings of the analysis indicate a correlation between experience marketing on consumer loyalty and purchasing intention. From the explanation above, the hypothesis of this research is:

H1: Experience marketing has a positive and direct effect on the purchasing intention in the VHO service.

H2: Customer satisfaction mediates the influence of experience marketing on purchase intention in VHO service.

### Experience Engagement

Experiences occur at different stages of information collection, decision-making and consumption. Lasalle and Britton (2002) introduced a five-stage experience interaction model. The first is the "Discover" stage where the customer discovers goods and services to meet particular needs). The second is "Assess" when the user attempts to recognize alternative alternatives, compares them and, by applying different decision and option laws, narrows them down to desired choices). The third is "Acquire" when customers develop time and resources to shop and purchase a product). The fourth is "integrate" as customers integrate transactions into their everyday lives, for example by using products-based services). The fifth is "Extend" where there is a sustainable partnership and a customer bond with a brand).

All of these phases combine to create touch points, between the firm, its services and products, and the consumers. A "brand touch point wheel," including pre-payment, payment, and post-payment experience phases (Davis and Longoria, 2003). Our work aimed to identify and quantify user engagement. It is to describe why people use a particular application (Sutcliffe, 2010, p. 3).

The level of engagement in an experience is based on how well they appeal to our senses, the willingness of the participant to participate and participate in the experience, and how enjoyable the user thinks the experience is (O'Brien & Toms, 2013). It depends on the involvement the individual can obtain with respect to each experiential attribute. User engagement is important, but it does not necessarily lead to user satisfaction (Quesenbury, 2003; O'Brien & Toms, 2013)

Engagement includes the system's usability, aesthetic appeal, content, mood, and the user's use of the system (Norman, 1986; Laurel, 1993; Jacques, Carey & Preece, 1995). The authors found several factors that make for an engaging site, such as attention, challenge, feedback, control, novelty, interest, motivation, and sensory appeal. Context might be important as well, for example, to measure whether people enjoy using a product (O'Brien, 2013). Table 2 summarizes the touchpoints that can create experience engagement in the following table:

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**Table 2. Touch points, Experiential Marketing Mix and Attached Experience Engagement**

Touch points	Experiential Marketing Mix	Experience Engagement Factor	Engagement Outcome	Indicator Statement
Pre-purchase touch points	Advertising, public relation, web sites, social media, direct mail/samples, coupon and incentives, deals and promotion	Aesthetic Appeal (AA)	Discover and evaluate	EE1: I like the visual appearance of the hotel operator's website. EE2: The hotel operator's website is user friendly EE3: I usually use the promotion code or discount offer to get the best price. EE4: The hotel design, facilities, and furniture are elegant and worth to see.
Purchase touch points	Design, point-of-purchase displays, atmosphere, hotel location, salespeople, and sales environments.	Felt involvement (FI) Focused Attention (FA) Novelty (NO)	Acquire and integrate	EE5: I was drawn by other's customer experience review that presented on the website. EE6: I was attracted by picture and video about hotel operators on the hotel website and social media EE7: I have the incredible and unforgettable experience of using hotel facilities. EE8: I think the hotel staff is accommodating and professional. EE9: I am focused on the exterior and interior design when I have arrived at the hotel. EE10: I like the simplicity of the amenities provided by the hotel. EE11: I like the menu variation of the restaurant and bar of the hotel (if any) EE12: Compare to another hotel, I prefer this hotel as my top list  EE13: I am interested in how the hotel maintains its quality. EE14: I want to know how the menu is served. EE15: I want to involve in how the service is served (having a different experience than before) EE16: I think the hotel service is unique.



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Post-purchase touch points	Service and package performance, customer service, newsletters, and loyalty programs.	Endurability (EN)	Extend	<p>EE17: I think the hotel operator's online service is helpful</p> <p>EE18: I think the content provided in the hotel operator's online service is complete and inviting</p> <p>EE19: I like almost all the services offered by the hotel.</p> <p>EE20: I will recommend the hotel operator's online service to my colleagues by sharing the web link on my social media</p>
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Source: Lasalle & Britton (2002); Longoria (2003); O'Brien (2012)

Therefore, we hypothesize that:

H3: Experience engagement has a positive and direct impact on purchase intention in the VHO service.

H4: Customer satisfaction mediates the influence of experience engagement on purchase intention in VHO service.

**REFERENCE GROUP**

Reference group might give general service evaluation (Duverger, 2013). Reviews by online customers significantly impact sales (Duverger, 2013) and purchase intention (Lee and Shin, 2014). For the last few years, reference group have been an important consideration in the lodging industry related to the following factors: the quality of the review, quantity, and consistency. (Xie et al., 2016). Potential customers consider their reference group suggestion or advice for decreased the risk and uncertainty related to the purchasing process. Then, suggestions and recommendations can help determine the level of trust by customers (Sparks dan Browning, 2011). A reference group was measured using a four-item scale, which is fully self-developed, from the dimension of informational influence based on the studies by Bearden et al. (1989), Childers and Rao (1992), and Cheah et al. (2015). The reference group concept is meant to enable the researcher to compare the cognitions of the experimental group with that of a statistically 'surrogate' group of "independents" or "medicals" who seem similar to the experimental group in all relevant respects (biological, behavioral, and psychological) (Zhang et al., 2017).

**Table 3. Reference Group Indicator Statement**

Indicator Statement
<p>R1: I frequently do what family members recommend when buying online.</p> <p>R2: I often trust my friends' recommendations for products or services.</p> <p>R3: I frequently follow the advice of co-workers when I buy products online.</p> <p>R4: I often trust the web celebrities who recommend products or services.</p> <p>R5: I think the review by other customers on virtual hotel operator is objective</p> <p>R6: I think the review by other customers on virtual hotel operator is reliable</p> <p>R7: I think the review by other customers on virtual hotel operator is close to the facts</p>

Therefore, we hypothesize that:

H5: Reference Group has a positive and direct influence on purchase intention in VHO service.

**CUSTOMER SATISFACTION**

Experiential marketing is an integrated approach that often targets potential customers at their whim by value-added, brand-relevant communications. The experiential marketing strategy is based around a major concept that requires two-way communication between the target customer and brand via interactivity, with live brand engagement at its heart. The differences between total satisfaction and individual customer satisfaction are focused on acquisition or emotional responses after the most recent encounter, rather than on the quest for transient and special communication emotions (Balaji, Roy & Quazi, 2017). Overall customer loyalty is the average overall measurement over time of all user experience in buying a product or service (Xu, 2020). Customer satisfaction stands for total satisfaction in this study. Sense experience employees agree that the most successful

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potential with a brand takes place after purchase, and these encounters are important factors in customer satisfaction and brand loyalty.

Customer satisfaction is an important aspect, especially in the service sector, including for VHOs. Several previous studies such as (Pooya et al., 2020; Tseng & Wei, 2020) stated that a customer's good experience determines whether the service is quality or not, which further determines their satisfaction level. This is confirmed by a study by Gupta & Bansal (2012) which stated that client sensory perceptions and service quality preferences have a huge impact on the bank's customer satisfaction. Table 4 shows the indicator statement of customer satisfaction in this study.

**Table 4. Customer Satisfaction Indicator Statement**

Indicator Statement
CS1: Over conventional hotels, I prefer Virtual Hotel Operator.
CS2: I believe a virtual hotel operator can meet my hotel accommodation needs.
CS3: I am contented with the information provided by the virtual hotel operator.
CS4: I believe VHO provide good value for money
CS5: I believe VHO provide easiness for booking a hotel anywhere and anytime
CS6: I believe shopping for accommodation on VHO is worthwhile

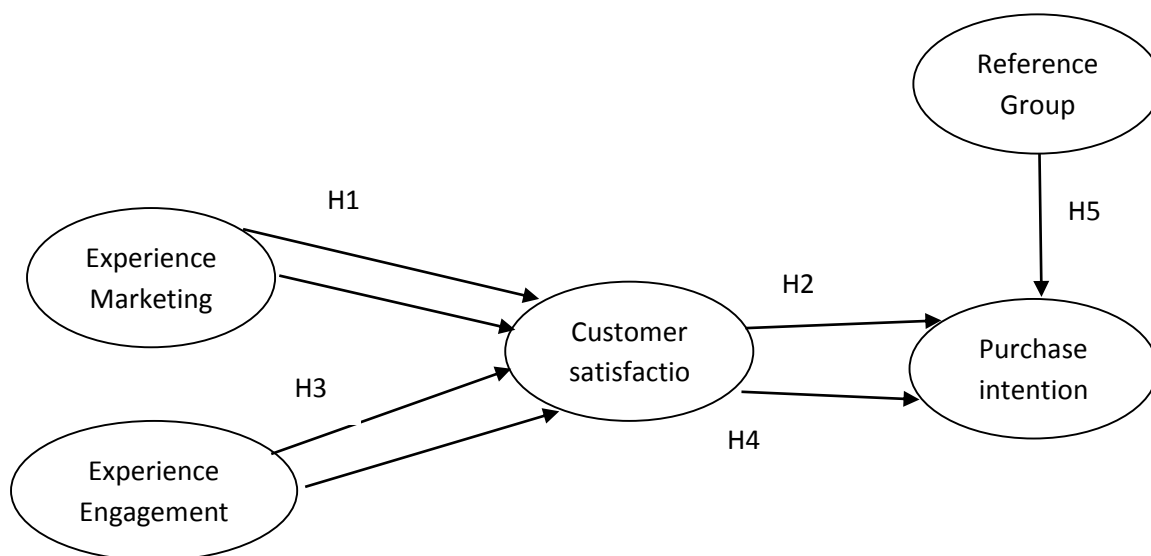
### PURCHASE INTENTION

Moreira et al. (2012) study has found a positive relationship between sensory marketing and brand experience, brand equity, which then affects purchase intention. Chen & Yang's (2020) research on 321 consumers also shows a positive relationship with customer experience regarding ease of use of e-commerce platforms and relationship service on their purchase intention. Meanwhile, research on 409 tourism sector consumers by Mohseni et al. (2018) stated that the combination of user characteristics and website experience positively affects their purchase intention. Table 5 shows the indicators of the statement of purchase intention in this study.

**Table 5. Purchase Intention Indicator Statement**

Indicator Statement
PI1: I may find a place to use VHO while I am traveling this year.
PI2: I would like to recommend VHO to my friends.
PI3: I would like to choose VHO whenever I require accommodations.

Therefore, the research framework is presented in **Figure 1**:



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## METHODOLOGY

This explanatory study aims to analyze the causal relationship between variables of experiential marketing, experience engagement, reference group on purchase intention of virtual hotel operator consumers. Customer satisfaction is a variable that mediates experiential marketing, experience engagement, and reference group on purchase intention. The study was conducted in Indonesia from January – December 2019 by distributing an online survey through Kaskus.com (the biggest online forum with 6 million users in Indonesia) in which about 250 respondents were selected as samples.

Furthermore, WARP Partial Least Square analyzed the effect between the independent variable, dependent variable, and moderating variable. This research's exogenous variable is experiential marketing, experience engagement, reference group, and customer satisfaction. Meanwhile, the endogenous variable is purchase intention.

## Sample Selection and Sample Collection Method

This study was constructed from a random sampling of VHO consumers. This sampling method was used because it was quick and easy to contact people, and the data collection costs were low. The data were gathered using a questionnaire consisting of previously validated five Likert-scales: "strongly disagree" to "strongly agree" which were adapted from previous research. The target population was composed of visitors of virtual hotel operators across Indonesia. After the sample selection results were carried out, it was found that 50.8% of the respondents were male, and the rest were female. Meanwhile, the dominant age group as VHO users is 22-30 years old, with a bachelor's degree education background. The majority of visitors (78%) are in the low to middle-income group in Indonesia with an average disposable income per month of \$ 250-500 who travel and stay at hotels for more than 5 times a year.

**Table 6. Respondent Profile**

Gender		Percentage
Male	127	50.8%
Female	123	49.2%
Age		
22-30	115	46%
30-40	85	34%
>40	50	20%
Education		
Graduate Degree	50	20%
Bachelor Degree	135	54%
Senior High School	65	26%
Disposable Income/month		
\$250-500	195	78%
\$500-1000	35	14%
>\$1000	20	8%
Visit/year		
< 5	115	46%
> 5	135	54%

## DATA ANALYSIS

Data analysis used path analysis to identify the causal relationship among variables in the research model. Path analysis represents the problem in an image forming, which reflected the relationship among variables in the path diagram (Noor, 2014). The Partial Least Square was the method used to analyze the data quality and hypothesis testing. Partial Least Square is a powerful analysis method since it is not based on many assumptions. Therefore, the calculation process is assisted by WARP-PLS software. To confirm the theory, the PLS can explain the absence and presence of relationships among latent variables.

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**RESULT AND DISCUSSION**

**1. Outer Model Analysis**

The reliability of the instrument was tested with composite reliability and Cronbach's alpha (Ghozali, 2014). Likewise, the AVE value is enough to show validity is at 0.5. Based on the criteria in table 1, the outputs of the data show the results of all the outer model criteria are met so that the research data has good reliability.

**Table 7. Result of Measurement Model**

Variable	Indicators	Loading	Cronbach's Alphas	Composite Reliability	AVE
Experiential Marketing	EM1	0.961	0.986	0.988	0.913
	EM2	0.977			
	EM3	0.977			
	EM4	0.975			
	EM5	0.975			
	EM6	0.961			
	EM7	0.961			
	EM8	0.852			
Experience Engagement	EE1	0.969	0.997	0.997	0.942
	EE2	0.956			
	EE2	0.984			
	EE3	0.909			
	EE4	0.983			
	EE5	0.983			
	EE6	0.983			
	EE7	0.968			
	EE8	0.982			
	EE8	0.971			
	EE9	0.971			
	EE10	0.972			
	EE11	0.972			
	EE12	0.956			
	EE13	0.967			
	EE14	0.982			
	EE15	0.925			
	EE16	0.976			
	EE17	0.968			
	EE18	0.968			
EE19	0.970				
EE20	0.970				
Reference Group	RG1	0.960	0.979	0.983	0.893
	RG2	0.964			
	RG3	0.965			
	RG4	0.733			
	RG5	0.989			
	RG6	0.989			
	RG7	0.989			
Customer Satisfaction	CS1	0.993	0.994	0.995	0.970
	CS2	0.993			
	CS3	0.984			
	CS4	0.967			

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	CS5	0.983			
	CS6	0.989			
Purchase Intention	PI1	0.990	0.994	0.996	0.988
	PI2	0.996			
	PI3	0.996			

Source: Data processed by WARP-PLS

Furthermore, the discriminant validity is calculated based on the Fornell-Larcker criterion value of the manifest variable for each latent variable. If the correlation between the latent variable and each indicator is greater than the correlation with the other latent variable, then the latent variable is good at predicting the indicators, as explained by Figures 2 and 3 below:

**Table 8. Discriminant Validity**

	1	2	3	4	5
EM	<b>0.956</b>	-	-		
EE	0.326	<b>0.968</b>	-		
GR	0.443	0.234	<b>0.945</b>		
CS	0.420	0.431	0.301	<b>0.985</b>	
PI	0.328	0.230	0.125	0.423	<b>0.944</b>

Source: Data processed by WARP-PLS

Table 2 shows results on discriminant validity, with the top diagonal being greater than the correlation between constructs in the same column. After data processing, the data showed greater differences in the results for other constructs in the same column. Based on this data, Cronbach's alpha, which shows the highest reliability is in the customer satisfaction variable, while the lowest is in the experience marketing variable.

**2. Inner Model Analysis**

The analysis results in this study include the results of hypothesis testing, which were analyzed using SEM with alternative WARP-Partial Least Square (PLS). Testing the hypothesis in this study is to look at the value of the path coefficient and its significance value (*p-value*).

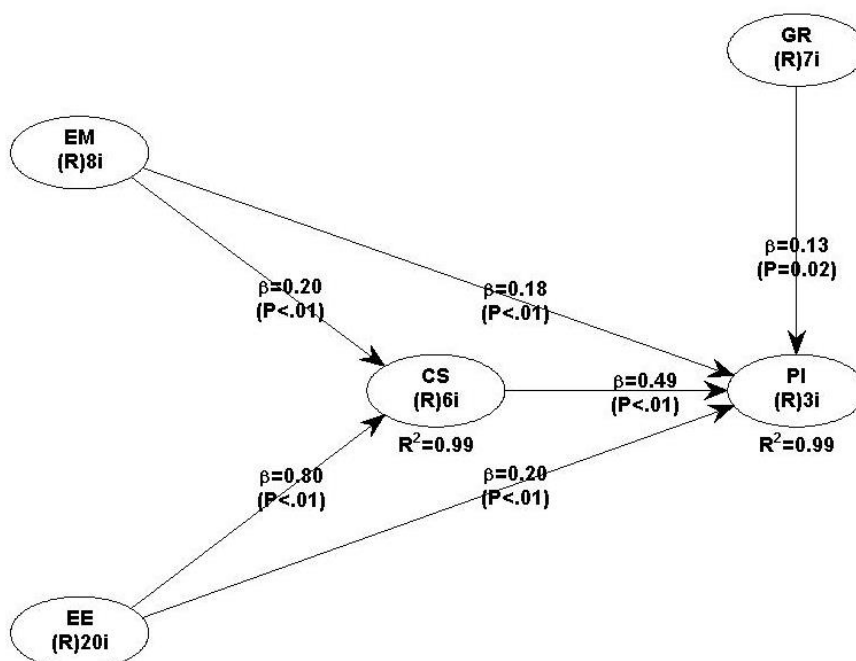


Figure 2. the Result of Path Analysis

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## HYPOTHESIS TESTING

Figures 2 shows the result of hypothesis testing; this study found that EM has a significant effect on PI as evidenced by the coefficient ( $\beta = 0.81$ ,  $p, <0.01$ ,  $R^2, 0.99$ ). Based on these tests' results, it can be concluded that EM has a positive effect on PI, so hypothesis 1 is supported. EE has a significant effect on PI, as evidenced by the coefficient ( $\beta = 0.199$ ,  $p, <0.01$ ,  $R^2, 0.99$ ). Based on these tests' results, it can be concluded that EE has a positive effect on PI so that hypothesis 2 is supported. CS mediates the influence of EM toward PI with coefficient values ( $\beta= 0.20$ ). Based on these tests' results, it can be concluded that CS partially mediates the effect of EM toward PI, so hypothesis 4 is supported. The last analysis that CS mediates EE's influence toward PI with coefficient values ( $\beta= 0.80$ ). Based on these tests' results, it can be concluded that CS partially mediates the effect of EE toward PI, so hypothesis 5 is supported. Meanwhile, GR has a significant effect on PI, as evidenced by the coefficient ( $\beta = 0.128$ ,  $p, <0.02$ ,  $R^2, 0.99$ ). Based on these tests' results, it can be concluded that GR has a good effect on PI, so that the hypothesis 5 is supported.

**Table 9. The Result of Path Coefficient**

Path coefficient					
	EM	EE	RG	CS	PI
CS	0.199	0.800			
PI	0.181	0.204	0.128	0.487	
p values					
	EM	EE	RG	CS	PI
CS	<0.001	<0.001			
PI	0.002	<0.001	0.020	<0.001	

Source: Data processed by WARP-PLS

**Table 10. Summary Of Data Analysis Results**

Relationship between variables						Result
			B	P	Sig	
EM	->	PI	0.81	<0.01	+	Supported
EE	->	PI	0.199	<0.01	+	Supported
EM -> CS	->	PI	0.20	<0.01	+	Supported
EE -> CS	->	PI	0.80	<0.01	+	Supported
GR	->	PI	0.128	<0.02	+	Supported

Source: Data processed by authors.

## DISCUSSION

Based on the hypothesis testing results, there is a positive relationship between experiential marketing to customer satisfaction and purchase intention. This is following the research results by Walsh et al., 2001; Anggie & Haryanto, 2011; Khan & Rahman, 2015; Garcia et al., 2018 stated a positive relationship between experiential marketing to customer satisfaction and purchase intention. In more detail, because part of VHO consumers' experience is from the virtual applications they use to get product information and order, the results of this study also support Josephine & Ja-Shen's (2006) research on the positive effect of virtual experiential marketing on purchase intention. Furthermore, reference groups' influence on purchase intention also supports previous research (Kurnia & Sulistiani, 2019), which focuses on examining this relationship in VHO. Experience engagement also shows a positive effect on customer satisfaction and purchase intention. Aesthetic experience, consumer understanding of service, service functionality, ability, consumers to be present and involved in the experience, and overall evaluation of services affect customer satisfaction and their purchase intention. This result is in line with Thakur's (2019) research and Carlson et al. (2019).

## TYPES OF EXPERIENCE THAT DETERMINE CUSTOMER SATISFACTION

From the results of this study, it can be concluded that VHO consumers feel that they get sensory (sense), affective (feel), and behavioral (act and related) (EM 2,3,4,5) experience compared to intellectual experience when they use services at the hotel. Consumers feel that the VHO brand appeals to their senses, induces sentiments and feelings, and makes them engage in physical action and behavior when using the brand's services (Lee & Shin, 2020). An interesting result here is that VHO consumers have the lowest score in the intellectual sense aspect compared to other sense aspects, where consumers do not take too much

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consideration before choosing a brand and that the VHO brand does not really stimulate their curiosity and problem-solving. This is consistent with existing consumer research about logos and branding (Lee & Shin, 2020; Roggeveen et al., 2020). This description is function. We assert that consumers infer meaning from these designs based on their functionality. However, some attributes such as looks, design, and styling provide no functional benefits at all. We briefly covered experiential attributes earlier and how consumers process functional attributes like purposeful, goal-directed, step-by-step, individualistic, and as trade-offs. Furthermore, this study's results indicate that the effect of experience engagement on customer satisfaction is very strong when consumers interact with touchpoints and after interacting with touchpoints. The consumer feels felt involved, focused attention, and feels the endurable VHO service. This shows that aspects of place design largely influence the perceived experience of engagement, point-of-purchase ads display, place atmosphere, salespeople service quality, service and performance package, and loyalty programs. The experience engagement is heavily influenced by "clue scans" (Schmitt, 2011). "Clue scan" is a sensory review of the physical environment, processes, and actions inside the user's experience (Schmitt, 2011). The ability to know the consumer's clues will assist VHO to create a blueprint describing the actions a consumer goes through during a service encounter (Kalbach, 2020).

Meanwhile, the reference group shows significant results on purchase intention (Ding, Ling, & Zhang, 2020), where VHO consumers are heavily influenced by reviews of previous VHO consumers, which according to consumers are under facts (equipped with picture evidence and detailed visit times) (Liu, Bao & Zheng, 2019). Prospective VHO consumers also believe that previous VHO consumer reviews are objective enough to be used as a reference in choosing accommodation. Apart from previous VHO customers, potential VHO customers also consider recommendations from coworkers, friends, and family members when buying services. Potential VHO customers also consider recommendations from these reference groups more than recommendations from celebrities. This provides an insight to management that it is essential to maintain good relations and check service ratings at rating agencies such as Trip Advisor and provide feedback to consumer reviews, expressing gratitude and response and promises for service improvement (brand promise), especially for consumer complaints. (Chen & Chang, 2018; Del Pelsmacker et al., 2018; Thomas, Wirtz & Weyerer, 2019 ).

Based on the findings of this paper, VHO managers need to expand their experience in craftsmanship of managing the signals they emit throughout the customer experience. Consumer marketing is an integrated set of disciplines that looks at clues customers unconsciously hope to find in their experiences. When businesses have an understanding of sensory cues that customers process and interpret. The value of these cues is experiential. It involves managing the breadth and depth of the experience (how far it can be extended and how deep or detailed it is). It also includes aspects of the "humanistic clues" (interactions with people), and the "mechanical clues" (e.g., environmental design). Clued-in is focused on allowing individual attention to be a part of the overall experience. Clues will be considered in the development of meaning, and the intersection of clues can be explored. Clue interactions are scale dependent. One little detail can ruin an enjoyable experience.

VHO should have a customer experience management (CEM) framework which according to Schmitt (2003), CEM is a project-based framework for managing experiences. The CEM framework originally includes three steps including analyzing the customer's experience first, building the experience platform, and implementing the experience. VHO must understand "customer insight" from a broad perspective by studying the brand and consumers' consumption and social conventions. Information on customer service is collected by conducting surveys and interviewing customers (Sakellariou, Karantinou & Goffin, 2020). Experiential analysis begins with the brand and continues to personal values. Rather, considering the consumer's cultural context is an important step to establish brand values.

The second part is to generate the experience model that is used as a guiding principle for the subsequent implementations. It must be pertinent to the consumers. A development opportunity differs from a positioning statement or perceptual map. The experiential platform allows for a dynamic, multi-sensory, multi-dimensional presentation of the experience that a product offers. Experience is catalyzed by use and then communicated through marketing (Schmitt, 2011). In order to fully communicate this position, a company can use pictures, diagrams, and verbal messages to emphasize the meaning of their message. The relationship platform should be integrated with a brand's experience and customer experience. From a brand perspective, product experience includes selecting the various attributes of experiences. The project involves design of brand's visual design. The combination of word of mouth and demonstration contributes to the completion of brand experience in communications. This is the domain of advertising companies, print and design agencies and media houses.

Experience management should be an aspect to enhance in the post-project period. The product should be changed. This idea must be institutionalized for the program to be successful. This requires a sound organizational structure and process, and also sound human and systems integration. Proper alignment is critical in service businesses such as VHO where employees serve customers. By providing incentives to employees, you ensure they provide the best experience.

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## CONCLUSION

This study concluded that there is a significant positive relationship between experience marketing, experience engagement, customer satisfaction, and relevance in the Indonesian virtual hotel industry. Therefore, VHO must have a customer experience management framework to manage customer experiences. The experience platform is also needed so that the core experience concept can be utilized as a guiding principle for future implementations. The idea must employ consumers and reflect the brand's values and personality. Experiential marketing's managerial implication is that companies that use experiential marketing will find consumers can become brand advocates and brand evangelists. As a brand advocate, people will recommend the hotel on social media, generating the most effective form of marketing for the virtual hotel. The limitation of study is the absence of demographic factors as control variable. However, for further research, researchers suggest using demographic factors such as age and gender as control variables for further studies especially that focused on understanding the change of consumer behaviour in using VHO services that are linked with different ages or gender.

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## REFERENCES

- 1) Anggie, C., & Haryanto, J. O. (2011). Analysis of the Effect of Olfactory, Approach Behavior, and Experiential Marketing toward Purchase Intention. *Gadjah Mada International Journal of Business*, 13(1), pp. 85-101.
- 2) Balaji, M. S., Roy, S. K., & Quazi, A. (2017). Customers' emotion regulation strategies in-service failure encounters. *European Journal of Marketing*.
- 3) Brown, Banks & Lu, Audrey. (2016). Legal Issues with Respect to Virtual Hotels. Retrieved from [http://hotelexecutive.com/business\\_review/4573/legal-issueswith-respect-tovirtual-hotels](http://hotelexecutive.com/business_review/4573/legal-issueswith-respect-tovirtual-hotels).
- 4) Chen, C-C., Chang, Y-C. (2018). What Drives Purchase Intention on Airbnb? Perspectives of Consumer Reviews, Information Quality, and Media Richness. *Telematics and Informatics*. <https://doi.org/10.1016/j.tele.2018.03.019>.
- 5) Chen, N., & Yang, Y. (2020). The impact of customer experience on consumer purchase intention in cross-border E-commerce—Taking network structural embeddedness as mediator variable. *Journal of Retailing and Consumer Services*, 102344.
- 6) Choudary, Sangeet. (2014, July 4). How The Hotel Industry Got Blindsided...and Why Yours Could be Next. *The Forbes*. Retrieved from < <https://www.forbes.com/sites/groupthink/2014/07/07/how-the-hotel-industry-got-blindsided-and-why-yours-could-be-next/>>
- 7) Danniswara et al. (2017), The Impact of EWOM Referral, Celebrity Endorsement, and Information Quality on Purchase Decision: A Case of Instagram. *Information Resources Management Journal*. <https://doi.org/10.4018/IRMJ.2017040102>
- 8) De Pelsmacker, P., Dens, N., & Kolomiiets, A. (2018). The impact of text valence, star rating and rated usefulness in online reviews. *International Journal of Advertising*, 37(3), 340-359.
- 9) Ding, S., Lin, J., & Zhang, Z. (2020). Influences of Reference Group on Users' Purchase Intentions in Network Communities: From the Perspective of Trial Purchase and Upgrade Purchase. *Sustainability*, 12(24), 10619.
- 10) Duverger, P. (2013). Curvilinear effects of user-generated content on hotels' market share: a dynamic panel-data analysis. *Journal of Travel Research*, 52(4), 465-478. <https://doi.org/10.1177/0047287513478498>
- 11) Elder, R. S., Aydinoglu, N. Z., Barger, V., Caldara, C. Chun, H., Lee, C. J., Mohr, G. S., et al. (2010). A sense of things to come: Future research directions in sensory marketing [Electronic version]. Retrieved [insert date], from Cornell University, School of Hospitality Administration site: <http://scholarship.sha.cornell.edu/articles/336>
- 12) Garcia, Jose Alberto Castaneda., Del Valle Galindo, Andrea & Suarez, Rocio Martinez. (2018). The effect of online and offline experiential marketing on brand equity in the hotel sector. *Spanish Journal of Marketing*, Vol. 22 (1), pp. 22-41.
- 13) Guo, Xiaolong., Ling, Liuyi., Yang, Chenchen., Li, Zhaoqiong & Liang, Liang. (2013). Optimal Pricing Strategy Based on Market Segmentation for Service Products using Online Reservation Systems: An Application to Hotel Rooms. *International Journal of Hospitality Management*, Vol. 35, pp. 274-281. <https://doi.org/10.1016/j.ijhm.2013.07.001>.
- 14) Hair, J., Black, W., Babin, B., Anderson, R., (2010). *Multivariate Data Analysis*, Seventh Edition. Pearson Prentice Hall, NJ.
- 15) Hultén B., Broweus N., van Dijk M. (2009) What is Sensory Marketing?. In: *Sensory Marketing*. Palgrave Macmillan, London.
- 16) Kalbach, J. (2020). *Mapping experiences*. O'Reilly Media.



## The Experiential Marketing, Experience Engagement, Reference Group, and Customer Satisfaction Toward Purchase Intention of Virtual Hotel Operators (VHO): Indonesian Context

- 17) Khatoon, S., Zhengliang, X., & Hussain, H. (2020). The Mediating Effect of customer satisfaction on the relationship between Electronic banking service quality and customer Purchase intention: Evidence from the Qatar banking sector. *SAGE Open*, 10(2), 2158244020935887.
- 18) Khan, I and Rahman, Z. (2014). Influence of Experiential Marketing on Customer Purchase Intention: A Study of Passenger Car Market. *Management and Labour Studies*, Vol. 39 (3), pp,319-328.
- 19) Kurnia, Gres & Sulistiani, Putri B. (2019). Influencing Consumer's Behavior: Perspective of Information Quality and Consumers Reviews on Airyrooms. *International Journal of Social Sciences*, Vol. 5 (1), pp. 254-266.
- 20) Kotler, P. (2000). *Marketing Management*. Millennium edition. Prentice Hall.
- 21) Lee, E.J., Shin, S.Y., (2014). When do consumers buy online product reviews? Effects of review quality, product type, and reviewer's photo. *Comput. Hum. Behav.* 31, 356–366. <https://doi.org/10.1016/j.chb.2013.10.050>
- 22) Lee, J. E., & Shin, E. (2020). The effects of apparel names and visual complexity of apparel design on consumers' apparel product attitudes: A mental imagery perspective. *Journal of Business Research*, 120, 407-417.
- 23) Lien, Che-Hui, et al., 2015. Online Hotel Booking: The Effects of Brand Image, Price, Trust and Value on Purchase Intentions. *Asia Pacific Management Review*. Vol 20: 210-218. <https://doi.org/10.1016/j.apmr.2015.03.005>
- 24) Lindstrom, M. (2005). *Brand Sense: Build Powerful Brands through Touch, Taste, Smell, Sight and Sound*. New York: Free Press.
- 25) Liu, C., Bao, Z., & Zheng, C. (2019). Exploring consumers' purchase intention in social commerce. *Asia Pacific Journal of Marketing and Logistics*.
- 26) Margarido, Ana Carina Freire. (2015). The Impact of Technological Amenities on Customer Experience in Upscale Hotels. *Dissertation*, ISTCE Business School, University Institute of Lisbon.
- 27) Moreira, A. C., Fortes, N., & Santiago, R. (2017). Influence of sensory stimuli on brand experience, brand equity and purchase intention. *Journal of Business Economics and Management*, 18(1), 68-83.
- 28) Mohseni, S., Jayashree, S., Rezaei, S., Kasim, A., & Okumus, F. (2018). Attracting tourists to travel companies' websites: the structural relationship between website brand, personal value, shopping experience, perceived risk and purchase intention. *Current Issues in Tourism*, 21(6), 616-645.
- 29) Gobé, M. (2001). *Emotional Branding: The New Paradigm for Connecting Brands to People*. New York: Allworth.
- 30) Papathanassis, A., Knolle, F., (2011). Exploring the adoption and processing of online holiday reviews: a grounded theory approach. *Tourism Management*, 32 (2), 215–224. <https://doi.org/10.1016/j.tourman.2009.12.005>.
- 31) O'Brien, H. L., & Toms, E. G. (2013). Measuring engagement in search systems using the User Engagement Scale (UES). *Information Processing and Management*, 49(5), 1092-1107.
- 32) Roggeveen, A. L., Grewal, D., Karsberg, J., Noble, S. M., Nordfält, J., Patrick, V. M. & Olson, R. (2020). Forging meaningful consumer-brand relationships through creative merchandise offerings and innovative merchandising strategies. *Journal of Retailing*.
- 33) Samy, Hossam. (2016). Exploring Factors that Influence Domestic Tourists' Satisfaction with Budget Hotel Services in Egypt. *Journal of Tourism, Heritage and Services Marketing*, Vol. 2 (2), pp. 17-22.
- 34) Sakellariou, E., Karantinou, K., & Goffin, K. (2020). From user insights to user foresights: Applying video-based ethnographic narratives and user innovation in NPD. *Technological Forecasting and Social Change*, 153(C).
- 35) Scheyvens, Regina. (2002). *Tourism for Development: Empowering Communities*. Prentice Hall.
- 36) Sparks, B.A. and Browning, V. (2011). The impact of online reviews on hotel booking intentions and perception of trust. *Tourism Management*, Vol. 32 No. 6, pp. 1310-23. <https://doi.org/10.1016/j.tourman.2010.12.011>
- 37) Schmitt, B.H. (2003). *Customer Experience Management*. New York: Wiley.
- 38) Schmitt, B.H. (2010). Experience Marketing: Concepts, Frameworks and Consumer Insights. *Foundation and Trends in Marketing*, Vol.5 (2), pp.55-11. DOI: 10.1561/17000000027
- 39) Schmitt, B.H. (2011). *Experiential Marketing*. New York: Free Press.
- 40) Smilansky, Shaz. (2009). *Experiential Marketing: A Practical Guide to Interactive Brand Experiences*. Kogan Page: London.
- 41) Taheri, B., Jafari, A., & O'Gorman, K. (2014). Keeping your audience: Presenting a visitor engagement scale. *Tourism Management*, 42, 321-329.
- 42) Thomas, M. J., Wirtz, B. W., & Weyerer, J. C. (2019). Determinants Of Online Review Credibility And Its Impact On Consumers'purchase Intention. *Journal of Electronic Commerce Research*, 20(1), 1-20.
- 43) Vermeulen, I. E., & Seegers, D. (2009). Tried and tested: The impact of online hotel reviews on consumer consideration. *Tourism Management*, 30(1), 123-127. <https://doi.org/10.1016/j.tourman.2008.04.008>

## The Experiential Marketing, Experience Engagement, Reference Group, and Customer Satisfaction Toward Purchase Intention of Virtual Hotel Operators (VHO): Indonesian Context

- 44) Walsh, J.A., Jamroz, U., Burr, S.W. (2001). *Sense of place as a component of sustainable tourism marketing*, Book chapter in *Tourism, Recreation and Sustainability: Linking Culture and the Environment*, pp. 195-216, CABI Publishing, Wallingford, UK.
- 45) Wiastuti, Rachel Dyah., Susilowardhani, Erna Mariana. (2016). Virtual Hotel Operator: Is it Disruption for Hotel Industry?. *Journal of Hospitality dan Pariwisata*, Vol.2 (2), pp. 201-205.
- 46) Wiebe, E. N., Lamb, A., Hardy, M., & Sharek, D. (2014). Measuring engagement in video game-based environments: Investigation of the User Engagement Scale. *Computers in Human Behavior*, 32, 123-132.
- 47) World Travel & Tourism Council. (2019). Indonesian Travel and Tourism Growing Twice as Fast as Global Average. Retrieved from <https://www.wttc.org/about/media-centre/press-releases/press-releases/2019/indonesian-travel-and-tourism-growing-twice-as-fast-as-global-average/>
- 48) Xie, K.L., Chen, C., Wu, S., (2016). Online consumer review factors affecting offline hotel popularity: evidence from tripadvisor. *J. Travel. Tourism Market*. 33 (2), 211–223. <https://doi.org/10.1080/10548408.2015.1050538>
- 49) Xu, X. (2020). Examining an asymmetric effect between online customer reviews emphasis and overall satisfaction determinants. *Journal of Business Research*, 106, 196-210.
- 50) Zhang, M., Luo, M., Nie, R., & Zhang, Y. (2017). Technical attributes, health attribute, consumer attributes and their roles in adoption intention of healthcare wearable technology. *International journal of medical informatics*, 108, 97-109.



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## Method of Advancement Guidance on Planting Religious Value of Early Childhood in Bone



<sup>1</sup>Mansyur Suma, <sup>2</sup>Syamsuddin AB, <sup>3</sup>Ayu Rahayu

<sup>1,2,3</sup>Faculty of Da'wah and Communication, Alauddin State Islamic University, Makassar

**ABSTRACT:** Research on counseling guidance methods for inculcating religious values in early childhood aims to determine the application of parental counseling guidance in inculcating religious values in early childhood in the family, as well as the obstacles experienced in the application of guidance carried out by families. Therefore, this research is a field research with a qualitative research type, it will focus on the interview method, observation, while the primary data for parents and early childhood, the research instrument itself, while the data analysis is data reduction, data presentation, drawing conclusions.

The results showed that in the application of the counseling guidance method to the inculcation of religious values in early childhood, five methods were used, namely: the method of giving advice; in giving counsel gently and tactfully so that children may receive counsel, The exemplary method; the family should give a good example to the child, the method of habituation; it is necessary to make habituation to children so that children always do good and practice the goodness they know, Supervision Methods; carry out surveillance at all times, and the method of punishment; punish the child so that the child is aware of the mistakes that have been made. While the obstacles faced by the family are the influence of social media, and the child's social environment.

**KEYWORDS:** Methods, Islamic Guidance, Parents, Religious Values, Children

### INTRODUCTION

Parents are the main and first guides in the family, the family is very obliged to educate, guide children, especially in instilling religious values at an early age, there are many methods that can be used in educating families, guiding children in religious matters. Instilling Islamic religious values in children is the duty of the family as the first role model and role model for a child. The family is the first and foremost place for children to get an education. In this family, children begin to learn various things such as recognizing letters, learning to speak, socializing, recognizing numbers, learning religious values and getting education on the value of worship, and morals. Parents will be role models for them, therefore the speech and behavior of parents should be able to be role models for their children and be educated according to Islamic teachings, so that they can distinguish between good and bad and can become pious and pious children. Families have an important role in shaping the younger generation. As parents are required to instill Islamic values in children from an early age. Whether or not the values of Islam are instilled in a child are determined by the education they have received since childhood starting from the family environment, therefore parents are responsible for instilling Islamic religious values in children so that they are useful for the nation and state. As for what I mean by family is parents, like Father and Mother. Children at an early age are called an untidy age because they tend to be indifferent or careless in appearance and their rooms are also very messy. And this period by parents is called a difficult period because children do not want to obey orders, they are more influenced or obeyed by their friends than parents and other family members<sup>1</sup>. Children have certain characteristics that are unique and not the same as adults, they are always active, dynamic, enthusiastic and curious about what they see, hear, feel, as if they never stop exploring and learning. Children are egocentric, have a natural curiosity, are social creatures, unique, rich, with fantasy, have short attention spans, and are the most potential period for learning.<sup>2</sup> The Qur'an describes that the child is a beauty that cannot be described with words and the child is owned according to expectations, has noble character, is obedient to both parents (in terms of goodness), and becomes a

<sup>1</sup>Alisuf, Sabri M. (2001). *Educational Psychology*. Jakarta: Science Guide for Jaya

<sup>2</sup>Yuliani Nurani Sujiono, (2012). *Basic Concepts of Early Childhood Education* Jakarta Pt Index

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pious child.<sup>3</sup> Early childhood is a unique period in children's lives, because it is the most intense and busiest period of growth, the importance of early childhood demands an approach that will be used in learning activities that focus on children. Because children are a dream for every parent and the next generation of the nation, but one of the problems that arise is that not every parent or educator understands the right way to educate children at an early age.<sup>4</sup> The level of intelligence of children is indeed determined by various factors, such as nutrition for the brain, heredity, the environment, how to educate children and so on, but one thing that wise parents should remember is to provide the widest opportunity for children to develop, of course still under supervision. Parent. Various studies conducted by child experts, show that the learning process and brain growth of children during the preschool age have a strong relationship with their success in the future.<sup>5</sup> Early childhood education is directed at providing applications to provide examples for children, guide, nurture, and provide learning activities that will produce children's abilities and skills. Religion is an important factor in human survival, without religion humans will lose their direction and purpose, in particular, Islamic education is more effective if done early on. Planting Islamic religious education in children at the Golden Age stage will be easier to understand and implement for early childhood. The imitative nature of children encourages them to do the same activities as their parents, by inculcating children's religious values at an early age in Islamic education in PAUD and habituation at home with the guidance of their parents. The lack of religious knowledge in the parents of students and the lack of instilling the values of Islamic religious educators also affect the character and religion of children after they grow up. The role of parents is as the head of the family or family leader and as a family organizer. Parents have a function, namely guiding and directing children to deepen the meaning of faith in guiding and directing children to deepen the meaning of faith can be done by instilling religious values in children. There are several methods that can be used by parents in instilling religious values in their children. Parents can use the habituation method, the method of giving advice, the exemplary method, and the method of punishment in inculcating religious values, namely by familiarizing children with good behavior, which in turn will become accustomed to good behavior in society. For example, at home children are taught and accustomed to praying before eating and drinking, talking to older people using soft and polite language, speaking not to lie, and giving greetings to everyone. Therefore, religious instructors must be able to provide real examples of good behavior to children so that children believe and want to get used to themselves because they have been given real examples. Apart from getting children used to good behavior, religious instructors also give advice to children about good and bad behavior. In addition to exemplifying good behavior to children and providing advice on what kind of good and bad behavior, parents can also provide guidance to children regarding religious values. Parents give a simple explanation about the value of faith and moral values. Based on the background, the problem in the research is how the method of Islamic counseling guidance in inculcating religious values in early childhood and the obstacles experienced by parents in inculcating religious values in early childhood.

## LITERATURE REVIEW

### Islamic Counseling Guidance

Etymologically, guidance and counseling consists of one word, namely guidance, a translation of the word guidance which means help and counseling adopted from the word kongseling which means advice. However, in practice, guidance and counseling are an inseparable unit.<sup>6</sup> Guidance in English is referred to as guidance, which generally means help or guidance. The literal meaning of guidance is to direct, guide, manage, and steer. The definition of etymology leads to one meaning, namely meaning by guiding or guiding.<sup>7</sup> Terminologically, guidance is the provision of assistance to overcome the problems it faces and is able to guide itself, although that ability may have to be explored and developed through guidance. as much as possible both for himself and for society.<sup>8</sup> Guidance is a process of providing assistance to the community, both individually and in groups, so that they can develop their abilities well, to obtain personal happiness and social benefits, and to understand themselves and their environment in overcoming obstacles to determine better future plans. While counseling according to language comes from the English translation, namely "Counseling" which means giving advice, counseling and information. The point is someone who gives advice to others who need treatment to solve the problems at hand.<sup>9</sup> Guidance is a process of helping individuals. Therefore, guidance is a continuous activity, meaning that it is followed continuously until the goals and adjustments have been

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<sup>3</sup>Abdullah Nasih Ulwan. (2009). *Loves to Educate Children in Islam*. Darul Hikmah: Jogjakarta

<sup>4</sup>Mansoor (2005). *Early Childhood Education*, Yogyakarta: Student Library

<sup>5</sup>Prasetyono (2008), *Methods for Making Children Smart from an Early Age*, Yogyakarta: Garailmu

<sup>6</sup>Tohirin (2009). *Guidance and Counseling in Schools and Madrasahs*. Jakarta: Rajawali Press

<sup>7</sup>LN, Syamsu Yusuf (2006), *Foundation for Guidance and Counseling*. Bandung: PT. RosdaKarya Youth

<sup>8</sup>Hellen (2002), *Guidance and Counseling Cet.I*; Jakarta: Ciputat Press

<sup>9</sup>Winkel, W.S. (2006) *Guidance and Counseling in Secondary Schools*. Jakarta: PT. Grasindo.

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achieved. While counseling is one of the service techniques in overall guidance, namely by providing overall assistance. Therefore, guidance and counseling cannot be separated from each other, because both have a close relationship. Guidance is a process of providing assistance, meaning that guidance does not specify or require, but merely helps individuals. Individuals are assisted, guided and directed to be able to live in harmony with God's provisions and instructions, meaning that living in harmony with God's provisions means in accordance with their essence as God's creatures, living in harmony with God's instructions, meaning in accordance with guidelines that have been determined by God through His Messenger (teachings of the Prophet). Islam), living in harmony with Allah's provisions means realizing one's existence as Allah's creatures, created to serve Him. Counseling is the involvement of a person to communicate information consciously with the aim of helping others give opinions so that they can make the right decisions. Counseling is a learning process for key players and business actors to be willing and able to help and organize in accessing market information, technology, capital and other resources as an effort to increase awareness in preserving environmental functions. Counseling is a service process that involves the professional ability of service providers. Counseling should at least involve a second person, the recipient of the service, namely people who previously felt or actually couldn't do something and after receiving the service they could do something.<sup>10</sup> The specific purpose of Islamic Counseling Guidance is to help the counselee not to face problems, to help the counselee overcome the problems he is currently facing, to help the counselee maintain and develop good or good situations and conditions so that they remain good, so that they will not become a source of problems for themselves. and other people.<sup>11</sup> According to other experts, the purpose of Islamic Counseling Guidance is to function as optimally as possible religious values in personal or community challenges, so that they can provide benefits for themselves and society. In order to achieve the objectives as described previously, and in line with the functions of Islamic counseling guidance, it can be briefly said that Islamic counseling guidance improves its nature. As in the word of Allah SWT QS Ar Rumn/30:30. The nature of Allah is meant that humans carry the nature of monotheism, namely knowing God Almighty, recognizing himself as his creation, who must submit and obey his provisions and instructions. Knowing himself or knowing his nature will make it easier for individuals to prevent problems, solve problems, and guard against possible problems re-emerging.<sup>12</sup> Illumination activities carried out by Islamic religious instructors in order to provide assistance to other people who are experiencing spiritual difficulties in their environment so that that person is able to overcome their own problems because of awareness or surrender to God Almighty so that a light of hope arises in the person's self. , the happiness of living now and in the future.<sup>13</sup> In addition, religious understanding produces divine potential so that with that potential individuals can carry out their duties as caliphs, so that they can overcome life's problems, provide benefits and safety for their environment in various aspects of life.<sup>14</sup> This step is a step that helps the client carry out the desired program of activities or helps the client return to solving new problems related to the original problem.<sup>15</sup> If a counselor uses this method, then he or she must be patient and listen attentively to all the client's inner expressions that are expressed to him. Directive counseling. If the problem involves a serious mental illness, the counselor will referral (delegate) or send it to a psychiatrist.<sup>16</sup>

### Early Childhood Religious Values

Value is something that is attached to something else that is part of the identity of that thing. Material and abstract forms in nature cannot be separated from value. Values provide a definition, identity, and indication of anything concrete or abstract. Value according to Sjarkawi is the quality of something that can be liked, desired, useful, appreciated, and can be an object of interest. The definition of value according to Toha is "something that is abstract, ideal. Values are not concrete objects, they are not facts, and it is not only a matter of truth that requires empirical proof, but also a matter of understanding what is desired, liked or disliked.<sup>17</sup> Value is something that is most important or valuable for humans as well as the core of life.<sup>18</sup> Religion in this sense is the most important and most valuable and most basic thing for humans because apart from being an instinctive fulfillment of humans, it also leads humans to their ultimate goal, namely to serve their God. Islamic values are values that will be able to bring people to happiness, prosperity, and human safety both in the life of this world and in the hereafter.<sup>19</sup> The values contained in Islam are very broad in scope because Islam is universal and involves all human life from various aspects of

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<sup>10</sup>Mappiare, Andi (2011). *Introduction to Counseling and Psychotherapy*. Jakarta: Rajawali Press

<sup>11</sup>Tohirin (2009). *Guidance and Counseling in Schools and Madrasahs*. Jakarta: Rajawali Press

<sup>12</sup>Tohirin (2009). *Guidance and Counseling in Schools and Madrasahs*. Jakarta: Rajawali Press

<sup>13</sup>Elfi Mu'awanah and Rifa Hidayah (2014), *Islamic Guidance and Counseling*, Jakarta: YAPMA

<sup>14</sup>Adz-dzaky, M. Hamdani Bakran. (2001). *Islamic Counseling and Psychotherapy*. Yogyakarta :Dawn of the New Library

<sup>15</sup>Djumbuhur and Muh. Surya (2007), *Guidance and Counseling in Schools Bandung*: CP. Science

<sup>16</sup>Arifin (2009). M.H. *Philosophy of Islamic Education*, Jakarta: Earth Literacy

<sup>17</sup>Toha, Chabib (2000). *Capita Selecta on Islamic Education*, Yogyakarta: Student Library

<sup>18</sup>Buseri, Kamriani (2003). *Anthology of Islamic Education and Da'wah of Contemporary Practical Theoretical Thought*, Yogyakarta: UII Press

<sup>19</sup>Jalaluddin. (2008). *Psychology of Communication*. Bandung: Rosdakarya Teenagers

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life, so that all human life and human activities must be in accordance with religious teachings so that humans can obtain safety and happiness in the world and the hereafter. The form of Islamic values that are instilled in students are the values of aqidah (faith), the value of worship and moral values. Namely considerations about good and bad, right and wrong, right and wrong, blessed and cursed by Allah SWT. From this definition, what is meant by inculcating Islamic religious values is how a teacher's efforts / ways in instilling religious values in their students are based on an understanding of belief in Allah swt and the creed of association between fellow humans and their environment in daily life, namely in the form of the habit of praying before doing work, living frugally, respecting each other and doing what is ordered and staying away from existing prohibitions. Therefore, students can behave in accordance with the inculcation of Islamic religious values which they consider to be good and become part of themselves rather than measuring one's social growth or personality development.<sup>20</sup> Early childhood according to the National Association in Education for Young Children (NAEYC) is a child who is in the age range from birth to age 6 years. Early childhood is a group of children aged 3-6 years who have various genetic potentials and are ready to be grown and developed through the provision of various stimuli.<sup>21</sup> There is something that needs to be emphasized in introducing religious values to early childhood, including children starting to have interest or interest, all children's behavior forms a pattern of behavior, honing positive potential in themselves, social beings and servants of God. In order for children's interests to thrive and continue to develop, children must be trained in a fun way so they don't feel forced to do activities.<sup>22</sup> Children at this stage also begin to learn or imitate and tell imaginary stories. Instilling religious values in children must be adjusted to their developmental age, especially when the child is at the golden age.<sup>23</sup> According to the psychological view, early childhood has distinctive characteristics and is different from other children who are over the age of 8 years.<sup>24</sup>

### METHODS OF APPLYING EARLY CHILDHOOD RELIGIOUS VALUES

The method of inculcating religious values for early childhood is the method of inculcating exemplary In the big Indonesian dictionary it is stated that the basic word "exemplary" is exemplary, namely actions or items that can be imitated and imitated.<sup>25</sup> Exemplary in education is the most effective and successful way to prepare children in terms of morals, mental and social formation. This is because educators are role models or idols in the eyes of children and good examples in their eyes. Children will imitate both their morals, words, actions and will always be embedded in the child. Therefore, the exemplary method is an important factor in determining the good and bad of a child's personality.<sup>26</sup> It is an effective method in shaping children's faith, morals, mental and social, this is because advice has a great influence on making children understand the nature of things and giving them awareness of Islamic principles.<sup>27</sup> Applications in Instilling Islamic Religious Values in Early Childhood, namely the value of aqidah and the value of worship. Instilling the value of aqidah (faith) is the first step in introducing the existence of an almighty Essence who created the world and everything in it. Teaching to instill the value of aqidah to children means a teaching-learning process about various aspects of belief. Where this is of course belief according to Islamic teachings. According to the formulation of the Tawhid scholars, faith means justifying with the heart, pledging with the tongue the existence and oneness of Allah. This formulation was completed by the Ash'ariyah scholars to be, confirming with the heart, pledging with the tongue the teachings brought by the Messenger of Allah from Allah. in the context of faith, the center or core of the conversation is about the oneness of Allah. Therefore, the science of faith is also known as Tawhid.<sup>28</sup> Morals are etymologically plural from khuluq which means character, manners, behavior or character. The family in the pedagogical perspective is a life partnership that is woven by love between two types of human partners which is confirmed by marriage which intends to perfect each other.<sup>29</sup> In an effort to complement and perfect each other, it includes the realization of roles and functions as parents. The family in a sociological perspective is the smallest unit in people's lives, consisting of a family head (father), a family organizer (mother), and members (children) with economic cooperation, education, care, and protection. The family has a very important role in religious education for their children, especially in the formation of personality.<sup>40</sup> The function of the family is a religious function. The family is obliged to introduce and invite children and other family members to religious life.<sup>30</sup>

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<sup>20</sup>Soemiarti Patmonodewo. (2003). *Pre-School Children's Education*. Jakarta:Rineka Create

<sup>21</sup>Dewi Salma (2004). *Educational Technology Mosaic*. Jakarta: Prenada Media.

<sup>22</sup>Mansoor (2005). *Early Childhood Education*, Yogyakarta: Student Library

<sup>23</sup>Hasan, Maimunah (2009). *Early Childhood Education*, Yogyakarta : Diva Press

<sup>24</sup>Hartati, Sofia (2005). *Learning Development in Children*, Jakarta: Ministry of National Education.

<sup>25</sup>Arief, Armai (2002). *Introduction to Islamic Education Science and Methodology*, Jakarta: Ciputat Pers

<sup>26</sup>Nasih Ulwan, Abdullah (2012). *Children's Education in Islam*, Solo: Insan Kamil.

<sup>27</sup>Syamsuddin AB.(2018) *Light of Living Family Parenting (Structural Functionalism and Symbolic Interactionism)*, Wade Group, Ponorogo

<sup>28</sup>Darajat, Zakiah (2008). *Islamic Education*, Jakarta: Earth Literacy

<sup>29</sup>Azmi, Muhammad (2006). *Early Childhood Moral Development*, Yogyakarta Belukar

<sup>30</sup>Soelaeman (1987). *Basic Cultural Sciences*. Bandung: PT. ERESKO

### METHODOLOGY

This type of research is a qualitative research with literature and field orientation (field research). In addition, qualitative research also directs its research objectives to efforts to find a theoretical basis, is descriptive in nature with emphasis on process rather than results, and limits studies to focus on having a set of criteria for examining data.<sup>31</sup> The approach in this study is directed to the disclosure of the mindset used by researchers in analyzing the target or in other words the approach is a scientific discipline that is used as a reference in analyzing the object under study in accordance with the logic of that science. The research approach is usually adapted to the research profession, but it is possible for researchers to use multi-disciplinary research.<sup>32</sup>

Primary data sources can be obtained from complete informants. In this study, the key informants. Secondary data sources can be divided: first, conceptual literature review and literature review. Data collection techniques, by means of observation, interviews by asking some research questions and documentation. Research Instruments used in this field research include: interview guide (question list), camera, recording device, pen and notebook. The data obtained in the field during the research through observation, interviews, and documentation were processed using inductive techniques. Inductive technique is a data processing technique by starting from a specific problem, then from these results a general conclusion is drawn. Data analysis is a way to process data after it is obtained from research results, so that it can be taken as a conclusion based on factual data. Data analysis in a study is very much needed and is even a very decisive part of several previous research steps. Thus data analysis can be carried out throughout the research process by using the following analytical techniques: data reduction, data presentation, conclusion drawing.<sup>33</sup>

### RESULT AND DISCUSSION

Families have an important role in shaping the younger generation. Some parents are required to inculcate the values of worship and morals from an early age. Parents play an important and very influential role in the education of children from birth to adulthood. Children are a trust placed by God, if the trust is maintained properly and provides a good education then the reward will be obtained. Parents are very responsible in educating their children because parents are the main and first educators in the family, especially in instilling Islamic religious values. This was also expressed by one of the parents named Abd. Greetings who are in Manajeng Village, Sibulue District, Bone Regency. The application of Islamic Counseling Guidance in instilling religious values in early childhood in the family is as follows:

#### Giving Advice

This process of giving advice is the most common method applied in the family. Giving this advice is a very important way of applying Islamic principles to children. The form of guidance from the advice of the Qur'an is very important to shape the soul with goodness and lead to the right in receiving guidance. In the Qur'an it has also been proven that a pure soul, a clean heart with good and sincere advice delivery, then without a doubt Allah's instructions will be quickly accepted. Likewise, if the child is always guided with good advice, it will be more imprinted and easily accepted as said by the family. Based on the statement, the researcher concludes that the method of giving advice is the most common method used by parents in instilling religious values, because according to them, giving good advice and direction to children will be very imprinted in children which will make children have good behavior.

#### Giving an Example

Psychologically, humans do need role models in their lives, this is an innate trait. Imitating is one of human nature, therefore in religious education for children it is necessary to have a character who is used as a good example so that children will imitate something good. In the family, parents are the role models for their children. Parents must first conduct behavior that contains moral values that will be conveyed to children. Thus, when parents convey messages of moral values to their children, parents can be good role models for their children. Based on the statements of the informants above, the researcher concludes that in instilling Islamic religious values, parents are obliged to be role models and be good examples for their children, all of this aims so that children can imitate what their parents do and someday children can realize in everyday life.

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<sup>31</sup>Lexy, J Moleong. (2008) *Qualitative Research Methodology*, Bandung: PT Remaja Rosdakarya

<sup>32</sup>Amen, Muliati (2010). *Congregational Da'wah (Dissertation) Makassar*, PPS. UIN Alauddin

<sup>33</sup>Syamsuddin AB (2017), *Fundamentals of Social Research Methods*, CV Wade Group, Ponorogo

## **Method of Advancement Guidance on Planting Religious Value of Early Childhood in Bone**

### **Doing Habits**

Habituation is one way or method in instilling Islamic-style behavior in children, such as getting used to good character, speaking the right way, being respectful to others at home, school or where they play. Suryani revealed, as parents, it is appropriate to teach good habits to children. Just a small example like what I did for my children getting used to ablution, getting used to sleeping not too late and getting up not too late, to always praying five times a day, getting used to reading the Koran after prayer, not forgetting to also teach the habit of being polite to parents, teachers, friends, and other people, always do good to others and apologize when they make mistakes. This good habit must be done as early as possible to the child, so that one day the child will become a better person. Based on the statement above, the researcher concludes that by providing positive habits is one way to form a better attitude and behavior of children, because habituation is done as early as possible, can be seen when children begin to grow and develop into adults.

### **Supervision Method**

This supervision method is a way of assisting children in the effort to form aqidah, morals, and worship values in supervising and preparing them psychologically and socially. The role of parents in providing encouragement, supervision and control for their children is very necessary, both in terms of life and aspects of education as recommended by Allah in the Qur'an. The Prophet Muhammad also always set an example of supervision for his people, regulating those who failed to carry out their duties and encouraging those who did good. Based on the statement above, the researcher concludes that the steps taken by parents are aimed at preventing children from being free to take various kinds of actions, especially in taking actions that are not in accordance with religious teachings.

### **Giving Punishment and Rewards**

Punishment is given to improve the behavior of children who are not good towards better and give punishment in accordance with the violations committed. Giving punishment must remain in the way of love, so the punishment given to children is not because they want to hurt the child's heart, not because they want to take revenge and so on. But punishing a child is for the good, and in the child's own interest for his future. In addition, children can also be rewarded when doing good so that children will be motivated to always do good. According to the statement above, the researcher concludes that the punishment method is the last method, if other methods have not been able to prevent children from committing violations, parents should give punishment to children appropriately and not hurt the child, for example by scolding or twisting the child's ear and giving punishment to the child. children who are right and teach children about awareness, learning for themselves to behave well and to stay away from bad behavior. Punishment is given so that children realize their mistakes and prevent violations. repeated so that it can make children more disciplined and obedient to their parents.

Meanwhile, the obstacles experienced in the implementation of the cultivation of religious values in early childhood. The role of the family in a child's life, especially in instilling religious values, namely the value of faith, morals, and worship values in children from an early age is very important in the family providing guidance and direction because early childhood development in modern times is not easy on the one hand, this era provides There are many advances in technology that allow children to get sophisticated facilities, but on the other hand technology can also have a negative impact if there is no supervision from the family. So that's where parents have obstacles in instilling religious values in early childhood, namely as follows:

### **Social Media Influence**

Social media is a communication medium in the current era that can make it easier for people to interact, share, and get all information through online media without being limited by distance and time. However, not infrequently social media has a negative impact on social media users, especially children. One of them is an online game that is played by most children. As stated by Suryani as a parent, that one of my obstacles in inculcating religious values, namely the value of worship and the moral values of children is social media, especially online games, for example when I order my child to pray he just says later I will pray, sometimes he even did not answer and did what I ordered because of the online game he was playing, because the online game that children always played, causing a lack of socialization between me and my child.

### **Social Environment**

The social environment is one of the family's obstacles in inculcating the values of aqidah, morals and values of children's worship. The social environment in question is the interaction between peers. As stated by Fitriani as one of the parents in Manajeng Village that my child's social environment or playing environment is one of my obstacles in instilling the values of worship and moral values of my children, where for example when I see a child making a mistake I reprimand him but when the child interacting in the play environment, namely interacting with peers who are less educated, then at that time children follow



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the things their peers do, for example lying and speaking impolitely. Based on the statement above, it can be concluded that the environment is very influential on the character of early childhood, if the child is in a good environment it can have a good influence on the child and vice versa if the child is in a bad environment it can have a bad influence as well. Parents must be smart in choosing the children's play environment in order to have a good influence on children because even though parents have provided guidance or direction to early childhood in the family environment, if the child's social environment is bad it can affect the child.

### CONCLUSION

Based on the results of research on the application of Islamic Counseling Guidance in instilling religious values in early childhood, namely: a). The application of Islamic Counseling Guidance in inculcating religious values in early childhood in the family, which uses five methods, namely: firstly giving advice to parents giving advice to gentle children, direction and guidance to children, children will make them better, be it in terms of religious values and moral values. Second, by setting an example, parents set an example for children who are good, have strong morals, understand the true spirit of religion, parents have tried to set a good example for children in inculcating religious values, b). Meanwhile, the obstacles faced by families in instilling religious values in early childhood are: first, because of the influence of social media, environmental factors and innate traits, children today prefer to play games so they tend to imitate what is inside. the game, the two social environments, children who hang out with peer themes who are less educated can then be influenced by their peers, the third trait, children who have a stubborn nature are likely to be inherited traits.

### REFERENCES

- 1) Alisuf, Sabri M. (2001). *Educational Psychology*. Jakarta: Science Guide for Jaya
- 2) Yuliani Nurani Sujiono, (2012). *Basic Concepts of Early Childhood Education* Jakarta Pt Index
- 3) Abdullah Nasih Ulwan. (2009). *Loves to Educate Children in Islam*. Darul Hikmah: Jogjakarta
- 4) Mansoor (2005). *Early Childhood Education*, Yogyakarta: Student Library
- 5) Prasetyono (2008), *Methods for Making Children Smart from an Early Age*, Yogyakarta: Garailmu
- 6) Tohirin (2009). *Guidance and Counseling in Schools and Madrasahs*. Jakarta: Rajawali Press
- 7) LN, Syamsu Yusuf (2006), *Foundation for Guidance and Counseling*. Bandung: PT. RosdaKarya Youth
- 8) Hellen (2002), *Guidance and Counseling Cet.I*; Jakarta: Ciputat Press
- 9) Winkel, W.S. (2006) *Guidance and Counseling in Secondary Schools*. Jakarta: PT. Grasindo.
- 10) Mappiare, Andi (2011). *Introduction to Counseling and Psychotherapy*. Jakarta: Rajawali Press
- 11) Tohirin (2009). *Guidance and Counseling in Schools and Madrasahs*. Jakarta: Rajawali Press
- 12) Tohirin (2009). *Guidance and Counseling in Schools and Madrasahs*. Jakarta: Rajawali Press
- 13) Elfi Mu'awanah and Rifa Hidayah (2014), *Islamic Guidance and Counseling*, Jakarta: YAPMA
- 14) Adz-dzaky, M. Hamdani Bakran. (2001). *Islamic Counseling and Psychotherapy*. Yogyakarta :Dawn of the New Library
- 15) Djumhur and Muh. Surya (2007), *Guidance and Counseling in Schools Bandung*: CP. Science
- 16) Arifin (2009). M.H. *Philosophy of Islamic Education*, Jakarta: Earth Literacy
- 17) Thoha, Chabib (2000). *Capita Selecta on Islamic Education*, Yogyakarta: Student Library
- 18) Buseri, Kamriani (2003). *Anthology of Islamic Education and Da'wah of Contemporary Practical Theoretical Thought*, Yogyakarta: UII Press
- 19) Jalaluddin. (2008). *Psychology of Communication*. Bandung: Rosdakarya Teenagers
- 20) Soemiarti Patmonodewo. (2003). *Pre-School Children's Education*. Jakarta:Rineka Create
- 21) Dewi Salma (2004). *Educational Technology Mosaic*. Jakarta: Prenada Media.
- 22) Mansoor (2005). *Early Childhood Education*, Yogyakarta: Student Library
- 23) Hasan, Maimunah (2009). *Early Childhood Education*, Yogyakarta : Diva Press
- 24) Hartati, Sofia (2005). *Learning Development in Children*, Jakarta: Ministry of National Education.
- 25) Arief, Armai (2002). *Introduction to Islamic Education Science and Methodology*, Jakarta: Ciputat Pers
- 26) Nasih Ulwan, Abdullah (2012). *Children's Education in Islam*, Solo: Insan Kamil.
- 27) Syamsuddin AB.(2018) Light of Living Family Parenting (Structural Functionalism and Symbolic Interactionism), Wade Group, Ponorogo
- 28) Darajat, Zakiah (2008). *Islamic Education*, Jakarta: Earth Literacy
- 29) Azmi, Muhammad (2006). *Early Childhood Moral Development*, Yogyakarta Belukar
- 30) Soelaeman (1987). *Basic Cultural Sciences*. Bandung: PT. ERESKO

## Method of Advancement Guidance on Planting Religious Value of Early Childhood in Bone

- 31) Lexy, J Moleong. (2008) *Qualitative Research Methodology*, Bandung: PT Remaja Rosdakarya
- 32) Amen, Muliati (2010). *Congregational Da'wah (Dissertation) Makassar*, PPS. UIN Alauddin
- 33) Syamsuddin AB (2017), *Fundamentals of Social Research Methods*, CV Wade Group, Ponorogo
- 34) <https://www.ijmra.in/v5i9/4.php>. DOI : <https://doi.org/10.47191/ijmra/v5-i9-04>
- 35) <https://www.ijmra.in/v5i9/7.php>. DOI : <https://doi.org/10.47191/ijmra/v5-i9-07>
- 36) <https://www.ijmra.in/v5i9/12.php>. DOI : <https://doi.org/10.47191/ijmra/v5-i9-12>
- 37) <https://www.ijmra.in/v5i8/18.php>. DOI : <https://doi.org/10.47191/ijmra/v5-i8-18>
- 38) <https://www.ijmra.in/v5i8/33.php>. DOI : <https://doi.org/10.47191/ijmra/v5-i8-33>



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## Risk and Return Analysis of Selected Flexi Cap Mutual Funds



Dr. Shruti Punj

<sup>1</sup>Associate Professor, Department of Commerce and Management, Mata Gujri Mahila Mahavidyalaya (Autonomous), Jabalpur, M.P.

**ABSTRACT:** Mutual funds are considered by the investors as an ideal investment for people who are not having huge sum of money and wish to invest in a portfolio of stocks wherein the share price is quite high. The investors may or may not be aware about the ways investment could be done in stock market and there are different investment options which are available in the market based on a different risk and return. Flexi cap mutual funds offer fund managers a freedom for investing across themes/ sectors and market capitalizations. In Flexi Cap mutual funds, the fund managers could invest on the basis of outlook of market. These schemes generally recommended to the moderate investors for creating wealth over long time period. This study is based on the evaluation of risk and return of different flexi cap mutual funds and compares the performance of these funds so as to find the best flexi cap fund based on different measures of return and risk. Based on the average of the monthly returns, though it is negative, the lowest average negative return is of Aditya Birla and Parag Parikh Flexi Cap mutual funds. The maximum times the highest return has been of Parag Parikh Flexi Cap mutual fund during different quarters. Based on the average Annual return, highest return is of Parag Parikh Flexi Cap mutual fund, followed by UTI Flexi Cap fund, SBI Flexi Cap fund, PGIM Flexi Cap fund and Aditya Birla Flexi Cap mutual fund.

**KEYWORDS:** Flexi Cap, Mutual Fund, Risk, Return

### 1. INTRODUCTION

#### 1.1 Mutual Funds

Mutual fund is considered to be a pool of funds which is managed by professional Fund Manager. It can be referred as a trust which collects money from different investors who have a common objective of investment and the amount could be invested in bonds, equities, money market instrument and various other forms of securities. The income which is generated from amount invested in a portfolio which is managed by the fund managers gets proportionately distributed after deduction of levies and expenses which are applicable in the particular mutual fund scheme. NAV or Net Asset Value is calculated based on the market value of the amount which is invested in a particular fund.

Mutual funds are being considered by the investors as an ideal investment for those people who are not having huge sums of money and wish to invest in a portfolio of stocks wherein the share price is quite high. Many a times, the investors are having a smaller amount to be invested in lump sum or monthly, the amount could be ranging between Rs. 500 to Rs. 5000 or much more. There are many mutual funds which allow the investors to invest even small sums of money and the amount could be invested for long term or short term. The investors may or may not be aware about the ways investment could be done in stock market and there are different investment options which are available in the market based on a different risk and return. The Asset Management Companies (AMC's) charge some small amount of fee which is deducted from the amount which is being invested by the investors. The fee which is charged by AMCs is regulated by Securities and Exchange Board of India (SEBI).

#### 1.2 Flexi Cap Mutual Funds

Flexi Cap Mutual Funds offer fund managers a freedom for investing across themes/ sectors and market capitalizations. In Flexi Cap mutual funds, the fund managers could invest on the basis of outlook of the market. These schemes generally recommended to the moderate investors for creating wealth over a long time period. The investors, who are interested to invest for a long term horizon which is of 5 to 7 years, should prefer to invest in such funds. As mentioned, fund managers invest in different stocks as per his or her own views. The investors should remain careful before investment in Flexi Cap Mutual Funds. The investors should

## Risk and Return Analysis of Selected Flexi Cap Mutual Funds

choose a mutual fund based on their risk tolerance level. There are some Flexi Cap Mutual Funds which are conservative as compared to others. Flexi Cap Mutual Fund should be chosen based on the temperament which suits the investors.

### 1.3 Advantages of Multi Cap Funds

- There is exposure towards all the key sectors of Indian economy
- It is ideal for investment for 5+ years
- Eliminates need to buy different funds for market coverage comprehensively

### 1.4 Selected Flexi Cap Mutual Funds

The below mentioned Flexi Cap mutual funds have been selected based on article published by Economic times titled “Best flexi cap mutual funds to invest in 2022”, dated 9 Sept. 2022. The selection of these funds is based on certain parameters i.e. Mean rolling returns, Consistency, Downside risk, Outperformance and Asset size.

- Parag Parikh Flexi Cap Fund
- UTI Flexi Cap Fund
- PGIM India Flexi Cap Fund
- Aditya Birla Sun Life Flexi Cap Fund
- SBI Flexi Cap Fund

### 1.5 Risk and Return Analysis

The return of selected mutual funds has been evaluated based on the following returns:

- Historical Returns
- Monthly returns
- Quarterly Returns
- Annual Returns
- SIP Returns

Based on different category of returns as mentioned above, the best Flexi Cap mutual fund has been selected.

The risk of selected mutual funds has been evaluated based on the following returns:

- Standard deviation
- Beta
- Sharpe ratio
- Jensen’s Alpha
- Treynor’s Ratio

Based on different category of risks as mentioned above, the best Flexi Cap mutual fund has been selected.

## 2. REVIEW OF LITERATURE

**Raju, Manjunath and Sachin (2018)** discussed in the research paper about various investment avenues which provides platform to investors which did not want any kind of risk while investing the hard earned money. Mutual funds investment has been regarded as lesser risky as compared to investment in stocks and is considered as a safer way for those investors who are risk averse. The main aim of the study was to understand the investor’s attitude towards mutual funds investment in the Davangere city. The sample that was considered in the study was 100 respondents. The objectives of the study were identification of attitude among investors related to mutual funds, understanding the factors that are responsible for selection of mutual funds while taking it as an investment option. The data was collected through primary source and the research design which was applied was descriptive. The test applied in the study was chi square. The researcher concluded that larger plan types have arisen through various financial resources in India. The study reveals that very few investors are aware about mutual funds and the low awareness level stops investors from investment in mutual funds.

**Samira and Sathyanaraynan (2018)** made an attempt to understand the preference of investors towards mutual funds. The study was based on primary and secondary data. The number of respondents in the study was 105 and the city from which data was collected was Salem. The objective of their study was to have an understanding of the level of awareness regarding mutual funds in Salem district, understanding the reasons which make investors select mutual funds and also studying the customer’s satisfaction level towards investment in mutual funds. Descriptive research methodology was applied in research. Chi square, Anova (one way) and correlation was applied for analysis of data. Customers could be advised that charges which come with investment could be regarded as cost effective. Companies could ensure to increase customers awareness about various features

## **Risk and Return Analysis of Selected Flexi Cap Mutual Funds**

related to investment like charges and risk. There exists negative correlation among variables. The researcher suggested that company should also monitor conduct of agents with the customers. Customers should also be intimated regarding documentation work and lapsed policies should also be regarded as very easy. Grievance handling process could be easier for customers. Many investors have invested so as to meet family expenses later.

**Muthalif and Munivel (2019)** said in the research paper that mutual funds are being regarded as an investment scheme which is being managed resourcefully and has defined investment objective. Mutual funds manager is solely responsible for investment of money collected from investors. The money which has been collected would be invested according to investor's choice related to the scheme which is preferred by investors. The study has covered customers' perception and awareness related to mutual funds in the district, Dharampuri. This study revealed that the Mutual funds are a trust which teams up savings of many investors who have a common economic goal. The design of research used in their study is descriptive. There exists a significant association among awareness level and mutual fund schemes, expected return and period for waiting. There is as such no difference found between risk levels, age, interest and return-risk trade off related to mutual fund. The researcher concluded that customer's need identification of best mutual funds management companies.

### **3. RESEARCH PROBLEM**

Mutual funds are considered to be the best investment option in current scenario. There are different types of mutual funds which are available in the capital market and they are being provided by different AMCs like SBI, PGIM, Parag Parikh, Aditya Birla, Kotak, HDFC, etc. The various types of mutual funds have a unique objective and it becomes difficult to understand where to invest as the fund managers are different, the risk and return also varies with each fund. Flexi cap mutual funds offer fund managers a freedom for investing across themes/ sectors and market capitalizations. In Flexi Cap mutual funds, the fund managers could invest on the basis of outlook of market. It is bit difficult to understand which is the best Flexi Cap mutual fund, without considering the return and risk of these funds. This study is based on the evaluation of risk and returns of different flexi cap mutual funds and compare the performance of these funds so as to find the best flexi cap fund based on different measures of return and risk.

### **4. OBJECTIVES**

- To evaluate returns of selected Flexi Cap Mutual Funds
- To compare returns of selected Flexi Cap Mutual Funds
- To evaluate the risk of investing in selected Flexi Cap Mutual Funds

### **5. RESEARCH METHODOLOGY**

The research design considered in this study is Analytical in nature, wherein different measures of risk and return have been considered for evaluating selected Flexi Cap mutual funds. The following Flexi Cap mutual funds have been selected based on article published by Economic times titled "Best flexi cap mutual funds to invest in 2022", dated 9 Sept. 2022. The selection of these funds is based on certain parameters i.e. Mean rolling returns, Consistency, Downside risk, Outperformance and Asset size. The selected mutual funds are Parag Parikh Flexi Cap Fund, UTI Flexi Cap Fund, PGIM India Flexi Cap Fund, Aditya Birla Sun Life Flexi Cap Fund and SBI Flexi Cap Fund. The return of selected mutual funds has been evaluated based on Historical Returns, Monthly returns, Quarterly Returns, Annual Returns and SIP Returns. The risk of selected mutual funds has been evaluated based on Standard deviation, Beta, Sharpe ratio, Jensen's Alpha and Treynor's Ratio.

### **6. DATA ANALYSIS**

The return of selected mutual funds has been evaluated based on Historical Returns, Monthly returns, Quarterly Returns, Annual Returns and SIP Returns. The data about the selected Flexi Cap mutual fund has been extracted from moneycontrol.com website and based on different category of returns as mentioned above, the best Flexi Cap mutual fund has been selected. The risk of selected mutual funds has been evaluated based on Standard deviation, Beta, Sharpe ratio, Jensen's Alpha and Treynor's Ratio. Based on different category of risks as mentioned above, the best Flexi Cap mutual fund has been selected.

## Risk and Return Analysis of Selected Flexi Cap Mutual Funds

### 6.1 Historical Returns

**Table 1: Historical Returns of Selected Flexi Cap Mutual Funds**

Scheme Name	Parag Parikh Flexi Cap Fund – GrowthFund	UTI Flexi Cap Fund – GrowthFund	PGIM India Flexi Cap Fund – GrowthFund	Aditya Birla Sun Life Flexi Cap Fund - Regular Plan – GrowthFund	SBI Flexi Cap Fund - Regular Plan – GrowthFund
Plan	Regular	Regular	Regular	Regular	Regular
Category Name	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund
Crisil Rank	-	2	5	3	4
AuM (Cr)	25,996.18	26,503.19	5,081.26	16,102.71	16,208.20
1W	-1%	0%	0%	0%	0%
1M	-3%	-3%	-4%	-2%	-3%
3M	6%	10%	9%	9%	8%
6M	-7%	-4%	-6%	-5%	-4%
YTD	-9%	-12%	-10%	-6%	-3%
1Y	-5%	-10%	-8%	-7%	-3%
2Y	21%	22%	26%	23%	25%
3Y	23%	19%	23%	16%	14%
5Y	16%	14%	14%	10%	10%
10Y	-	15%	-	15%	15%

Source – [www.moneycontrol.com](http://www.moneycontrol.com)

The figures in the above table represent data as on 03.10.2022. Rank given by CRISIL to the selected funds has been mentioned above; the highest rank has been given to UTI Flexi Cap Mutual Fund. The return of 1 week is either 0 or -1% for all the selected funds. The return of 1 month is negative for all the funds; still the highest return is of Aditya Birla Sun Life Flexi Cap Fund. The return for last 3 months has been positive in all the funds, out of which the highest has been of UTI Flexi Cap Mutual Fund. Yield till date has been negative in all the funds, still the lowest have been SBI Flexi Cap mutual fund. Based on 1 year return, it is negative in all the funds; still the lowest has been of SBI Flexi Cap mutual fund. On comparing 2 year return, the highest return is of PGIM Flexi Cap fund i.e. 26%. On comparing 3 year return, the highest return is of PGIM Flexi Cap fund and Parag Parikh Flexi Cap mutual funds i.e. 23%. On comparing 5 year return, the highest return is of Parag Parikh Flexi Cap mutual funds i.e. 16%. Two funds were not introduced before 10 years; hence the 10 year return is not available for Parag Parikh and PGIM Flexi Cap mutual funds. The 10 year return is same for the other funds, UTI Flexi Cap Mutual Fund, Aditya Birla Sun Life Flexi Cap Fund and SBI Flexi Cap mutual fund.

### 6.2 Monthly Returns

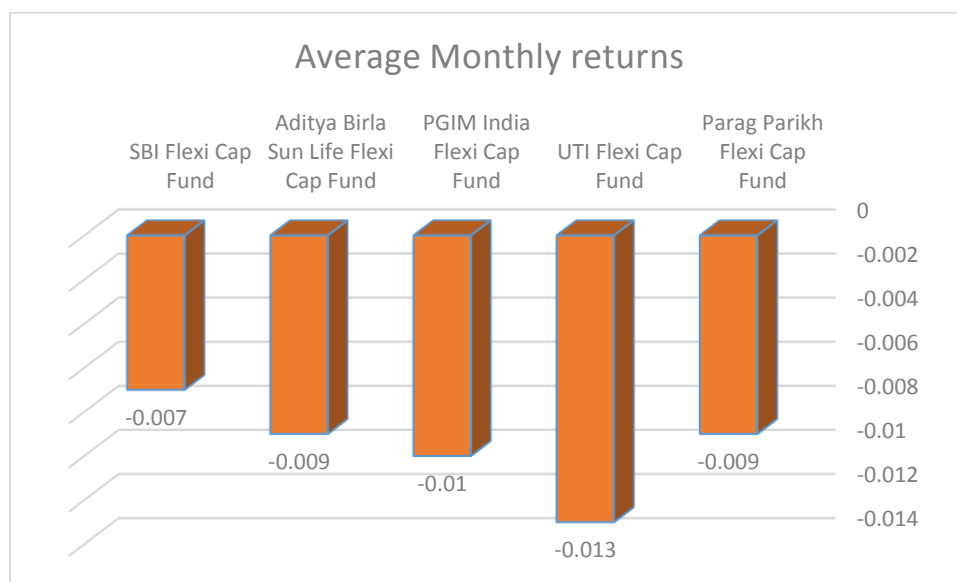
**Table 2: Monthly Returns of Selected Flexi Cap Mutual Funds**

Scheme Name	Parag Parikh Flexi Cap Fund – Growth Fund	UTI Flexi Cap Fund – Growth Fund	PGIM India Flexi Cap Fund – Growth Fund	Aditya Birla Sun Life Flexi Cap Fund - Regular Plan – Growth Fund	SBI Flexi Cap Fund - Regular Plan – Growth Fund
Plan	Regular	Regular	Regular	Regular	Regular
Category Name	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund
Crisil Rank	-	2	5	3	4
MTD	0%	-1%	-1%	-1%	-1%
Sep'22	-3%	-2%	-3%	-1%	-2%
Aug'22	1%	3%	3%	2%	2%
Jul'22	7%	10%	9%	8%	8%
Jun'22	-5%	-5%	-5%	-5%	-4%
May'22	-2%	-6%	-5%	-5%	-3%
Apr'22	-4%	-3%	-5%	-4%	-3%

## Risk and Return Analysis of Selected Flexi Cap Mutual Funds

Mar'22	4%	2%	3%	4%	4%
Feb'22	-6%	-6%	-7%	-5%	-5%
Jan'22	-4%	-6%	-2%	-2%	0%
Dec'21	3%	1%	3%	2%	2%
Nov'21	-1%	-2%	-3%	-6%	-5%
Avg.	-0.009	-0.013	-0.010	-0.009	-0.007

Source – [www.moneycontrol.com](http://www.moneycontrol.com)



The above table based on Monthly return has been created through moneycontrol website. The table represents monthly return for every month starting from Nov. 2021 to Sept. 2022. The return has been computed based on the NAV which the Mutual fund had in the previous month. There is not much variation in the average return of all the selected Flexi Cap mutual funds. During November 2021, January, February, April, May, June and September 2022, the return in all the selected Flexi Cap mutual fund has been negative as compared to the previous month. During the remaining months i.e. Dec. 2021, highest return has been given by Parag Parikh Flexi Cap and PGIM Flexi Cap Funds. During March 2022, the highest return has been given by Parag Parikh, Aditya and SBI Flexi Cap mutual fund. During July 2022, UTI Flexi Cap mutual fund has given highest return. During Aug. 2022, highest return is given by UTI and PGIM Flexi Cap Mutual fund.

### 6.3 Quarterly Returns

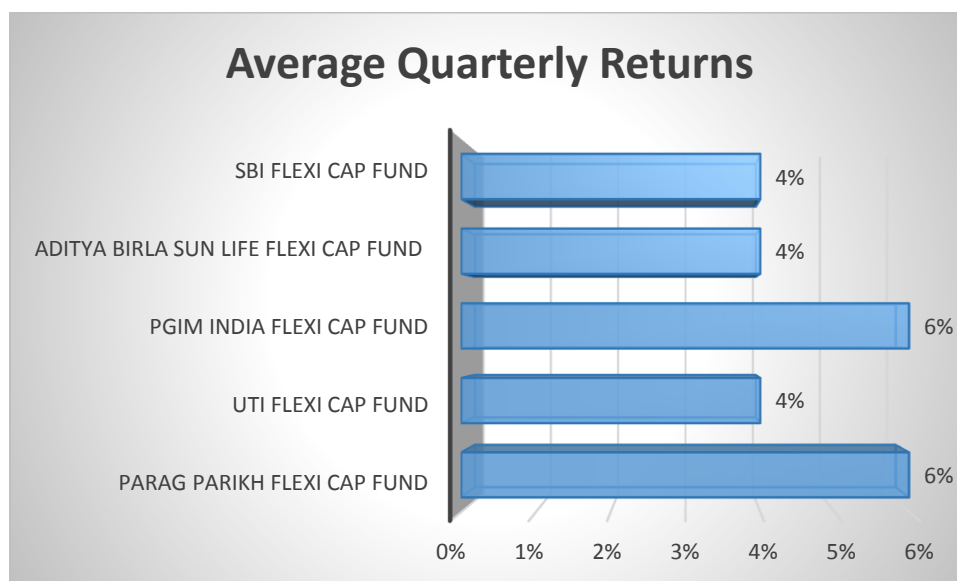
**Table 3: Quarterly Returns of Selected Flexi Cap Mutual Funds**

Scheme Name	Parag Parikh Flexi Cap Fund – Growth Fund	UTI Flexi Cap Fund – Growth Fund	PGIM India Flexi Cap Fund – Growth Fund	Aditya Birla Sun Life Flexi Cap Fund – Regular Plan – Growth Fund	SBI Flexi Cap Fund – Regular Plan – Growth Fund
Plan	Regular	Regular	Regular	Regular	Regular
Category Name	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund
Crisil Rank	-	2	5	3	4
QTD	0%	-1%	-1%	-1%	-1%
Q2'22	-12%	-14%	-13%	-13%	-11%
Q1'22	-4%	-9%	-5%	-2%	0%
Q4'21	5%	2%	2%	-1%	0%
Q3'21	15%	14%	13%	11%	10%
Q2'21	12%	8%	14%	10%	8%
Q1'21	7%	6%	7%	5%	8%
Q4'20	12%	27%	22%	23%	23%

## Risk and Return Analysis of Selected Flexi Cap Mutual Funds

Q3'20	17%	14%	15%	10%	7%
Q2'20	29%	21%	31%	23%	20%
Q1'20	-22%	-24%	-25%	-29%	-28%
Avg.	6%	4%	6%	4%	4%

Source – [www.moneycontrol.com](http://www.moneycontrol.com)



The above table has been extracted from [moneycontrol.com](http://moneycontrol.com), the data has been considered for four quarters of 2020, four quarters of 2021 and two quarters of 2022. During Quarter 1 of 2020, Quarter 1 of 2022 and Quarter 2 of 2022, the quarterly returns have been negative. During Q2 of 2020, highest return was of PGIM Flexi Cap Fund. During Q3 of 2020, the highest return is of Parag Parikh Flexi Cap fund. During Q4 of 2020, highest return is of UTI Flexi Cap mutual fund. During Q1 of 2021, highest return is of Parag Parikh and PGIM Flexi Cap mutual fund. During Q2 of 2021, highest return is of PGIM Flexi Cap mutual fund. During Q3 and Q4 of 2021, highest return is of Parag Parikh Flexi Cap mutual fund. Overall highest return has been of Parag Parikh and PGIM Flexi Cap mutual funds.

### 6.4 Annual Returns

Table 4: Annual Returns of Selected Flexi Cap Mutual Funds

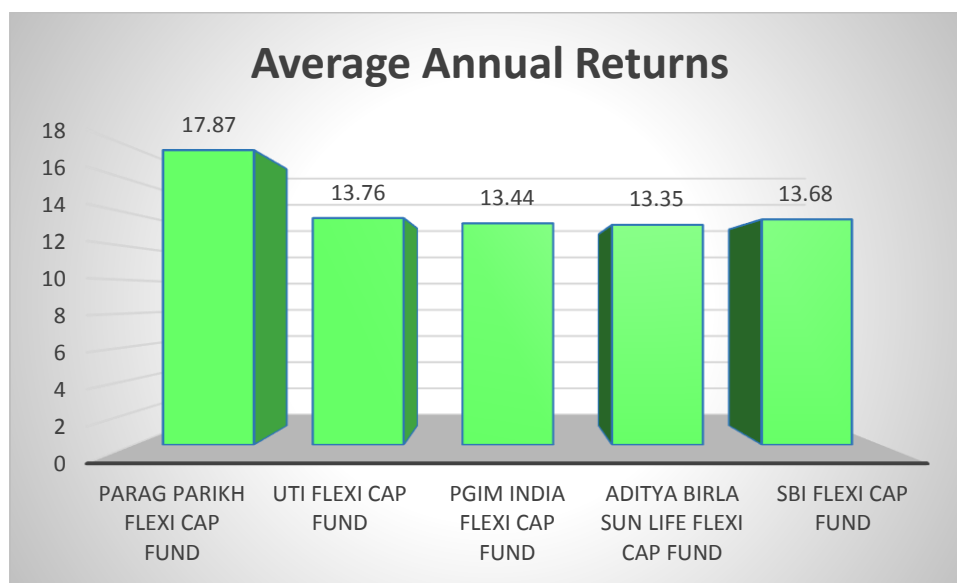
Scheme Name	Parag Parikh Flexi Cap Fund – Growth Fund	UTI Flexi Cap Fund – Growth Fund	PGIM India Flexi Cap Fund – Growth Fund	Aditya Birla Sun Life Flexi Cap Fund - Regular Plan – Growth Fund	SBI Flexi Cap Fund - Regular Plan – Growth Fund
Plan	Regular	Regular	Regular	Regular	Regular
Category Name	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund
Crisil Rank	-	2	5	3	4
YTD	-9%	-12%	-10%	-6%	-3%
2021	44%	32%	42%	27%	29%
2020	33%	31%	36%	14%	13%
2019	15%	12%	10%	9%	11%
2018	0%	4%	-7%	-3%	-5%
2017	29%	30%	37%	34%	37%
2016	4%	1%	-1%	15%	5%
2015	9%	1%	1%	3%	9%
2014	44%	47%	-	56%	56%
2013	11%	7%	-	6%	4%



## Risk and Return Analysis of Selected Flexi Cap Mutual Funds

<b>2012</b>	-	32%	-	36%	38%
<b>2011</b>	-	-19%	-	-29%	-31%
<b>Avg.</b>	17.87	13.76	13.44	13.35	13.68

Source – [www.moneycontrol.com](http://www.moneycontrol.com)



Annual returns of the selected Flexi Cap mutual funds have been analyzed in the above table. During 2011, the returns of the all the selected funds has been negative. During 2012, the highest return has been of SBI Flexi Cap fund. During 2013, the highest return is of Parag Parikh Flexi Cap fund. During 2014, highest return is of Aditya Birla and SBI Flexi Cap mutual fund. During 2015, the highest return is of Parag Parikh and SBI Flexi Cap funds. During 2016, the highest return is of Aditya Birla Flexi Cap fund. During 2017, the highest return is of PGIM and SBI Flexi Cap funds. During 2018, the highest return is of UTI Flexi Cap fund. During 2019, the highest return is of Parag Parikh Flexi Cap fund. During 2020, the highest return is of PGIM Flexi Cap fund. During 2021, the highest return is of Parag Parikh Flexi Cap fund. Based on the average Annual return, highest return is of Parag Parikh Flexi Cap mutual fund.

### 6.5 SIP Returns

Table 5: SIP Returns of Selected Flexi Cap Mutual Funds

Scheme Name	Parag Parikh Flexi Cap Fund – Growth Fund	UTI Flexi Cap Fund – Growth Fund	PGIM India Flexi Cap Fund – Growth Fund	Aditya Birla Sun Life Flexi Cap Fund - Regular Plan – Growth Fund	SBI Flexi Cap Fund - Regular Plan – Growth Fund
<b>Plan</b>	Regular	Regular	Regular	Regular	Regular
<b>Category Name</b>	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund
<b>Crisil Rank</b>	-	2	5	3	4
<b>AuM (Cr)</b>	25996.18	26503.19	5081.26	16102.71	16208.20
<b>1Y</b>	-4%	-4%	-4%	-2%	-1%
<b>2Y</b>	9%	5%	8%	7%	10%
<b>3Y</b>	32%	26%	34%	25%	27%
<b>5Y</b>	57%	46%	56%	37%	39%
<b>10Y</b>	-	113%	-	107%	110%

Source – [www.moneycontrol.com](http://www.moneycontrol.com)

The table is based on SIP returns and indicates the returns of 1 year, 2 years, 3 years, 5 years and 10 years. The return during 1 year has been negative in all the selected mutual funds. The highest return during last 2 years has been of SBI Flexi Cap mutual

## Risk and Return Analysis of Selected Flexi Cap Mutual Funds

fund, during last 3 years the highest return was of Parag Parikh Flexi Cap mutual fund. During 5 years highest returns has been given by PGIM flexi cap mutual fund. During last 10 years, highest returns have been given by UTI Flexi Cap mutual fund.

### 6.6 Risk

**Table 6: Risk of Selected Flexi Cap Mutual Funds**

Scheme Name	Parag Parikh Flexi Cap Fund – Growth Fund	UTI Flexi Cap Fund – Growth Fund	PGIM India Flexi Cap Fund – Growth Fund	Aditya Birla Sun Life Flexi Cap Fund - Regular Plan – Growth Fund	SBI Flexi Cap Fund - Regular Plan – Growth Fund
Plan	Regular	Regular	Regular	Regular	Regular
Category Name	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund
Crisil Rank	-	2	5	3	4
Category	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund	Flexi Cap Fund
AuM (Cr)	25996.18	26503.19	5081.26	16102.71	16208.20
Standard Deviation	16.88	19.92	20.82	21.58	19.72
Beta	0.65	0.89	0.94	0.98	0.90
Sharpe Ratio	0.95	0.68	0.83	0.51	0.49
Jenson's Alpha	7.51	2.95	4.95	-2.66	-2.40
Treynor's Ratio	0.25	0.15	0.18	0.11	0.11

Source – [www.moneycontrol.com](http://www.moneycontrol.com)

The risk in this study has been evaluated based on Standard deviation, Beta, Sharpe ratio, Jenson's Alpha and Treynor's Ratio. The highest value of Beta is of Aditya Birla Flexi Cap mutual fund, it indicates that when benchmark of these funds move by 1%, Aditya Birla Flexi Cap mutual fund also moves 0.98 which is approx. 1. Standard deviation of Aditya Birla Flexi Cap mutual fund is high, it measures the variation from its mean return and this indicates that Aditya Birla Flexi Cap mutual fund is the riskiest among all the selected mutual funds. Sharpe ratio measures risk-adjusted return and it is calculated by subtraction of risk free rate from the return which the funds provide and this is divided by standard deviation. The highest Sharpe ratio is of Parag Parikh Flexi Cap mutual fund and this indicates that it is more risky among all the selected Flexi Cap mutual fund. Alpha represents best managed funds by the fund manager and hence positive performance is good and it has been the best managed by Parag Parikh Flexi Cap mutual fund. Treynor's ratio represents risk-adjusted measurement of return which is based on systematic risk. It indicates the return a mutual fund provides for the amount of risk assumed in the mutual fund. A high Treynor's ratio is considered to be good and the highest Treynor's ratio is of Parag Parikh Flexi Cap mutual fund. Overall considering all the risk factors, the best mutual fund is Parag Parikh Flexi Cap mutual fund as the Sharpe ratio, Jenson's Alpha and Treynor's Ratio is the highest among them and the standard deviation and Beta is lowest among all the selected Flexi Cap mutual funds.

## 7. FINDINGS

- **Historical Returns** - Based on Historical returns, the highest returns have been given by PGIM Flexi Cap mutual fund based and this has been analyzed by ignoring the negative returns and focusing on only the positive returns.
- **Monthly Returns** - Based on Monthly return starting from Nov. 2021 to Sept. 2022, the best fund was found to be is Parag Parikh Flexi Cap which is represented by Dec. 2021 and March 2022. Based on the average of the monthly returns, though it is negative, the lowest average negative return is of Aditya Birla and Parag Parikh Flexi Cap mutual funds.
- **Quarterly Returns** - The data for quarterly returns has been considered for four quarters of 2020, four quarters of 2021 and two quarters of 2022. Overall highest return has been of Parag Parikh and PGIM Flexi Cap mutual funds. The maximum times the highest return has been of Parag Parikh Flexi Cap mutual fund during different quarters.
- **Annual Returns** - Based on the average Annual return, highest return is of Parag Parikh Flexi Cap mutual fund, followed by UTI Flexi Cap fund, SBI Flexi Cap fund, PGIM Flexi Cap fund and Aditya Birla Flexi Cap mutual fund.
- **SIP Returns** - The highest return during last 2 years has been of SBI Flexi Cap mutual fund, during last 3 years the highest return was of Parag Parikh Flexi Cap mutual fund. During 5 years highest returns has been given by PGIM flexi cap mutual fund. During last 10 years, highest returns have been given by UTI Flexi Cap mutual fund.
- **Risk** - Overall considering all the risk factors, the best mutual fund is Parag Parikh Flexi Cap mutual fund as the Sharpe ratio, Jenson's Alpha and Treynor's Ratio is the highest among them and the standard deviation and Beta is lowest among all the selected Flexi Cap mutual funds.

## Risk and Return Analysis of Selected Flexi Cap Mutual Funds

### 8. CONCLUSION

Flexi Cap Mutual funds are funds in which the fund manager can choose stocks of companies which are under different segments like large cap, mid cap, small cap etc. Flexi Cap mutual funds have been selected based on article published by Economic times. The selection of these funds is based on certain parameters i.e. Mean rolling returns, Consistency, Downside risk, Outperformance and Asset size. Historical Returns - Based on Historical returns, the highest returns have been given by PGIM Flexi Cap mutual fund based and this has been analyzed by ignoring the negative returns and focusing on only the positive returns. Based on the average of the monthly returns, though it is negative, the lowest average negative return is of Aditya Birla and Parag Parikh Flexi Cap mutual funds. The maximum times the highest return has been of Parag Parikh Flexi Cap mutual fund during different quarters. Based on the average Annual return, highest return is of Parag Parikh Flexi Cap mutual fund, followed by UTI Flexi Cap fund, SBI Flexi Cap fund, PGIM Flexi Cap fund and Aditya Birla Flexi Cap mutual fund. Overall considering all the risk factors, the best mutual fund is Parag Parikh Flexi Cap mutual fund as the Sharpe ratio, Jensen's Alpha and Treynor's Ratio is the highest among them and the standard deviation and Beta is lowest among all the selected Flexi Cap mutual funds.

### REFERENCES

- 1) Muthalif Dr. R. Abdul and Munivel K. (2019), "A Study On Customers' Awareness and Perception Towards Mutual Funds in Dharmapuri District", International Journal of Scientific Research and Review, Volume 8, Issue 1, 2019, ISSN NO: 2279-543X pp 483-487
- 2) Samira M. and Sathyanaraynan Dr. K. S. (2018), "A Study on investor's preference towards Mutual Funds with Special Reference to Salem district", International Journal of Pure and Applied Mathematics, Volume 118 No. 20 2018, 657-665
- 3) Raju Dr. J K, Mr. Manjunath B R, Mr. Sachin H (2018) "A study on investors attitude towards mutual fund as an investment avenue", Journal of Emerging Technologies and Innovative Research (JETIR), February 2018, Volume 5, Issue 2 JETIR (ISSN-2349-5162)

### WEBSITES

- 1) <https://economictimes.indiatimes.com>
- 2) [www.etmoney.com](http://www.etmoney.com)
- 3) [www.financialexpress.com](http://www.financialexpress.com)
- 4) [www.moneycontrol.com](http://www.moneycontrol.com)



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## The Importance of Women's Self-Help Groups in Promoting Financial Inclusion in Bihar



Haridarshan Singh<sup>1</sup>, Mohd Hassan<sup>2</sup>

<sup>1,2</sup>Assistant Professor, University of Delhi

**ABSTRACT:** Women's socioeconomic independence was significantly impacted by their involvement in self-help groups (SHGs). By "women's emancipation," we imply a procedure wherein women actively question traditional conventions in order to successfully advance their well-being. In Bihar state, this research attempted to tackle the issue of women's emancipation via self-help groups. Over 1 million Didis (recipients) are continually working to improve their lives by engaging with SHGs since SHGs nowadays are supporting women's capability in developing financial inclusivity, constructing community institutions, and associating with connected activities. Financing must be accessible to those required in India in order to break the pattern of deprivation and enable women to make significant contributions to the nation's inclusive progress. India's current rural credit structure doesn't meet the needs of the poorest people who want to move forward.

**KEYWORDS:** Jeevika, Self-Help Group, Financial Inclusion, Women's Empowerment

### INTRODUCTION

A Self-Help Group is a tiny, economically uniform lineage community, and within this community, the rural deprived voluntarily come forward to keep a modest sum of cash frequently. This cash is placed in a pool of funds for beneficiary immediate situations, and the community also decides whether or not to offer collateral-free loans. Furthermore, in the rural parts of the regions, the Self-Help Group is working on problems related to the reduction of deprivation and the emancipation of the poor, as well as healthcare, malnutrition, and other assistance, with a particular focus on women. The importance of women's emancipation in connection to inclusive growth has been a primary focus of this research. The growth of any nation's economy is essential to the country's inclusive growth. According to the United Nations (UN), elevating the position of women is not only helpful to the individual women who experience it, but it is also advantageous to the overall social and economic growth of society. If India's enormous population of women are able to make a positive contribution to the country's growth, they will feel more powerful and their lives will become more streamlined.

### The Beginning of the Self-Help Group Movement

SHGs may trace their roots back to the Grameen Bank of Bangladesh, which was established by Mohammad Yunis in 1976. The conceptualization of India has also helped to mature the role that SHGs play in society. This is where the idea of aid clusters first emerged. In the 90s, the Self-Help Group (SHG) programme was established as a result of regulations issued by the Reserve Bank of India that encouraged financial institutions to lend to unofficial SHG groups. Additionally, the programme was heavily encouraged by the banking institution for Agriculture and Rural Development (NABARD). NABARD began an initiative to link assistance organisations with financial institutions, and as a result, a concentrated effort has been made since 1991 to connect 500 SHGs with financial institutions. The agrarian banks, co-operatives, and civil society organisations in India are now the ones responsible for spreading the word about the assistance teams. The primary objective of the study is to foster a fresh perspective on the view that women in the region of Bihar have about their own level of independence and the part that self-help organisations play in the community. People think of SHGs as a type of rural banking. They usually have between 10 and 20 members, most of whom are women.

Bihar's Own Help Group (Self-Help Group) Bihar has evolved into the first state to have 10 lakh women-led self-help groups. Authorities have stated that all these SHGs, which are part of the Jeevika programme, have assisted over 45 lakh families during the COVID-19 pandemic. Bihar has also become the first state to have 10 lakh women-led self-help groups. The elimination of

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deprivation is the primary objective of this initiative, and in this respect, an alleviating deprivation programme backed by the World Bank has been running in the province since 2007 to empower women and teach them how to become financially independent. According to data provided by the Centre for Monitoring Indian Economy, the jobless rate in Bihar is 16.0% as of December 2021. The Jeevika model has significantly contributed to the objective of ensuring or promoting the economic incorporation and emancipation of women. In the course of the COVID-19 pandemic, it is no wonder that the employees at Jeevika were of great assistance. Furthermore, the female employees of Jeevika worked as bank employees, ensuring that over Rs. 543 crore in transactions were completed using POS devices to bring financial services to the doorsteps of those who needed them in the most remote areas of the region. In the same amount of time, it was able to reach nearly 1.09 crore families in order to raise awareness and provide assistance for rescue efforts, work on rural livelihoods, work on cleanliness, and other related activities. For the purpose of fostering sustainable livelihoods and expanding access to monetary resources for women-led organisations and businesses. A new chapter in the story of women's emancipation has been written by the approximately 1.20 million women who have joined the nation's 10 lakh self-help groups (SHGs), and this new chapter is plainly evident in remote regions. In addition to ensuring that stronger females have access to financial opportunities, the state has also been utilising the skills of these females in a variety of social activities and projects that have been carried out by the educational, healthcare, and welfare ministries.

### **A LITERATURE REVIEW**

#### **Women's Empowerment**

Undoubtedly, one of the most important focuses of the United Nations' Millennium Development Goals is to ensure that women are given equal rights and opportunities. Among the most important objectives is to improve the position of women and make it easier for them to participate in the overall process of social advancement (Varghese, 2011). SHGs have also significantly energised female members and been attributed to enlarged personality and optimistic behavioural transformation in the post-SHG time frame as in comparison to the pre-SHG timespan (Sushil Kumar Mehta et al., 2011). According to Rama Krishna and Krishna Murthy (2003), the inclusivity position of women as attendees, policymakers, and recipients in the progressive, financial, sociocultural, and historical aspects of life has improved as a result of SHGs. SHGs have also helped (Palanichamy, 2011). There seems to be proof that certain people are able to become more self-sufficient as a result of their involvement in the project at a personal level (Sundaram, 2012). The growth and advancement in all aspects of life, especially in remote regions, The provision of chances for self-employment as a means of coping with the current economic predicament is one of the key ways in which self-help groups contribute to the enhancement of individuals' sense of self-worth and ability for personal growth. Additionally, it enhances the ability for judgement in a variety of societal, diplomatic, financial, medical, and academic matters, and it mobilises women to fight against a variety of forms of oppression against them within the context of their society and community as a whole (Heena and Tabasum, 2013).

#### **Social Empowerment**

All of the studies conducted by Jaya S. Anand (2004), NCAER (2008), and Sarumathi and Mohan (2011) found that the interference of SHGs enhanced living conditions, engrained benefit and debt repayment practises, and decided to bring about an optimistic shift in mindset and interpersonal skills, all of which led to increased levels of emancipation for the members of the SHGs. There has been a drop in severe undernourishment as well as in newborn and newborn fatalities and early adult fatalities. The number of students who enrol in schools and the consistency with which they participate have both increased. Additionally, when SHGs solve problems such as the establishment of Amravati (baby care centre), it has produced a good influence on the schooling of female children (Joy Deshmukh-Ranadive 2004). The most remarkable change was the rise in people's levels of self-assurance and their willingness to freely address problems and express themselves (Darshana, 2008). The practise of empowering is characterised by a growth in both personality and the ability to make decisions within the context of the household (Sundaram, 2012), as well as an improvement in one's ability to communicate (Kondal, 2014). There has been a rise in the number of instances in which women make their own judgments about their expenditure and savings of cash (Suchetha Shukla, 2004; Selvaraj, 2005). In particular, the agricultural section, various family events, and other family events (Kondal, 2014).

#### **Social Service Activity Participation**

A remarkable majority of females (86%) revealed voting in the most recent poll, and 74% reported being pressured by their spouses or forced to vote for a particular applicant at the Gram Panchayat stage. SHG involvement has enhanced daycare and emergency contraception use amongst participants (Hadi, 2001 and 2002). (Mark et al., 2003). SHGs improved access to administrative authorities, involvement in development projects, and knowledge of land ownership (Rama Krishna and Krishna Murthy, 2003). Research published in Bangladesh and India has demonstrated the benefits of SHGs in decreasing marginalisation

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(Mohindra et al., 2008). In the 20 years following 1970, a plan that educated women self-help group representatives as healthcare personnel, started education programs, and offered money for domestic medical crises resulted in a decrease in child deaths from 176 to 19 per 1000; a decrease in fertility rate from 40 to 20 per 1000; pretty unanimous connectivity to prenatal care, smooth delivery, and immunization; and a decrease in percentages of undernutrition from 40 percent to less than 5 percent. (Rosato et al., 2008).

### **Economic and Social Empowerment**

According to Rama Krishna and Krishna Murthy (2003), SHGs have a favourable effect on social and financial liberation and contribute to the transformation of regional livelihoods by boosting the financial standing of every single SHG personnel in remote regions, in addition to offering opportunities for female equality. Accordingly, SHGs have an important part in women's rights, microcredit via bank links in cooperation with nongovernmental organizations, and contributing to regional livelihoods (Arunkumar, 2005). Furthermore, unlike in other countries such as Africa and Southeast Asia, rural women's financial, diplomatic, and health situations improve significantly after joining SHGs in India, specifically in the state of South India (Anuppalle and Reddy, 2008).

### **Microcredit's Health and Finance**

Anuppalle and Reddy (2008) found that, in contrast to other regions like Africa and Indonesia, India, specifically Bihar, showed a greater increase in the wellbeing of village women after connecting with SHGs. Recent findings from throughout the world suggest that microcredit programmes have improved cleanliness, nutrition, and wellness in addition to cash gains (Ahnquist et al., 2012 and Subramanyam et al., 2011). Women have recently benefited significantly from participating SHGs since they may now take out loans from the community to pay for their wellness expenses (Saha et al., 2013).

### **Benefits from Income Generating Activities**

Joy Deshmukh-Ranadive (2004) and Bharatamma et al. (2006) both note that SHG has enhanced prospects for generating income (2006). Women have profited greater from the linking scheme in terms of career chances than male members have, going from 314 people per week in a pre-SHG context to 400 people per week in a post-SHG scenario (NCAER, 2008; Nalini et al., 2013). Indian participants who have been active in SHGs for a prolonged period tend to rely less on farming as a primary source of earnings and more on sources like cattle revenue. Positive effects of NGO education on property building (Swain and Adel Varghese, 2009). Boosting home entrepreneurship, raising non-farm job options for the deprived, empowering women, and strengthening community exposure to certain other business services are all important goals (Swamy V and Tulasimala BK 2013).

### **Rural Households' Dietary Pattern and Nutritional Status**

Families' enhanced food security as a consequence of collective engagement Joy (2004) The Deshmukh-Ranadive SHGs aided in enhancing the nutritional intake and food intake of the underprivileged. Beneficial effects on dietary consumption in programme regions; overall variability of effects across users of current and freshly established units; in addition to quasi-participant (Deininger and Liu, 2009) the average cost of food for each household has climbed from Rs. 4849 before self-help groups to Rs. 8216 after self-help group effects, marking an uplift of 69.41%. 2013 (Swamy and Tulasimala).The overwhelming majority of Muslim and Hindu women (84.4% and 89.0%, respectively) took an active part in dietary decision-making (Jeejebhoy et al., 2001).

### **OBJECTIVES OF THE STUDY**

To investigate the function of self-help groups in improving rural women's access to financial services

- To study the income and benefits provided by the Jeevika programme
- To investigate the effectiveness of self-help groups as a method for empowering women in Bihar and creating jobs.
- To increase rural women's understanding of financial stability and empowerment

The growth of rural communities via self-help groups and the government of India's Aajeevika Mission programme is another topic covered in the current research. In the current study, the researchers will examine how Self-Help Groups affect women's access to financial services and independence. To do this, the researcher will look at books, magazines, and other written materials that tell the stories of successful women.

### **METHODOLOGY**

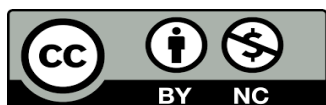
The major focus of the study is on secondary sources of data. The effect and progression of self-help groups in Bihar is the primary focus of this research. Data from secondary sources, including financial reports, statistical supplements, and operational statistics of Bihar State, as well as the government website, has been gathered. Documents that have been released include those published by the government as well as other writings such as research papers published in journals that are accessible.

### CONCLUSION

According to the data, self-help groups have had a stronger influence on the recipients' social and financial facets. Approximately 24 lakh households that depend on non-agricultural activities for their livelihoods are now economically independent. With the Jeevika programme as a guide, Bihar can go a long way toward achieving full self-sufficiency—something that India longs for and which Bihar has shown is feasible. Without a doubt, this was a really wise move. All that is required is the integration of self-help group operations and the provision of additional chances for growth and quality-of-life improvement, which also serve as sources of jobs in rural regions. The state economy would benefit even more from it, and the populace would become more efficient.

### REFERENCES

- 1) Centre for Monitoring Indian Economy Pvt. Ltd. (n.d.). India's unemployment rate <https://unemploymentinindia.cmie.com/>
- 2) Koteeswari, N. (2014). Self-help groups and household economic development: a case of women's self-help groups in Tamilnadu, India. The University of Madras <http://hdl.handle.net/10603/203677>
- 3) Ahnquist, J., Wamala, S.P, and Lindstrom, M. 2012. Social determinants of health—A question of social or economic capital. Interaction effects of socioeconomic factors on health outcomes 74(6):930-9. *Social Science and Medicine*.
- 4) Anila, A.A., 2012. A Study on the Socio-Economic Condition of Self-Help Group Members in Tirunelveli District, Tamil Nadu. 2 (2): 216-224.
- 5) Anuppalle and Reddy, R. 2008. Self-help groups in India: A catalyst for women's economic empowerment and poverty eradication. The 33rd Global Conference of ICSW, tours (France). June 30th-July 4th.
- 6) Bharatamma, G.U., Angadi, J.G., Hirevenkandondar, L.V., and Natikar, K.V. (2006). Empowerment of rural women through income-generating activities. P: 600-602 in *Karnataka Journal of Agricultural Sciences*, 19(3).
- 7) Darshana, N., and Padia (2008) rural women, microfinance, Khadi, and a cluster of village industries Aveshak Sardar Patel Institute of Economic and Social Research, Ahmedabad. January-June, 38:1.
- 8) Deininger, K., and Y. Liu. 2009. Working paper on policy research on the economic and social impacts of self-help groups in India. Publications from the World Bank
- 9) Dhanya, M. B., and P. Sivakumar. Microfinance, Women's Empowerment, and Banking Empowerment. *Economic and Political Weekly*, 38(12/13): 1274-1283.
- 10) NABARD. 2010. The Status of Microfinance in India 2009-10. National Bank for Agriculture and Rural Development (NABARD), Mumbai.
- 11) NABARD and APMAS. 2009. Quality and Sustainability of SHGs in Assam. Hyderabad: APMAS.
- 12) NCAER, 2008. The Impact and Sustainability of the SHG-Bank Linkage Program. National Council of Applied Economic Research (NCAER), New Delhi
- 13) Sundaram, A. 2012. The Impact of Self-Help Groups on India's Socioeconomic Development. 5 (1):20-27.



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## **Analysis of the Right to Participation of Children**

**Chirugu Gianina**

Ovidius University of Constanta, Romania



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**ABSTRACT:** The purpose of the paper is to present the rights to participation of children and how these rights are implemented and respected. This paper is original through the research theme, which is of great relevance, this being demonstrated by the statistical data and the projects started at national level to promote the rights to participation of children. The objectives of this paper are as follows: Presentation of the main rights of children, analysis of international and national legislation on children's participation rights, analysis of how this right of children is respected by the institutions of the world and those of our country, analysis of the implementation and observance of the right to participation of the child in the local community. The results of the research came to the following conclusions: the right to participate allows children to have a say in their lives. They give children the opportunity to express their opinions, discuss issues they consider important, and seek and receive information relevant to them.

**KEYWORDS:** children, rights, participation, social work, education

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### **I. INTRODUCTION**

The participation of children in decisions affecting their lives is a fundamental right guaranteed by Article 12 of the UN Convention on the Rights of the Child and Article 24 of Law 272/2004 [1]. This right means that all children have the right to express their views on all matters affecting them, within the family, at the local Community level, at school, and even at the national political level.

Adults should consider and give due importance to the views of children, in accordance with their age and maturity. Another way for children to exercise their participation rights is to engage in Community life.

Children can be active members of the Community. Thus, children have the right to actively engage in society and participate in decisions that may directly affect them. They have the right to oppose the violation of their rights and may try to do something to enforce them. In legal terms, participation is not a single right, but a sum of several rights: The acceptance of the child's opinion and its consideration, the right to be informed of the consequences that his opinion may have, the right to freedom of expression, the right to freedom of thought, of conscience and religion, the right to free association and the right to peaceful assembly, consideration of the child's ever-developing capacities as a basis for the way parents guide and guide them.

The Romanian legislation recognizes the right of the child to participate in decisions concerning him, establishing, through various normative acts, the minimum age from which consultation or consent of the child on these decisions is mandatory, as well as the ages from which the child can make decisions about certain aspects of his life himself.

The right to be heard gives the child the opportunity to request and receive any relevant information, to be consulted, to express his opinion and to be informed of the consequences that his opinion may have, if it is respected, and the consequences of any decision that concerns him.

Children have the right to participate, but not the obligation to do so. They are not obliged to express their opinions if they do not want or are not interested in doing so. Children should also not be subjected to any pressure, constraint or influence that could prevent them from freely expressing their opinions or lead to their manipulation. Adults must provide the appropriate framework to facilitate the free exercise of this right.

### **II. PARTICIPATION OF CHILDREN BETWEEN THEORY AND PRACTICE**

Because in some families the opinions, skills and interests of children are not taken into account, they are unable to develop their qualities. Sometimes children are forced by their parents to choose a particular study profile. Some parents disagree with



## Analysis of the Right to Participation of Children

the way children spend their free time, their chosen hobby, or circles on frequented interests. Parents often forbid the child to participate in certain activities because: They do not see their usefulness for the development and future of their child, these activities violate the child's usual day regimen or are not traditionally common for girls or boys. There are cases where parents intimidate their children or do not provide them with the necessary equipment [2].

Children are often influenced by adults to adopt certain styles of clothing, music, etc. in families, many children are not able to choose which roles and tasks related to the household to assume. As a rule, these decisions are made by adults, father or mother, without consulting children. There are cases where older brothers force their children to perform the tasks that have come to them. Most children whose parents are absent from home because they work abroad have to do all the work in the home and household. Thus, they do not have free time to participate in various activities.

Children believe that optional hours would be useful for their development if they fit their needs and interests. However, the optional classes in many schools are chosen by teachers without consulting students and their parents. In some cases, parents decide which objects to study students in their optional classes without consulting their children. There are also situations where teachers resort to lies to persuade students to opt for one discipline or another. For example, the teacher promised that they would make mathematics fun if they chose mathematics as an optional hour, but in reality these lessons are no different from those according to the curriculum in the respective discipline. In many schools students are required to attend optional classes and there are common situations in which they are noted within them. There are also cases where only students who have high grades in a discipline are required to attend the optional time in the same discipline, being threatened by teachers that only in this way will they be able to maintain their good results to the point.

In most schools there are no opportunities and methods for consulting the child's opinion on the educational process and the conduct of extracurricular activities. Most adults do not know about the child's right to opinion or misunderstand it. Often student participation is viewed as a game, and as a result their involvement is only simulated. Many teachers confuse the expression of students' opinion with lack of education ("impudence"), especially when children have different views from those of adults. In most schools, teachers selectively respect this right, listening and taking into account only the opinions of certain students, whom they prefer because they have high grades and exemplary behavior, come from "good families", have more material resources or are related to teachers.

In many cases, even if teachers consult students, this process is false because adults do not take into account the opinions expressed. Students in small classes are not given any opportunity to express their opinion. Students do not have opportunities (discussions, questionnaires, anonymous ticket speakers, etc.) to freely express their opinion on working and evaluation methods applied during classes or teachers' communication style. In some schools only young specialists apply interactive methods, attractive to students, in the evaluation of activities. As a rule, students do not have the opportunity to participate in the selection of topics addressed in the course of the teaching class. The teachers develop their activity plan for the hour decided in August, without making a preliminary analysis of the students' interests and needs. During the school year, they do not change this plan. In the rare situations where teachers ask students what theme they would like to address in class, they do not take into account the children's ideas, motivating that they do not have the necessary information and materials.

There are frequent cases where teachers do not allow students to express their views if they are different from those of teachers. In order to impose their own opinions, teachers threaten children with punishments or resort to lower grades of discipline and behavior, apply verbal and physical violence.

The opinions of the children regarding the educational process, extracurricular activities, the content of the school regulations, and the activity of the self-governing bodies (senate / School council) are consulted extremely rarely. Most adults do not understand the essence of the right to participate, as a result, the involvement of children is formal. And in many families, the opinions, skills and interests of children are not taken into account, so they cannot develop their qualities.

In most schools extracurricular activities – interest circles, evenings, holidays, contests, Olympics – are planned and organized without consulting children [3]. There are no opportunities for students to express their views on how these activities were conducted. As a result, child participation is often formal and forced, with teachers threatening students with low grades in discipline or behavior. Interest circles in most schools do not encompass the interests and skills of children. The content of the circles is determined according to the skills and preferences of the teachers and because in the communities there are no adults ready to coordinate the activities requested by the children. At the same time, not all student interests are approved by teachers ("the break-dance circle does not correspond to the school values"). As a rule, children's initiative to organize extracurricular activities themselves is not supported by adults [4].

Children's access to interest-based circles is reduced in several schools due to limited places, but also due to the desire of adult coordinators to work with children who have a high level of skills development that the circle's activity entails. In most schools, student participation in various competitions and Olympics is selective. As a rule, priority is given to children preferred by

## Analysis of the Right to Participation of Children

teachers – students with high marks on objects and good behavior. There are cases where the circles do not work systematically and their displayed schedule is not respected. Often only the regional or regional stages of some circles and competitions are performed.

In most schools, the information provided to students about evenings, contests and other extracurricular activities organized in the school is incomplete: Their objectives, conditions of deployment, advantages that participants can obtain, criteria for participation, contact details of organizers, etc. in many cases, students are not informed in advance about the content and conduct of activities and are unable to prepare for them. Participation in competitions and Olympics is often not anticipated by proper training of children.

In many cases, children cannot learn from participating in certain competitions, because their organizers only announce their results and provide no explanation of the participants' performance. There have also been cases where the results of the Olympics have not even been made public in the school.

The scenarios of the activities are made up of adults, who direct the whole process of who will play an active role, who will be a spectator, what will everyone say and do, who and how to dress or make up. Sometimes the scenarios of the activities are repeated from previous years and/or do not correspond to the age of the students.

Teachers encourage the involvement of some and the same children, who like them or who already have experience with such activities [5]. The fact that these students already have a training facilitates the work of the teachers and makes them feel confident that the children will manage ("that they will not embarrass the class or school"). In many cases, the participation of children in competitions is formal, because from the start one knows who will take the first place. Usually, the criteria for determining winners are not known to the participants or they are not respected. In the process of preparing for participation in an activity, children are often forbidden to associate with peers at their will or to call on the help of other adults. Children from poor families, modestly dressed or inexperienced at such events are often mocked by adults or colleagues when engaging in activities. If they don't take top places in competitions, teachers won't let them get involved any other time. In some communities, non-governmental organizations promote the participation and expression of opinion of children in seminars, summer schools, opportunities to volunteer and access various sources of information.

Structures for self-leadership and consultation of children's opinions – senate/council/school Parliament – exist in some schools. In most cases, however, children who are not part of them do not know about their existence or do not know what their role is in school, how they function and what procedures are necessary to become their members. Most of the time, the choice of class leaders or school board members is not transparent and is made without the participation of students. These choices are sometimes simulated, with the final decision belonging to the master. Sometimes the role of class leader is fulfilled by the same student over several years, even if he does not want to assume this responsibility [6].

In many schools, the work of self-governing bodies is directed and manipulated by teachers. Members of self-governing bodies in schools often do not know their mission and responsibilities. Adults also develop the activity plan of the school council / senate, sometimes including in it tasks of the teacher or representatives of the school administration (records of students who have absences, students with high or low grades, communication about "bad" students in meetings with parents, etc.). Often this structure is formal and does not really work, convening in irregular meetings at the request of teachers.

Many adults in local schools and non-governmental organizations do not understand the essence of voluntary participation and condition the activity of children in self-governing bodies through high success, exemplary behavior.

In many schools, children who are part of these structures have many privileges: Their absences or delays in classes are not taken into account, they have opportunities to communicate informally with teachers, or they are not punished for certain violations. In other cases, class leaders are held responsible for the entire class, dealing with the organization of the serials, collecting the money needed to procure office supplies for theses and exams, or being reprimanded for violations made by other students. Many teachers use the threat of excluding students from the school's self-governing bodies as a method of discipline or persuasion.

Children in many schools are not informed about the existence of the school regulations or do not know what its provisions are. In some schools, the Regulation is drawn up with the participation of self-governing bodies. In most cases, students do not have access to the school regulations, which are in the chancellery, a room where only teachers can enter. In no school where the members of the working Group on the monitoring of children's Rights are studying, the content of the school rules has not been consulted with the students. These regulations are old, and the rules are formulated in vague, general terms that are not understandable to all children, from first to twelfth grade. In some cases, teachers say that the regulations were made up by students several years ago.

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As a rule, at the level of classes the obligations of the students are established by the teachers, without being consulted with the children. Teachers often refer to penalties for violating students' obligations and self-Regulation in general, but none of them mention penalties for violating children's rights.

Schools and communities lack financial resources to support initiatives of children and to carry out activities to promote their participation. Collected money for activities with children. Most of the time, teachers say that the money is intended and spent for performing repair work in schools. Sometimes, representatives of local public authorities promise to allocate resources for organizing activities planned by school councils or local children's councils, but subsequently, they do not grant this money, motivating by the fact that all resources were spent on the repair of the school or the cafeteria. Even if there is such a possibility, there are cases where neither the school nor the culture house offers the children the festivities hall to organize rehearsals during the preparation of an event.

### III. DESIGN OF RESEARCH

This research follows the way in which children's participation rights in the local Community are promoted, implemented and respected.

The objectives of the research are: methods and processes for promoting children's participation rights, the ways of implementing the rights of participation of children, respect for children's rights of participation.

It was formulated as a general hypothesis: "In local communities, children know their rights to participate, and these rights are respected by family, school and local authorities.

In this research we used a set of working tools methods and techniques such as questionnaire, interview and comparative study.

The operationalization of the concepts was carried out through a questionnaire that will measure the degree of information of children on the rights to participation and the degree of respect for the rights to participation of children according to age and social environment.

We chose the questionnaire as a working tool because it provides opinions, that is, an image of the object being researched – the right to participate of children

For the construction of the questionnaire, several steps were taken. First, for the collection of data, we conducted ten interviews, five were applied among children from ordinary families and families The other five in a placement center on a sample of ten children aged 12-16 years. As a working tool we used two interview guides that have ten questions each with free answer.

I chose the interview because it is a verbal investigation process to collect information about the knowledge and respect of the rights to participate.

Based on the information collected on the field, we formulated the assumptions, variables and formulated the items for the questionnaire. The respective questionnaire was pre-tested on a sample of twenty subjects, and after pre-testing five questions were modified. The final questionnaire reached fifteen closed questions with coded answer variants.

The target population of this research is represented by children of both sexes from the Roman municipality, aged between 12 and 16 years the accessible population was represented by students from the Romanian schools. The sample is composed of 50 child subjects and was randomly chosen from two roachy schools.

For starters, we conducted the documentation and took information on the legislation in the field and the analysis of other studies that have as their object the right to participate of children. Then we made two interview guides and the three case studies. Then we tested the questionnaire and brought it to form the final we applied to the chosen sample.

For the collection of data for this research we have produced two different interview guides that we applied on two different samples. The first guide was applied to children from ordinary families, the second guide was applied in a placement center and we selected five children without family as sample. We had free discussions with all subjects and gathered information about their knowledge of the right to participate and how the subjects felt respected or not the right to participate in everyday life.

This research aimed to study how children's participation rights in the local Community are promoted, implemented and respected. By doing a general analysis of the results and analyzing the assumptions, we noticed that 80% of the respondents heard about the rights to participation of children, the main source of information about the rights to participation being the Internet, then from their colleagues. More than half of the study participants often feel that they are not heard when they express their opinion. The general conclusion of this study is that this research confirmed the general hypothesis.

The conducted research has a number of methodological limits that have influenced the validity of the obtained results and will be presented below. First, it should be noted that a small number of subjects were used, which makes the results not representative of the population from which the sample was extracted.

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As for the use of the interview, interview guides were built specifically for this research and it was pre-tested on a small number of subjects, which is why its validity is not very good, so there may be errors in the collection of field data.

Sometimes the wording of the items is not very clear on the questionnaire, which is why the subjects may not have understood exactly what each item refers to.

Another source of error for this research may be the way the data was collected, with most subjects initially refusing to participate in the research, this can lead to the completion of random questionnaires without carefully reading the items and especially without understanding them

Prerequisites for future research

The research presented aims to modestly surprise some aspects regarding the implementation and respect of children's rights to participation in the local Community. This research is useful for the realization of future projects aimed at the participation of children. In the future, interesting research can be carried out on the participation of children in various research activities and the permanent evaluation of the training needs of children and professionals working with children and the adaptation of the training modules to the specific of the target group. Publicizing successful practices to create a mailarg commitment of authorities and communities to children's initiatives and mobilizing children and adults from other communities. Dissemination of information material on young people's rights, stipulated by international and national acts, in particular, material on opportunities for children to participate in decision-making and influence them.

Among the personal contributions we can list the achievement of a sociological research aimed at capturing the aspects regarding the implementation and observance of the rights to participation of children in the local Community, the realization of interview guides, questionnaire, comparative study and application of interviews, questionnaire and the centralization of the results.

## V. CONCLUSIONS

The right to participate allows children to have a say in their lives. They give children the opportunity to express their opinions, discuss issues they consider important, and seek and receive information relevant to them. In some cases, Romanian law explicitly allows children to have a say after a certain age. For example, children can choose their own religion at the age of 16, but their religion cannot be changed without their consent even before the age of 14

The rights of participation of the child are, however, limited in the sense that in order to exercise them, children must be able to form their own opinions. However, it should not be understood that participation rights do not apply to young children. On the contrary, the latter also have participatory needs and capacities. Under Romanian law, the child over 10 years of age must be heard in all legal and administrative procedures concerning him or her (for example, the child over 10 years of age for whom the adoption procedure has been opened must consent to adoption). Children of younger age may also be heard, and if the competent authority deems it appropriate, the views of the child shall be taken into account according to the age and degree of maturity of the child.

In short, the older the child gets, the more participatory needs he will have, and the more able he will be to form his own opinions. Therefore, participatory rights are becoming extremely important in children.

## REFERENCES

- 1) Balahur, D, 2001 the protection of the rights of the child as a principle of social work, C.H. Beck, București.
- 2) Lansdown, G. 1995 Taking Part: Children's Participation in Decision-Making. IPPR: London.
- 3) Adams, E. and Ingham, S. 1998 Changing Places: Children's Participation in Environmental Planning. The Children's Society, London.
- 4) O'Kane, C. and Sen, I. 2001 In Search of Fair Play: Street and Working Children Speak about Their Rights. Butterflies and Mosaic: India.
- 5) Milner, P. and Carolin, B. eds. 1999 Time to listen to children. Routledge, London.
- 6) Alderson, P. 1995 Listening to Children: Children, Ethics and Social Research, Barnardos, Essex.



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## Impact of the Covid-19 Plan on Financial Reporting and Information Disclosure Practices



Dr. Duong Thi Quynh Lien

School of Economics - Vinh University

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**ABSTRACT:** This study aims to review the factors affecting financial statements and information disclosure of enterprises during the COVID-19 pandemic, which are: Financial factors; Business activities; Enterprise value; Business contract; related parties. On that basis, future studies can test the research hypotheses in enterprises in Vietnam as well as in any other country in order to suggest for the State and managers to issue related policies. Financial statements and disclose information as appropriate.

**KEYWORDS:** COVID-19, Financial factors, Business activities, Enterprise value, Business contract

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### 1. ASK THE PROBLEM

Financial reporting and disclosure (FRD) refers to the accounting by which the various business transactions are recorded in the financial statements of an entity under accounting assumptions and standards. Specified report. FRD provides important information to help managers make appropriate decisions. Furthermore, the role of FRD is important because it describes the actual business scenario of an enterprise (Ailwan et al., 2013). As part of the business's operations, FRD focuses on disclosing the actual business scenario, potential risks of the business and related information used in the preparation of financial statements. This form of disclosure helps stakeholders make the necessary decisions in dealing with any adverse economic events. An adverse economic event represents an increase in any breakdown that slows down economic growth, increases unemployment, and makes the overall economy fragile. Adverse economic events include the outbreak of any global pandemic, worldwide economic disruption, etc. The recent outbreak of the COVID-19 pandemic can be considered an adverse economic event as it has caused a global recession (McKibbin and Fernando, 2020).

The COVID-19 pandemic has slowed down economic activities globally, disrupting supply chains as cities and countries have to undergo strict quarantine and closure. Movement restrictions imposed by governments have reduced sales and production volumes of business enterprises. Therefore, business performance of enterprises is negatively affected due to the existence of negative impacts of COVID-19 on business operations (Shen et al., 2020). The impact of the COVID-19 pandemic has changed aspects of financial reporting and disclosure. Because closing businesses for too long affects the estimates and measurement mechanisms for different elements of the financial statements. Furthermore, this negative impact will also cause uncertainty regarding various agreements and contracts previously made by business organizations.

### 2. RESEARCH METHODS

Our paper uses qualitative research methods to explore the factors affecting FRD during the COVID-19 pandemic. Factors affecting FRD include:

- Financial factors;
- Business activities;
- Enterprise value;
- Business contract;
- Related parties.

### 3. RESEARCH OVERVIEW

Similar to some global pandemics such as: acute respiratory syndrome in 2003, swine flu pandemic in 2009, avian influenza in 2013 (Springborn et al., 2015) and Ebola virus; the emergence of the COVID-19 pandemic has shaken the global economy. All

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Businesses have been directly or indirectly impacted by this pandemic. However, the economic uncertainty of the COVID-19 pandemic in business sectors such as aviation, apparel, consumer goods, automobiles, electronics, hotels and financial services is very severe in the region. (ICMAB, 2021). Due to the reported business activities, it can be said that the COVID-19 pandemic has had a severe impact on financial statements (ElMousawi and Kanso, 2020). Furthermore, this pandemic is posing a risk to the viability of the business as it will affect going concern assumptions, accounting estimates and asset valuations (KPMG, 2020a). As a result, professional accounting bodies have emphasized adequate disclosure in the case of organizations' ability to continue as a going concern and next period reporting (European Accounting, 2020; ICAB, 2020). PRI (2020) has recommended disclosure of risk and uncertainty in reporting. On the basis of a review of research literature, the authors identified five factors affecting FRD during the COVID-19 pandemic.

**3.1. Financial factors:** Since the emergence of the COVID-19 pandemic is hampering the economic activities of the business, all financial components including assets, liabilities, income and expenses need to be business operations will be affected. This global pandemic has forced many businesses to close, which can affect revenue accounting, revenue contract enforcement, revenue estimates, and loss of receivables. Commercial revenue (KPMG, 2020b). Declining operating revenues may depress future cash flows (RSM, 2020). As a result, this liquidity crisis can lead to payment liability or contract losses for the business organization (KPMG, 2020b). However, due to movement restrictions and border closures during the COVID-19 pandemic, it is very difficult to mobilize inventory for production and sales purposes. This causes inventory demand to change dramatically. In addition, the perishable nature of goods coupled with the increasing pressure of sustainability rules and standards make inventory management more difficult (Logistik Express, 2020). This poses a requirement for inventory management reporting and disclosure during the COVID-19 pandemic. In addition, businesses can also apply valuation and measurement of financial assets as this pandemic will reduce the fair value of financial assets held by business organizations. This lower value of financial assets exposes the business to credit risk (RSM, 2020; KPMG, 2020c).

**3.2. Business activities:** Business activities of the enterprise are also severely affected by the rapidly spreading COVID-19 virus. As a result, the global Accounting authorities and local Professional Accounting regulators have recommended that business organizations negatively impacted by the COVID-19 pandemic conduct sensitivity analysis to determine the going concern and disclose sufficient information in the event of uncertainty (KPMG, 2021d; European Accounting, 2020; ICAB, 2020). The impact of the COVID-19 pandemic will be considered an unwarranted event for a business enterprise with a reporting deadline that falls on December 31, 2019 (ICAB, 2020; ICMAB, 2021). As the pandemic surge is also continuing into 2020 and 2021, organizations should disclose the major impacts businesses are experiencing as a result of the COVID-19 pandemic. In response to this uncertain situation, PWC (2020) has recommended that management consider the impact of COVID-19 in the case of both interim and annual financial statements. Furthermore, entities should also disclose their assessment and efforts in developing key accounting policies and estimates to respond to this period of crisis (Accounting Europe, 2020; KPMG, 2020a).

**3.3 Corporate Value:** The COVID-19 pandemic is triggering the business world towards a new level of uncertainty as it is worsening earnings quality, corporate value and fair value. Business value is decreasing due to falling current income, decreasing customer demand, and businesses being forced to close their businesses (Sadang, 2020). As a result, stock prices also fell due to falling business profits during the COVID-19 pandemic and the stock market's volatile response to prolonged business lockdowns (El-Mousawi and Kanso, 2020)). As a result, the inputs that are observable at market prices are no longer relevant, leading to subjectivity regarding the measurement of fair value (ICMAB, 2021). In addition, investments in subsidiaries, joint ventures and associates are accounted for using the cost, fair value or equity method. Fair value cannot be measured and there must be a decline in the value of subsidiaries, joint ventures and associates as a result of the spread of COVID-19, which will affect the accounting of business combinations. Enterprises (RSM, 2020). This pandemic is forcing financial statement preparers to revise their estimates and accounting policies, which will inevitably affect the determination and measurement of long-term assets.

**3.4. Business Contracts:** The economic turmoil caused by the COVID-19 pandemic has caused businesses to rethink the terms and conditions of different types of contracts and forms of business. Blake and Conticelli (2020) argue that a strict policy to recover money from borrowers is no longer applied by lenders when borrowers become unscrupulous and borrowers' ability to pay to make payments. Existing long loan agreements with limited income is a question. Given the current economic situation, many countries have extended the maturity period for borrowers, including Vietnam. Furthermore, credit officers cannot go to businesses for property valuation, which will affect property valuation uncertainty in the case of loan processing. Various construction projects and jobs have been halted due to labor or supply shortages affecting the capitalization of borrowing costs. As a result, renegotiation or adjustment of loan terms can affect the level of qualified borrowing costs (KPMG, 2020c). Not only loan contracts but also rental agreements can be affected in terms of renewal, termination or purchase choice between lessor

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and lessee resulting in lessee considering the loan rate. increase (ICMAB, 2021). In addition to these arrangements, any business combination undertaken during this period requires careful consideration of the circumstances in which the fair value of the acquired assets is assessed, the going concern acquired entity and impaired Goodwill balance upon acquisition (RSM, 2020).

**3.5. Stakeholders:** Business organization includes internal organizations (employees, Board of Directors) and stakeholders (government, suppliers, creditors, banks,). The COVID-19 pandemic has upset the balance between these parties. Some organizations offer special incentives to employees working on a temporary layoff, which may affect the recognition of employee benefits (ICMAB, 2021). Due to the liquidity crunch during this pandemic, companies are arranging payments to their own employees and other suppliers based on equity (RSM, 2020). The government needs timely support so that business organizations can survive this Covid pandemic. Vietnam, like many other countries, has activated a business support package to maintain and restore economic activities such as low-interest loans, tax cuts, tax deferrals, etc. (Bhowmik and Bala, 2020; KPMG, 2020e). Such consideration of government and employee benefits has a significant impact when it is recorded and measured by following relevant reporting standards.

## 4. CONCLUSION

The COVID-19 pandemic has caused a severe decline in the global economy from 2020-2022 and may continue for the following years. However, many countries are trying to cope with the shock of this pandemic and support business organizations with stimulus funds, loan extensions, tax cuts, tax deferrals, and more. Business organizations are also doing their best to combat the shock of COVID-19 and return to a normal business atmosphere. The combined effort to fight COVID-19 is the only solution so far. All of these efforts by governments and business organizations should be communicated appropriately to investors and other business stakeholders. Because the right communication can increase the transparency and accountability of the business organization and increase the social acceptance of the business. Therefore, the appropriate way to communicate this information to stakeholders is FRD. This study aims to review the factors affecting FRD in the context of the COVID-19 pandemic. The COVID-19 pandemic has had an adverse impact on business operations. Therefore, all business activities are classified into five main aspects namely financial factors, business operations, business contracts, enterprise value and related parties.

## REFERENCES

- 1) Ailwan, B.M., Katrib, D.I. and Samara, A.I. (2013), "The efficiency of disclosure in the financial statements in companies in the presence of international accounting standards and its effect on achieving profits, success, and being unique", International Journal of Humanities and Social Science, Vol. 3 No. 17, pp. 174-183.
- 2) Springborn, M., Chowell, G., MacLachlan, M. and Fenichel, E.P. (2015), "Accounting for behavioral responses during a flu epidemic using home television viewing", BMC Infectious Diseases, Vol. 15 No. 21, length: 10.1186/s12879-014-0691-0
- 3) El-Mousawi, H. and Kanso, H. (2020), "Impact of COVID-19 outbreak on financial reporting in the light of the international financial reporting standards (IFRS) (an empirical study)", Research in Economics and Management, Vol. 5 No. 2, pp. 21-38.
- 4) ICMAB (2021), "Implications and considerations of COVID-19 pandemic in financial reporting disclosure practices", [podcast] Implications and Considerations of COVID-19 Pandemic in Financial Reporting Disclosure Practices, p. 12, available at:
- 5) <http://www.icmab.org.bd/wpcontent/uploads/2020/09/11.ICMAB-News.pdf> (accessed 4 April 2021).
- 6) KPMG (2020a), *COVID-19-Financial Reporting Implications*, [online], available at: <https://home.kpmg/xx/en/home/insights/2020/04/ifirstoday-podcast-COVID-19.html> (accessed April 13, 2021).
- 7) KPMG (2020b), *COVID-19-Financial Reporting*, [online], available at: <https://home.kpmg/xx/en/home/insights/2020/03/COVID-19-financial-reporting-resource-centre.html> (accessed April 13, 2021).
- 8) McKibbin, W. and Fernando, R. (2020), *The Global Macroeconomic Impacts of COVID-19: Seven Scenarios (No. 2020-19)*, Center for Applied Macroeconomic Analysis, Crawford School of Public Policy, The Australian National University . 8. Shen, H., Fu, M., Pan, H., Yu, Z. and Chen, Y. (2020), "The impact of the COVID-19 pandemic on firm performance", Emerging Markets Finance and Trade, Vol. 56 No. 10, pp. 2213-2230.



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## The Impact of Problem Based Learning on Learning Outcomes in Nursing Students



Suyatno Hadi Saputro<sup>1</sup>, Mustaji<sup>2</sup>, Fajar Arianto<sup>3</sup>

<sup>1,2,3</sup>Teknologi Pendidikan, Universitas Negeri Surabaya, Surabaya, Indonesia

**ABSTRACT:** This study aims to determine the impact of problem-based learning on nursing student learning outcomes. The research method used is quasi-experimental by comparing the two groups, namely the group treated with problem-based learning and conventional learning. The research subjects were 7th semester nursing students, totaling 68 students who were divided into two groups, experiment with problem-based learning and control with conventional learning. Analysis of the data in this study by comparing learning outcomes in the two groups, experimental and control. The results of data analysis showed that students who were treated with problem-based learning obtained better learning outcomes compared to the control group or conventional learning. This research can be concluded that there is an impact of problem-based learning on nursing student learning outcomes.

**KEYWORDS:** Problem-based learning, Learning outcomes, Nursing, Critical thinking, Collaboration

### I. INTRODUCTION

Learning outcomes are the most highlighted thing in learning, because learning outcomes are the goals or achievements of learning. Education and learning process are two things that cannot be separated because the goals of education can be achieved with a good learning process. So, learning can be interpreted as a situation or situation that can be planned in order to achieve the expected educational goals.

Learning outcomes are abilities possessed both in terms of knowledge (cognitive), attitudes (affective), and skills (psychomotor), all of which are obtained through teaching and learning process (Mappeasse, 2009). Learning outcomes are one of the indicators of the success of students in achieving the desired goals because each learning will undoubtedly shape learning outcomes (Sutrisno and Siswanto, 2016). Learning outcomes are focused on cognitive aspects which are influenced by the results of the pretest and posttest scores. Assessment of cognitive aspects of learning outcomes is an evaluation carried out by educators to measure the level of achievement or dominance of students in knowledge aspect which includes knowledge, understanding, application, analysis, evaluation, and creation.

Learning model is one of the important factors that have components and virtues to be considered so that a learning model can be implemented properly. These components include models and implementations (Hanum, 2013). One example of a learning model that can create a better learning process is using Problem Based Learning (PBL) (Liu et al., 2019), (Park and Choi, 2015), (Kek and Huijser, 2011). The Problem Based Learning (PBL) learning model is an example of active learning that can support creativity to share knowledge, improve independent learning skills, teamwork, problem solving skills and critical thinking skills (Hsu et al., 2016), (Lin et al. . , 2010).

Permatasari et al. (2019) suggested that PBL can be a way of learning that is more innovative, fun and challenging for students to form their own knowledge using problem solving as in real life. Each example of learning that is used to support and assist the learning process certainly has a very important impact on increasing the ability of each student (Faqiroh, 2020). Problem Based Learning is based on the results of Barrow and Tamblyn's research which was first implemented in a medical school at MC Master University in Canada in the 1960s. Problem Based Learning is an example of learning that uses concrete global problems as a context for students to learn about critical thinking and problem-solving skills, as well as to acquire essential knowledge and concepts based on course material or subject matter (Terry, Barret, 2005). PBL model can be interpreted as a series of learning activities that emphasize the process of solving problems faced scientifically.



## The Impact of Problem Based Learning on Learning Outcomes in Nursing Students

One other way that educators can do is empower students learning process by applying PBL learning model. PBL learning model is a fundamental example of constructivist understanding that accommodates the involvement of students in learning process and problem solving. Problem-based learning is a learning approach that presents a problem designed in a relevant context using the material to be studied to encourage students to gain knowledge and understanding of concepts (Malmia et al., 2019). Through PBL learning model, students get news and know the subject matter. Students can learn how to argue about solving problems at hand. Learners also learn to work individually and collaborate using groups on problem solving. Through PBL, students can discuss relevant problems professionally in small groups. The problem is discussed first before preparations have been made to initiate the students' initial knowledge (Dolmans et al., 2016).

In problem-based learning (PBL), students look for problems in learning to understand, structured problems and look for feasible solutions (Hmelo-Silver, 2004). Initially developed to improve problem solving and independent learning of students in medicine (Barrows and Tamblyn, 1980), PBL has expanded to various levels of education (K-12, undergraduate, and postgraduate) and various disciplines, ranging from language-based art to biology (Barrows and Tamblyn; 1998). The increase in the use of PBL is largely due to concrete evidence stating that PBL can improve deep content learning (Hmelo-Silver) and students' independent learning and problem-solving abilities.

### II. METHODS

The research method used is quasi-experimental by comparing two groups, namely experimental and control. The experimental group is treated with problem-based learning, and the control group is treated with conventional learning or what is usually done by lecturers. The subjects of this study were nursing students in the 7th semester, totaling 68 students which were divided into two, namely 34 students in the experimental group and 34 in the control group. The data analysis technique used was to compare the learning outcomes of the two groups after the experimental activities.

### III. RESULT AND DISCUSSION

The results of the study in table 1 show that the average of the experimental group (73.24) is better than the control group (61.91). The learning outcomes of nursing students taught by problem-based learning are better than those taught by conventional learning. Table 2, the t-test for Equality of Means shows a significance of 0.004 (<0.05) it can be concluded that there is a positive impact of problem-based learning on nursing student learning outcomes. Problem-based learning based on research by Malmia, et al. (2019) showed an increase in student learning outcomes. Learning using problem-based learning makes students more interested by responding positively and happily (Kawuri, Ishafit, & Fiyanto, 2019). The impact of problem-based learning on student understanding learning outcomes is because the learning emphasizes students and problem solving authentically or relevant to all knowledge from existing or owned sources (Timor, Ambiyar, Dakhi, Verawadina, & Zagoto, 2021).

**Table 1. Group Statistics**

	Learning Outcomes	
	Group	
	Experiment	Control
N	34	34
Mean	73.24	61.91
Std. Deviation	15.901	15.571
Std. Error Mean	2.727	2.670

Problem-based learning in the process requires students to be active in extracting information from various sources and is impactive in facilitating argumentative skills so that students find concepts (Pratiwi, Cari, Aminah, & Affandy, 2019). With problem-based learning, nursing students actively build and reconstruct their knowledge by connecting concepts with the real world (Compton, Olirus Owilli, E. Norlin, & Murdoch, 2020). Students in teams during problem-based learning have the ability to manage related learning resources in building their understanding of the material being studied (Ghani, Rahim, Yusoff, & Hadie, 2021). Savery (2019) states that experience in problem solving, students gain new knowledge, adapt previous learning and build skills, and in implementation discuss the seven main design elements, namely a) challenging problems or questions, (b) continuous investigation, (c) authenticity, (d) student voice and choice, (e) reflection, (f) criticism and revision, and (g) public product. The choice of problem quality affects the group's function in problem-based learning which will have an impact on the length of time an individual learns leading to an increase in learning achievement (Yewa & KarenGohb, 2016).

## The Impact of Problem Based Learning on Learning Outcomes in Nursing Students

**Table 2. Independent Samples Test for Problem-based Learning on Learning Outcomes**

		Learning Outcomes		
		Equal variances assumed	Equal variances not assumed	
Levene's Test for Equality of Variances	F	.004		
	Sig.	.950		
t-test for Equality of Means	T	2.967	2.967	
	Df	66	65.971	
	Sig. (2-tailed)	.004	.004	
	Mean Difference	11.324	11.324	
	Std. Error Difference	3.817	3.817	
	95% Confidence Interval of the Difference	Lower	3.703	3.703
		Upper	18.944	18.944

Problem-based learning encourages students to be better able to self-regulate, maintain activities, cognition, motivation and emotions to achieve goals (Wosinski, et al., 2017). The process of working in groups, developing students' clinical skills through collaborative sharing, comparing and debating. In small group work, students act more positively because the structure coincides with the tutorial process by helping students learn how to study in groups and learn how to anticipate, prevent, overcome, and deal with the difficulties they will face (Newman, 2005). Lecturers take on the role of facilitator helping groups build understanding and link concepts by providing information, directing exploration, strengthening understanding of difficult concepts, and introducing resources. In addition, the facilitator asks for a reflection on the group process and group results (Seibert, 2021). Problem-based learning helps students learn by discussing their knowledge and information in social groups by solving problems using higher-order thinking skills that result in positive developments in academic achievement (Inel & Balim, 2010).

#### IV. CONCLUSION

Problem-based learning in its application to nursing students has an impact on learning outcomes. In the application of problem-based learning, students are better able to regulate themselves, maintain activities, cognition, motivation and emotions to achieve goals. Students with this learning are able to manage learning resources to build their understanding of the material being studied. Interaction during the learning process in problem-based learning can improve the communication and social skills of nursing students which will benefit nursing practice.

#### REFERENCES

- 1) Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. *Academic Medicine*, 68, 52–81.
- 2) Barret, Terry. (2005). Understanding Problem Based Learning. [online]. Tersedia: <http://> [22-03-2007].
- 3) Bloom, Benjamin S., etc. 1956. *Taxonomy of Educational Objectives : The Classification of*
- 4) Dolmans, D. H. J. M., Loyens, S. M. M., Marcq, H., dan Gijbels, D. (2016). Deep and surface learning in problem-based learning: a review of the literature. *Advances in Health Sciences Education*, 21(5), 1087–1112. <https://doi.org/10.1007/s10459-015-9645-6>
- 5) *Educational Goals, Handbook I Cognitive Domain*. New York : Longmans, Green and Co. Excel. San Francisco : Jossey-Bass Publishers.
- 6) Facilitator. In A. Walker, H. Leary, C. Hmelo-Silver, & P. A. Ertmer (Eds.), *Essential Readings in Problem-Based Learning: Exploring and Extending the Legacy of Howard S. Barrows*. Indiana: Purdue University Press
- 7) Facilitator. *Interdisciplinary Journal of Problem-Based Learning*, 1(1). <https://doi.org/10.7771/1541-5015.1004>
- 8) Faqiroh, B. Z. (2020). Problem-Based Learning Model for Junior High School in Indonesia (2010-2019). *IJCETS* 8 (1) (2020): 42-48.
- 9) Ghani, A. S., Rahim, A. F., Yusoff, M. S., & Hadie, S. N. (2021). Impactive Learning Behavior in Problem-Based Learning: a Scoping Review. *Medical Science Educator*, 1199–1211.
- 10) Gibbons, M. (2002). *The Self-Directed Learning Handbook: Challenging Adolescent Student to*

## The Impact of Problem Based Learning on Learning Outcomes in Nursing Students

- 11) H.J. Yewa, E., & KarenGohb. (2016). Problem-Based Learning: An Overview of its Process and Impact on Learning. *Health Professions Education*, 75-79.
- 12) Hanum, N. S. (2013). Keefektifan E-Learning Sebagai Media Pembelajaran (Studi Evaluasi Model Pembelajaran E-Learning Smk Telkom Sandhy Putra Purwokerto). *Jurnal Pendidikan Vokasi*, 3(1), 90–102.  
<https://doi.org/10.21831/jpv.v3i1.1584>
- 13) Hanum, N. S. (2013). Keefektifan E-Learning Sebagai Media Pembelajaran (Studi Evaluasi Model Pembelajaran E-Learning Smk Telkom Sandhy Putra Purwokerto). *Jurnal Pendidikan Vokasi*, 3(1), 90–102.  
<https://doi.org/10.21831/jpv.v3i1.1584>
- 14) Hmelo-Silver, C. E., & Barrows, H. S. (2006). Goals and Strategies of a Problem-based Learning
- 15) Hmelo-Silver, C. E., & Barrows, H. S. (2015). Goals and Strategies of a Problem-based Learning
- 16) Hsu, C., Yen, S., dan Lai, W. (2016). The Impact Of Problem-Based Learning On Learning Outcomes Of Accounting Students. *Asian Journal Of Finance dan Accounting*, 8(2), 135. <https://doi.org/10.5296/Ajfa.V8i2.9917>
- 17) Inel, D., & Balim, A. G. (2010). The impacts of using problem-based learning in science and technology teaching upon students' academic achievement and levels of structuring concepts. *Asia-Pacific Forum on Science Learning and Teaching*, 1-23.
- 18) Kawuri, M. Y., Ishafit, & Fayanto, S. (2019). Efforts To Improve The Learning Activity And Learning Outcomes of Physics Students With Using A Problem-Based Learning Model. *IJIS Edu : Indonesian J. Integr. Sci. Education*, 1(2), 105-114.
- 19) Kek, M. Y. C. A., dan Huijser, H. (2011). The Power Of Problem-Based Learning In Developing Critical Thinking Skills: Preparing Students For Tomorrow's Digital Futures In Today's Classrooms. *Higher Education Research dan Development*, 30(3), 329–341. <https://doi.org/10.1080/07294360.2010.501074>
- 20) Lin, C.-F., Lu, M.-S., Chung, C.-C., dan Yang, C.-M. (2010). A Comparison Of Problem-Based Learning And Conventional Teaching In Nursing Ethics Education. *Nursing Ethics*, 17(3), 373–382. <https://doi.org/10.1177/0969733009355380>
- 21) Liu, L., Du, X., Zhang, Z., dan Zhou, J. (2019). Impact Of Problem-Based Learning In Pharmacology Education: A Meta-Analysis. *Studies In Educational Evaluation*, 60, 43–58. <https://doi.org/10.1016/j.stueduc.2018.11.004>
- 22) M. Compton, R., OlirusOwilli, A., E.Norlin, E., & Murdoch, N. L. (2020). Does problem-based learning in Nursing Education Empower Learning? *Nurse Education in Practice*, 1-3.
- 23) Malmia, W., Makatita, S. H., Lisaholit, S., Azwan, A., Magfirah, I., Tinggapi, H., dan Umanailo, M. C. B. (2019). Problem-based learning as an effort to improve student learning outcomes. *International Journal of Scientific and Technology Research*, 8(9), 1140–1143. <https://doi.org/10.5281/zenodo.3457426>
- 24) Malmia, W., Makatita, S. H., Lisaholit, S., Azwan, A., Magfirah, I., Tinggapi, H., & Umanailo, M. C. (2019). Problem-Based Learning As An Effort To Improve Student Learning Outcomes. *TERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH*, 8(9), 1140-1143.
- 25) Mapeasse, M. Y. (2009). Pengaruh cara dan motivasi belajar terhadap hasil belajar programmable logic controller (PLC) peserta didik kelas III jurusan listrik SMK negeri 5 Makassar. *Jurnal Medtek*, 1(2), 1-6.
- 26) Newman, M. J. (2005). Problem Based Learning: An Introduction and Overview of the Key Features of the Approach . *Journal of Veterinary Medical Education*, 12-20.
- 27) Park, S., dan Choi, S. (2015). Impacts Of Problem-Based Learning On The Learning Atti-Tudes, Critical Thinking Disposition And Problem-Solving Skills Of Nursing Students: Infant Care. 192–196.  
<https://doi.org/10.14257/Astl.2015.103.41>
- 28) Permatasari, B. D., Gunarhadi & Riyadi (2019). The influence of problem-based learning towards social science learning outcomes viewed from learning interest. *International Journal of Evaluation and Research in Education (IJERE)* Vol. 8, No. 1, March 2019, pp. 39~46 ISSN: 2252-8822, DOI: 10.11591/ijere.v8.i1.pp39-46.
- 29) Pratiwi, S. N., Cari, C., Aminah, N. S., & Affandy, H. (2019). Problem-Based Learning with Argumentation Skills to Improve Students' Concept Understanding. *Journal of Physics*, 1-8.
- 30) Savery, J. R. (2019). Comparative Pedagogical Models of Problem-Based Learning. In M. Moallem, W. Hung, & N. Dabbagh, *The Wiley Handbook of Problem-Based Learning* (pp. 81–104). New Jersey: Wiley-Blackwell.
- 31) Seibert, S. A. (2021). Problem-based learning: A strategy to foster generation Z's critical thinking and perseverance. *Teach Learn Nurs*, 85–88.
- 32) Sutrisno, V. L. P., dan B. T. Peserta didiknto. 2016. Faktor-Faktor yang Mempengaruhi Hasil Belajar Peserta didik pada Pembelajaran Praktik Kelistrikan Otomotif SMK di Kota Yogyakarta. *Jurnal Pendidikan Vokasi*. 6(1): 111-120.

## The Impact of Problem Based Learning on Learning Outcomes in Nursing Students

- 33) Timor, A. R., Ambiyar, Dakhi, O., Verawadina, U., & Zagoto, M. M. (2021). Impactiveness of problem-based model learning on learning outcomes and student learning motivation in basic electronic subjects. *INTERNATIONAL JOURNAL OF MULTI SCIENCE*, 1(10), 1-8.
- 34) Wosinski, J., Belcher, A. E., Dürrenberger, Y., Allin, A.-C., Stormacq, C., & Gerson, L. (2017). Facilitating problem-based learning among undergraduate nursing students: A qualitative systematic review. *Nurse Education Today*, 67-74



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## Stakeholders Management Indicators: The Business Sustainability Inference



Nwinyokpugi, Nkiinebari Patrick PhD<sup>1</sup>, Ezeukwu, Kate Chukwunonso<sup>2</sup>

<sup>1,2</sup>Department of Office & Information Management, Rivers State University, Nigeria

**ABSTRACT:** The study investigated the relationship between stakeholder relationship management and business sustainability indigenous oil and gas producing companies in Rivers State. The study population comprised of the ten (10) indigenous oil and gas producing companies operating in Rivers State. The research selected varied number of managers from each of the firms under study making it a total sample of sixty two (66) respondents. Data were generated from the respondents by the use of a close-ended structured questionnaire. Pearson's product moment correlation, partial correlation and multiple regression were used to test the hypotheses with the aid of statistical packages for social science (SPSS) version 23.0. The p-values were calculated to determine the significance of the hypothesized relationship. Analytical outcomes revealed statistically positive and significant relationships between the dimensions of our predictor variable-stakeholder relationship management and the measures of the criterion variable-business sustainability. Based on the findings, the study concluded that stakeholder relationship management has a positive significant relationship with business sustainability of indigenous oil and gas producing companies in Rivers State. The study further recommended that Managers of indigenous oil and gas producing companies should capitalize on the pivot role of stakeholders' interest in their operations to ensure their business sustainability; Managers of indigenous oil and gas producing companies should seek to build strong relationships with their host communities in line with their company policies and practices aimed at achieving business sustainability; Managers of indigenous oil and gas producing companies should apply objectivity in their employee relationship processes as this has the potency to either ruin or enhance their business sustainability.

**KEYWORDS:** Stakeholders Relationship, Host Community Relations, Stakeholders Interests, Employee Relations

### INTRODUCTION

The true challenge of doing well during adversity is that future trends are associated with high uncertainties which are sometimes unimaginable. Diverse and distinctive information about stakeholder needs can improve the understanding of trends and opportunities in adversity, which stimulate firms' creativity and helpful for the adoption of flexible and innovative solutions in response to adversity (Grandori, 2020; DeJardine et al., 2019). Firms with good stakeholder relationships find it easier to gain access to diverse points of view and information because stakeholders are willing to share with trusted firms nuanced information about emerging issues and needs when they believe the firm will act responsibly with regard to their interests (Harrison et al., 2010). Stakeholders' collaboration is critical to the existence of workplace harmony. This means that these relational measures are appropriate in enhancing the reduction of workplace conflicts which has become issues of frequency in the Nigeria civil service as against the hitherto assumption that only financial inducement has the capacity of encouraging workplace conflict between management and employees (Nwinyokpugi, 2015). The issue of business sustainability in the indigenous oil and gas producing industry has become a matter of great concern. Over the last decade, the indigenous oil and gas producing companies in Rivers State, Nigeria have suffered a serious menace of extinction. This challenge originates from their inability to manage the concerns and interests of its stakeholders. Suffice to posit that these companies overtime neglect the interest of the internal stakeholders – employees, they barely take the host communities serious in their dealings, they evade taxes and neglect government policies and also they give little or no concern to customer satisfaction. These challenges when compounded overtime tends to affect the growth and sustainability of these businesses, thereby causing them to get extinguished. Thus, this study seeks to solve this identified problem through stakeholder relationship management. The issue associated with stakeholder relationship management has been a matter of serious discourse from different scholars. At different points and times, these scholars have opined how most organizations tend to suffer competing interests, to wit: the interests of some stakeholders are satisfied while

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others are put in the line. This generates a severe conflict of interests that have the potency to mar the organizational process, thereby affecting productivity level. Thus, for organizations, it has become imperative for organizations, in this case, indigenous oil and gas producing companies in Rivers State, Nigeria to understand the need to meticulously manage the diversified but 'all-important' expectations and interests of their actors as this would help them build sustainable business structures that can stand the test of time. Based on this backdrop, this study sought to investigate the relationship between Stakeholder relationship management and business sustainability of Indigenous oil and gas producing companies in Rivers State, Nigeria. Modern business can be seen as complex system, unstable and mutable, in which the players are usually forced to create, sustain and develop a great number of heterogeneous relationships with other classes of actors operating in the external environment. These players usually depend on these relationships to get access to several meaningful resources needed to carry on their day to day operations to survive in the business and to obtain a sustainable competitive advantage (Sciarelli, Tani, Landi & Papaluca, 2019). In fact, these players are able to aid, or to hinder, management processes in defining the strategies of the organizations engaged in these relationships and needed to reach, and sustain a position of competitive advantage.. The outcome of these continuous interactions have been studied both as a direct impact on firm's strategic processes and as an indirect one, mainly focusing on the network of relationships each single enterprise lives into. A business is said to be sustained or sustainable overtime in that it is able to manage the diverse interests and expectations of its stakeholders. In a business environment, an employee has great expectations from the organization; amongst other things, salary and bonuses. If these things are not met, chances are that the employees would become ineffective on the job, or say the employee might be effective but inefficient thereby putting the organizational productivity and profitability at a jeopardy. This when done, affects the sustainability of such business overtime. In view of the foregoing, this study defines business sustainability as the process by which the interests and expectations of the various organizational stakeholders are met; thereby leading to growth, profitability, less conflicts and efficiency of the business which in turn helps it stand the test of time – become sustainable overtime. It also views business sustainability as the concerted efforts made by an organization, in this case; Indigenous oil and gas producing companies in Rivers State Nigeria, towards building a healthy relationship with its stakeholders and increasing productivity.

## LITERATURE REVIEW

This study is situated in the Stakeholder theory which sees from the discernibility of affect and benefits of any group or individual while achieving of the organization's objectives. Stakeholders theorists suggest that managers in organizations have a network of relationships to serve, which include the suppliers, employees, host community as well as customers and business partners. And it was argued that this group of network is important other than owner-manager-employee relationship as in agency theory. It states that a communication link should be established with the employees by giving them rational and practical roles, beyond profits and interest, to increase their motivations. Organizations, groups or communities are affected by perceptions, emotions and behaviors of stakeholders according to their situations. Individuals are the participants of economic life cycle and they have continuous expectations in return for their labor and they make choices between alternatives. In this case, it is possible that the stakeholders can be in communication with the participants in their environment in order to gain interests. When we examine the roles of the stakeholders, we observe that especially the employees interact in multiple areas, inside and outside the organization and have multiple roles. An employee who is responsible for selling the product is a sales representative for the customer, a worker/officer / white collar employee in the eyes of the company owners and a customer in the eyes of suppliers.

### *Stakeholder Relationship Management*

The literature reveals that the success in the performance of the companies is related to the continuation of the good relations with both internal and external stakeholders. Since early contributions of stakeholder management theory, the very same concept of stakeholder become the foundation for a new theory of the firm that asks managers to "create as much value as possible for stakeholders, without resorting to trade-offs" (Freeman, Harrison, Wicks, Parmar & De Colle, 2010). The main philosophy in the stakeholder theory is that it is necessary to protect good relations within the environment by recognizing the activities and objectives of the business. Fundamentally, the attitudes and behaviors of employees affect the performance of the enterprises, which is then reflected in consumer behavior. Owners of shares in the business are legally entitled to share in the profits they earn, as well as being a priority in the business (Van de Velde 2018). Stakeholder theory and stakeholder approach suggest that institutions should take into account their impacts and responsibilities on the stakeholders they address (Bonnafous-Boucher & Rendtorff 2016). According to Kristen (2015), a stakeholder is a group of people whose affiliation with an organization can have consequences for said organization and potentially, through this relationship, create problems for each other. For this reason, "each individual and every group affected by its actions, decisions, policies, practices, and purposes" is a stakeholder (Becan 2011). Analyzing the relationships with stakeholders will help to build the right strategies in stakeholder management, as well as to increase the positive impacts of the stakeholders and reduce adverse effects (Miles 2017). Although the stakeholder relationship

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management has not been fully explained due to the various different market and sector factors, the number of new studies in this field shows the importance of stakeholder relationship management for the business. Understanding sustainable business practices requires defining the concept and examining the values and principles governing the concept. There is no single definition for sustainable business practices. It means many different things to many different people. The general consensus is that a sustainable business is one that is economically viable, socially responsible, and environmentally friendly (Beal et al., 2017; Daood & Menghwar, 2017). In a business, we will be able to see from two different perspectives: a business point of view (organizationally) and aspects outside the business that affect the business. From an organizational point of view, the business aspect is an internal factor of a company/business. The internal aspect of a business can be seen from the owner/entrepreneur and the organization (management aspect) (Harianto & Sari, 2021). Management of management aspects must be carried out carefully and optimally to accelerate the growth of the ongoing business. External aspects of a business are outside but can influence business continuity. For example, customers are aspects that are outside a company. However, the amount of customer loyalty in consuming products produced by a company will affect the size of a company's income (Muhamad & Rilvani, 2021). Business sustainability is synonymously related to sustainable development, which has been defined as the development that meets the needs of the present without compromising the ability of future generations to meet theirs. This approach includes three dimensions of sustainability: environmental, social, and economic, directly addressing the issue of environmental damage that generally goes hand in hand with economic growth, which is opposed to the need to promote growth to reduce poverty. To avoid this controversy, organizations must be responsible when exploiting natural resources, so they are not permanently damaged or depleted but used in such a way that they can continue to be useful indefinitely. Currently, De Carvalho, Chim-Miki, Da Silva, & De Araujo (2019) refer that corporate sustainability implies incorporating sustainable development objectives into the company's operational practices by designing goals that seek to achieve equity social and economic efficiency and environmental performance. Wong and Ngai (2021) allude that the capacity for sustainability in companies is conceptualized through three components: organizational competence in terms of social welfare and management competence; environmental competence in terms of the application of the five Rs (repair, redesign, recycle, reuse and reduce), and economic competence, in terms of market-driven competition and innovation. Sustainable business management must meet the stakeholders' requirements in different economic, environmental, and organizational aspects. The stakeholder theory is a fundamental conceptual approach that emphasizes the links between society and business and maximizes value for interacting stakeholders. By building sustainable relationships with stakeholders outside and within the company and coordinating them to achieve business sustainability goals, companies can achieve an excellent shared business vision (Garcia, 2022).

### STAKEHOLDERS' INTEREST

Traditionally, in stakeholder research, stakeholder interests are understood as stakes (Kujala et al., 2019; However, stakeholder interests can also relate, for example, to the joint interests of stakeholders, to stakeholder collaboration and trust between stakeholders or to stakeholder communication and learning with and from stakeholders. In this study, we understand stakeholder interests as value-based motivations, expectations and stakes. Carroll (1989) argued that value-based motivations (in the form of taste, priority and preference) generate interest in decisions affecting stakeholders. Stakeholder interests include expectations that stakeholders perceive to be important with regard to the issue at hand (Mylykangas, 2009). While stakeholder resistance to routine and programmed decisions is minimal, it may be more likely to be met with resistance in terms of the reflection of non-routine decisions on organizational stakeholders. Some decisions involve change and the damage to some interests due to the change brought about by this new decision causes resistance: the more the power and number of people whose interests are damaged, the stronger the resistance (Çalışkan, 2019). Organization manager decides on behalf of the organization and his decision; the goals of the organization, the expectations of the employees and other stakeholders of the organization are affected. (Çelikten, Gılış, Çelikten & Yıldırım 2019). New decisions involve new processes, and this is actually a matter of change. Resistance to undesirable decisions and resistance to change are interconnected issues. In organizations, resistance to a change may occur due to Personal, Sociological, Economic and Organizational reasons. According to Dyllick and Hockerts (2002), corporate sustainability requires a firm to meet the needs of both its direct and indirect stakeholders. This means that firms should consider not only the needs of current stakeholders but also that of future stakeholders. In other words, a sound stakeholder management involves both short-term and long-term issues related to economic, environmental and social impacts. Stakeholder analysis refers to the activities of a firm to identify and prioritize its critical stakeholders, evaluate their needs, collect relevant ideas, and integrating them into its strategic management processes. On the whole, stakeholder analysis is the first step of stakeholder management; in this stage, a firm needs to acknowledge its critical stakeholders and their influence. Stakeholder engagement which is the tunnel for stakeholders' interests emphasize the nurturing of ongoing development of stakeholder relationships, involving more communication between the firm and its stakeholders in order to create shared values and searching for common

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goals, rather than only building buffers between the firm and its stakeholders for minimizing their impacts on the firm, such as regulatory compliance and public relation activities. Nurturing stakeholder relationship focuses on value creation and learning, including the acquisition of critical resources and strategic information as well as the development of problem-solving capabilities.

### HOST COMMUNITY RELATIONS

In his efforts to meet his socio-economic needs, quest for industrialization, development, science and technology, man has significantly altered the natural environment thereby causing considerable damage to the biosphere (Nwosu, 2017). Indisputably, the bitter experience of the Oil producing areas in Nigeria generally has been both unprecedented and indeed regrettable. Unfortunately, most of the multinational Oil companies operating in the Niger-Delta region of Nigeria have failed to adopt best practices regarding strategies for risk mitigation and compliance with environmental regulations (Ite, Ibok, & Petters, 2013). According to historical sources, the environment in Nigeria's Niger Delta has been completely devastated by six decades of Oil exploration, exploitation, and ecological warfare by Oil companies led by Shell, Exxon-Mobil, Agip, Elf, etc since the discovery of crude oil in Nigeria in 1956. There have been cases of Oil spillage and devastating ecological damage which have crippled agricultural activities, fishing, and the entire economic life of the people. It is now generally acknowledged that the level of agricultural productivity is almost non-existent in the entire Niger Delta coastline having been on the decline in most of the Oil producing areas of the country (Godson-Ibeji, 2016). Apart from physical destruction to the plants and rivers around the areas where such spillages occur, gas flaring is known to cause the deposit of thick soot on the roofs of buildings in the areas where flaring is done in addition to the excessive heat it produces which depletes the ozone layer. The soot is believed to contain some dangerous chemicals such as amorphous carbon that adversely affect the fertility of the soil, as well as contaminate the rivers, streams, and other sources of natural water. These gas flaring facilities are often located close to local communities and typically lack adequate protection for villagers who regularly get exposed to the heat from the flaring in their daily activities (Nriagu, Udofia, Ekeng, & Ebuk, 2016). According to Akinyemi *et al* (2012), many pipelines and flow lines are old and subject to corrosion. Indeed, while fifteen to twenty years is the estimated lifespan of most pipelines, in many parts of Nigeria's Niger Delta region, pipelines aged forty to sixty years old can be found. Expectedly therefore, the consequences of this neglect and poor maintenance culture have begun. There have been Oil blowouts and spillages in several Oil bearing communities with the attendant contamination of farmlands, rivers, streams, and all other sources of natural water, killing of marine life, general malnutrition of the inhabitants of the affected communities, and by extension an outright disruption of the entire ecosystem in the area concerned. This increase in industrial waste released in the course of Oil related activities which are often times channelled into farmlands and water bodies have further devastating effects on the communities in question such as navigational problems, depleting of aquatic life and the general aesthetic value of society. Since the problems of environmental management and resolution of industrial relations disputes is the responsibility of all of us – sociologists, lawyers, and environmentalists in liaison with relevant government agencies, and being an issue that involves the cross-pollination of man with his socio-economic environment, there are bound to exist conflicts, disputes, clashes, and aspirations. The position of a 'stakeholder' – the local (Indigenous) community – in the context of the global South is also reflected at the disciplinary level. While business ethics focuses on the corporate viewpoint or performance, development studies and development ethics approach the phenomenon from a different angle, by emphasizing the position of local, often marginalized communities: How do external forces – global corporations – affect the local level development processes, in regard to basic needs, human rights and social justice? What kind of interfaces take place between intended development interventions and actual development processes? What are people's collective responses and claims to the firm? What are the obligations, if any, of rich societies (and their citizens) to poor societies? How can moral guidelines influence decisions of those who hold power? It can be argued that since in development studies emphasis is directed on the agency and power dynamics – namely the power distance between actors, also within a community itself as community dynamics – the 'stakeholder' concept inherently raises critical notions. Bruijn and Whiteman (2010) found that the stakeholder position is affected by Indigenous self-identity processes, as Indigenous identity can be both threatened and strengthened in response to the corporation's actions. They also regard this as having broader implications for management ethics, and they discuss how Indigenous self-identity processes create a significant challenge for the stakeholder theory. Corporate Social Responsibility has been a major concern of communities, governments, and civil society organizations in Nigeria and is expected to be integral to industry today as a password to not only overcome competition, but to ensure sustainable growth. It has been supported by the shareholders and other stakeholders, by and large encompassing the whole community. Corporate Social Responsibility in reality is the alignment of industry operations with social values. It takes into account the interests of stakeholders in the company's business policies and actions. It focuses on the social, environmental, and financial success of a company – the so called "triple bottom line" with the aim of achieving social development alongside business success. More importantly, Corporate Social Responsibility is the point of convergence of various initiatives aimed at ensuring socio-economic development of the community



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as a whole in a credible and sustainable manner (Wilenius, 2005). However, Aaron & Patrick (2008) stressed that the experience of communities where companies operate has been that of total decay and underdevelopment. There is little effort by companies operating in communities to control and reduce the impact of their activities on people and the environment. The negative impacts of these corporate activities, especially by the multinationals have been observed in ethical issues such as environmental health, safety, disregard for local content, failure to promote workers participation through consultation, failure to develop vocational skill and life-long training, climate change, corruption, and human rights abuses.

### EMPLOYEE RELATIONS

Employee relations refer to the efforts of an organization to offer a positive working environment for its colleagues (Bakker & Leiter, 2017). This act ensures that the employees receive a constructive and positive workplace. Employee relations are emphasized through different perspectives of the management. Effective employee relations keep the employees loyal as well as engaged. The HR department of an organization is in charge of managing the efforts of employee relations. In employee relationships, government plays a role in the employers, workers, unions and directly and indirectly government interacts with some rules and regulations of the working relationships. This also leads to having interaction between state and employer, trade unions and employees comes under the employment contract which refers to "employee relationships". The general agreement of the industrial relations comprises collective bargaining, the evolving nature of the workforce, and a mechanism to resolve the disputes of the individual (Isayan, 2020). Manager-Employee relations can be described as the informal interaction between managers and their employees that contribute to satisfactory productivity, motivation, morale, and open communication in the workplace. Employees are the most crucial segment of a company's productive potential and good employee relationship management is critical for organizational success (Ugoani, 2020).

It deals with the avoidance and resolution of negative issues that may arise among employees in the course of the discharge of their official duties. Employee relations are encompassing. It involves creating a work environment that strives to satisfy both the needs of the employers and the employees, improving better communication, providing a system for grievance procedure, and having an organizational culture based on the values of trust, mutual respect and dialogue in the organization. Donohoe (2015) defines employee relations as the study of the relationship that exists between employees and the employers. Basically, effective employee relations places high premium on the human element in the organization, which results in higher employee engagement, motivation and improved productivity. Jing (2013) further buttress that employee relations is the organization's concerted effort in adopting several mechanisms to regulate relationship amongst employees towards the achievement of the organization goals. Companies on an international scale are more rooted in their social connections. In this sense, employee relations are seen as a crucial resource for achieving sustainable competitive advantage (Ricard, 2017). The key to survival of these businesses in a dynamic global business environment is anchored on the potential of sustainable business growth. Business growth is an indication of the success of a business entity. Business growth rate is as powerful in explaining the overall results of a business as other well-known variables such as size, operational efficiency, liquidity, leverage, inflation, exchange rate, economic growth and interest rate among others (Musah, Kong, Atwi, Donkor, Quansah & Obeng, 2019). Gupta, *et. al.* (2013) defined business growth in terms of revenue generation, creation of value, and expansion with respect to volume of the business. Business growth is typically defined and measured using absolute or relative changes in sales, assets, employment, productivity, profits and profit margins. Growth in business is a process of improving some measure of an enterprise's success largely through cost minimization and profit maximization. It can be defined in terms of revenue generation, value addition, and expansion in terms of volume of the business (Owolabi & Ogan, 2022). Aregbeyen (2012) identified the firm's previous growth rates, size, age capital intensity, financial constraints, management efficiency and the extent of vertical integration as significant determinants of business growth. Other researchers have carried out research on "Stakeholder Relations Management as a Public Relations Tool for Socio-Economic Development in Nigeria". Some researchers have also focused on "Do Stakeholder Relationship Management and Employee as a Stakeholder Behavior Affect Firm Performance? Research in Telecom Companies". But none have really touched Stakeholder Relationship Management and Business Sustainability within Indigenous oil and gas producing companies in Rivers State, using Stakeholders' interest, Host community relations and Employee relations as the dimensions and Growth, Less conflict and Profitability as the measures of the dependent variable while Organizational value systems stands as the moderating variable. This study intends to fill the gap of Stakeholder Relationship Management and Business Sustainability in Indigenous oil and gas producing companies in Rivers State because no much work have been specifically carried out in Indigenous oil and gas producing companies in Rivers State to examine Stakeholder Relationship Management and Business Sustainability. In the work environment, employees perceive that organizational values are decisive for achieving efficiency in the organization, given that they are considered in employee evaluations. Organizational values lay the foundations of organizational culture which, in turn,

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drive performance and are, therefore, highly significant for companies. Organizational values are dynamic in nature and can take different forms, including configuring themselves as shared values; if employees are asked what their values are.

### METHOD

This study is a descriptive study as such a cross-sectional survey design was adopted across all the 22 major oil and gas producing companies in Rivers State. Thus, the study adopted census method and administered three (3) copies of questionnaire to each of the twenty-two (22) indigenous oil and gas producing companies operating within the geographical spheres of Rivers State; this means that a total of sixty-six (66) respondents were used for the study. Categories of persons that formed the respondents were management staff. The study used the 4point Likert scale research questionnaire that closed ended in nature. The first section was designed to generate the demographic data of the respondents, the second section was structured to obtain data on the dimensions of Stakeholder Relationship Management, third is to elicit response and generate data on the measures of Business Sustainability and the last section is to generate data on the moderating variable. The questionnaire is the structured closed-ended that allows for easy interpretation of data and designed in the four points Likert scale format in the order of SA = Strongly Agreed; A = Agreed; DA = Disagree and SD = Strongly Disagreed. The reliability test of the structured questionnaires was ascertained through Test-re-test in which a pilot administration of the questionnaire was made on a portion of the chosen sample and administered after two months and relationship between the two results determined by correlation coefficient, through SPSS version 20. Our reliability test also anchored on the Cronbach Alpha at 0.7. Ahiauzu (2006) has also reiterated that the Cronbach's Alpha is a good reliability coefficient that indicates how well items in a questionnaires set are positively correlated to one another.

#### Method of Data Analysis

Basically, there are two major sources of data collection which are primary and secondary data; the primary sources consist of structure of copies of questionnaires. The secondary sources are obtained from textbooks, journal, magazines and seminar. In this research, the study employed the use of questionnaire to aid data collection. The data collected was analyzed using descriptive statistical tools namely: Tables, Frequencies, Simple Percentage and Mean Score. The formulated hypothesis will be analyzed using Pearson Correlation statistic. Below is the Pearson's product moment correlation co-efficient formula.

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{\left( n \sum x^2 - \sum x^2 \right) \left( n \sum y^2 - (\sum y)^2 \right)}}$$

Where:

$r$  = Pearson product moment correlation coefficient,

$X$  and  $Y$  = individual observations of the two variables,

$\bar{X}$  and  $\bar{Y}$  = arithmetic means of the two sets of observations.

$n$  = number of bivariate observations.

**Table 1 No. of Questionnaire Distribution, Retrieve and Used**

	Questionnaire	Quantity	Percentage (%)
1	Distributed Copies	66	100
2	Retrieved Copies	59	95.16
3	Copies not Retrieved	7	4.83
4	Invalid Copies	6	9.67
5	Valid Copies	53	85.48

**Source: Research Data, 2022**

From table 1 above, it can be seen that 66 copies (100%) of the questionnaire distributed to the target respondents. However, 59 (95.16%) of the copies were retrieved, 7 (4.83) of the copies were not retrieved, 6 (10.44%) of the copies were invalid while 53(85.48%) were valid and used for the study.

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Bivariate Inferential Statistics

Decision rule

Reject  $H_0$  if  $PV < 0.05$

Accept  $H_0$  if  $PV > 0.05$

**Table 2 Showing Strength and Direction of Relationship between Variables**

Range of values	Degree of relationship
$\pm 0.00 - \pm 0.19$	Very weak
$\pm 0.20 - \pm 0.39$	Weak
$\pm 0.40 - \pm 0.59$	Moderate
$\pm 0.60 - \pm 0.79$	Strong
$\pm 0.80 - \pm 1.00$	Very strong

### Test of Hypotheses

**Table 3: Relationship between Stakeholders' Interest and Growth**

		Stakeholders' Interest	Growth
Stakeholders' Interest	Pearson Correlation	1	.692**
	Sig. (2-tailed)		.000
	N	53	53
Growth	Pearson Correlation	.692**	1
	Sig. (2-tailed)	.000	
	N	53	53

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the SPSS output on Table 3, it can be observed that there is a correlation coefficient of 0.692\*\* between Stakeholders' interest and growth, indicating a strong and positive relationship between Stakeholders' interest and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between Stakeholders' interest and growth. This further implies that most of the changes in growth among indigenous oil and gas producing companies in Rivers State are caused by their Stakeholders' interest while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between Stakeholders' interest and growth of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a strong, significant relationship between stakeholders' interest and growth of indigenous oil and gas producing companies.

**Table 4: Relationship between Stakeholders' interest and less conflicts**

		Stakeholders' Interest	Less Conflicts
Stakeholders' Interest	Pearson Correlation	1	.821**
	Sig. (2-tailed)		.000
	N	53	53
Less Conflicts	Pearson Correlation	.821**	1
	Sig. (2-tailed)	.000	
	N	53	53

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the SPSS output on Table 4, it can be observed that there is a correlation coefficient of 0.821\*\* between Stakeholders' interest and less conflicts, indicating a very strong and positive relationship between Stakeholders' interest and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between Stakeholders' interest and less conflicts. This further implies that most of the less conflicts experienced among indigenous oil and gas producing companies in Rivers State are caused by their Stakeholders' interest while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between Stakeholders' interest and less conflicts of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a very strong, significant relationship between stakeholders' interest and less conflicts of indigenous oil and gas producing companies.

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**Table 5: Relationship between Stakeholders Interest and Profitability**

		Stakeholders' Interest	Profitability
Stakeholders' Interest	Pearson Correlation	1	.679**
	Sig. (2-tailed)		.000
	N	53	53
Profitability	Pearson Correlation	.679**	1
	Sig. (2-tailed)	.000	
	N	53	53

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the SPSS output on Table 5, it can be observed that there is a correlation coefficient of 0.679\*\* between Stakeholders' interest and profitability, indicating a strong and positive relationship between Stakeholders' interest and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between Stakeholders' interest and profitability. This further implies that most of the profitability experienced among indigenous oil and gas producing companies in Rivers State are caused by their Stakeholders' interest while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between Stakeholders' interest and profitability of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a strong, significant relationship between stakeholders' interest and profitability of indigenous oil and gas producing companies.

**Table 6: Relationship between Host Community Relations and Growth**

		Host Community Relations	Growth
Host Community Relations	Pearson Correlation	1	.799**
	Sig. (2-tailed)		.000
	N	53	53
Growth	Pearson Correlation	.799**	1
	Sig. (2-tailed)	.000	
	N	53	53

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the SPSS output on Table 6, it can be observed that there is a correlation coefficient of 0.799\*\* between host community relations and growth, indicating a strong and positive relationship between host community relations and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between host community relations and growth. This further implies that most of the changes in growth among indigenous oil and gas producing companies in Rivers State are caused by their host community relations while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between host community relations and growth of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is strong, significant relationship between host community relations and growth of indigenous oil and gas producing companies.

**Table 7: Relationship between Host Community Relations and Less Conflicts**

		Host Community Relations	Less Conflicts
Host Community Relations	Pearson Correlation	1	.766**
	Sig. (2-tailed)		.000
	N	53	53
Less Conflicts	Pearson Correlation	.766**	1
	Sig. (2-tailed)	.000	
	N	53	53

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the SPSS output on Table 7 above, it can be observed that there is a correlation coefficient of 0.766\*\* between host community relations and less conflicts, indicating a strong and positive relationship between host community relations and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between host community relations and less conflicts. This further implies that most of the less conflicts experienced

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among indigenous oil and gas producing companies in Rivers State are caused by their host community relations while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between host community relations and less conflicts of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a strong, significant relationship between host community relations and less conflicts of indigenous oil and gas producing companies.

**Table 8: Relationship between Host Community Relations and Profitability**

		Host Community Relations	Profitability
Host Community Relations	Pearson Correlation	1	.820**
	Sig. (2-tailed)		.000
	N	53	53
Profitability	Pearson Correlation	.820**	1
	Sig. (2-tailed)	.000	
	N	53	53
**. Correlation is significant at the 0.01 level (2-tailed).			

From the SPSS output on Table 8, it can be observed that there is a correlation coefficient of 0.820\*\* between host community relations and profitability, indicating a very strong and positive relationship between host community relations and profitability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between host community relations and profitability. This further implies that most of the profitability experienced among indigenous oil and gas producing companies in Rivers State are caused by their host community relations while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between host community relations and profitability of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a very strong, significant relationship between host community relations and profitability of indigenous oil and gas producing companies.

**Table 9: Relationship between Employee Relations and Growth**

		Employee Relations	Growth
Employee Relations	Pearson Correlation	1	.718**
	Sig. (2-tailed)		.000
	N	53	53
Growth	Pearson Correlation	.718**	1
	Sig. (2-tailed)	.000	
	N	53	53
**. Correlation is significant at the 0.01 level (2-tailed).			

From the SPSS output on Table 4.20, it can be observed that there is a correlation coefficient of 0.718\*\* between employee relations and growth, indicating a strong and positive relationship employee relations and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between employee relations and growth. This further implies that most of the growth experienced among indigenous oil and gas producing companies in Rivers State are caused by their employee relations while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between employee relations and growth of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a strong, significant relationship between employee relations and growth of indigenous oil and gas producing companies.

**Table 10: Relationship between Employee Relations and Less Conflicts**

		Employee Relations	Less Conflicts
Employee Relations	Pearson Correlation	1	.548**
	Sig. (2-tailed)		.000
	N	53	53
Less Conflicts	Pearson Correlation	.548**	1
	Sig. (2-tailed)	.000	
	N	53	53
**. Correlation is significant at the 0.01 level (2-tailed).			

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From the SPSS output on Table 4.21, it can be observed that there is a correlation coefficient of 0.548\*\* between employee relations and less conflicts, indicating a moderate and positive relationship employee relations and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a moderate significant relationship between employee relations and less conflicts. This further implies that most of the less conflicts experienced among indigenous oil and gas producing companies in Rivers State are caused by their employee relations while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between employee relations and less conflicts of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a moderate, significant relationship between employee relations and less conflicts of indigenous oil and gas producing companies.

**Table 4.22 Relationship between and Employee Relations and Profitability**

		Employee Relations	Profitability
Employee Relations	Pearson Correlation	1	.738**
	Sig. (2-tailed)		.000
	N	53	53
Profitability	Pearson Correlation	.738**	1
	Sig. (2-tailed)	.000	
	N	53	53

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the SPSS output on Table 4.22, it can be observed that there is a correlation coefficient of 0.738\*\* between employee relations and profitability, indicating a strong and positive relationship employee relations and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between employee relations and profitability. This further implies that most of the profitability achieved among indigenous oil and gas producing companies in Rivers State are caused by their employee relations while others are caused by externalities. Based on this, we reject the null hypothesis that there is no significant relationship between employee relations and profitability of indigenous oil and gas producing companies and incline to the alternate hypothesis that there is a strong, significant relationship between employee relations and profitability of indigenous oil and gas producing companies

**Table 11: Moderating influence of Organizational Value Systems on the Relationship between Stakeholder Relationship Management and Business Sustainability**

Control Variables		Stakeholder Relationship Management	Business Sustainability	Organizational Value Systems	
-none <sup>a</sup>	Stakeholder Relationship Management	Correlation	1.000	.902	
		Significance (2-tailed)	.	.000	
		Df	0	51	
	Business Sustainability	Correlation	.902	1.000	.746
		Significance (2-tailed)	.000	.	.000
		Df	51	0	51
	Organizational Value Systems	Correlation	.665	.746	1.000
		Significance (2-tailed)	.000	.000	.
		Df	51	51	0
Organizational Value Systems	Stakeholder Relationship Management	Correlation	1.000	.839	
		Significance (2-tailed)	.	.000	
		Df	0	50	
	Business Sustainability	Correlation	.839	1.000	
		Significance (2-tailed)	.000	.	
		Df	50	0	

a. Cells contain zero-order (Pearson) correlations.

From the results of the analysis on Table 11, it can be observed that there is a correlation coefficient is 0.902 which indicate that stakeholder relationship management has a very strong and positive relationship with business sustainability. More so, the

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probability value is less than the critical value (1.e,  $p=0.000<0.05$ ) this implies that the result of the analysis is statistically significant. Also, the result indicates that there is a correlation coefficient of 0.839 indicating that organizational value systems has a very strong significant moderation of the relationship between stakeholder relationship management and business sustainability. More so, the probability value is less than the critical value (1.e,  $p=0.000<0.05$ ) this implies that the result of the analysis is statistically significant.

**Table 12: Correlation Matrix Showing Summary of all the Variables**

		Stakeholders' Interest	Host Community Relations	Employee Relations	Growth	Less Conflicts	Profitability
Stakeholders' Interest	Pearson Correlation	1	.816**	.503**	.692**	.821**	.679**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	53	53	53	53	53	53
Host Community Relations	Pearson Correlation	.816**	1	.563**	.799**	.766**	.820**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	53	53	53	53	53	53
Employee Relations	Pearson Correlation	.503**	.563**	1	.718**	.548**	.738**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	53	53	53	53	53	53
Growth	Pearson Correlation	.692**	.799**	.718**	1	.718**	.888**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	53	53	53	53	53	53
Less Conflicts	Pearson Correlation	.821**	.766**	.548**	.718**	1	.805**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	53	53	53	53	53	53
Profitability	Pearson Correlation	.679**	.820**	.738**	.888**	.805**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	53	53	53	53	53	53

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the correlation matrix on Table 12, it can be observed that there is a correlation coefficient of 0.692\*\* between stakeholders' interest and growth, indicating a strong and positive relationship between stakeholders' interest and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between stakeholders' interest and growth. This further implies that most of the changes in growth among indigenous oil and gas producing companies in Rivers State are caused by stakeholders' interest while others are caused by externalities; there is a correlation coefficient of 0.821\*\* between stakeholders' interest and less conflicts, indicating a very strong and positive relationship between stakeholders' interest and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between stakeholders' interest and less conflicts. This further implies that some of the less conflicts experienced among indigenous oil and gas producing companies in Rivers State are caused by stakeholders' interest while others are caused by externalities. Also, there is a correlation coefficient of 0.679\*\* between stakeholders' interest and profitability, indicating a strong and positive relationship between stakeholders' interest and profitability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong, significant relationship between stakeholders' interest and profitability. This further implies that some of the profitability achieved among indigenous oil and gas producing companies in Rivers State are caused by stakeholders' interest while others are caused by externalities. Accordingly, the Table shows a correlation coefficient of 0.799\*\* between host community relations and growth, indicating a strong and positive relationship between host community relations and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between host community relations and growth. This further implies that most of the changes in growth among indigenous oil and gas producing companies in Rivers State are caused by host community relations while others are caused by externalities; there is a correlation coefficient of 0.766\*\* between host community relations and less conflicts, indicating a strong and positive relationship between host community relations and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between host community relations and less conflicts. This further implies that most of the less conflicts experienced among indigenous oil and gas producing companies in Rivers State are caused by host community relations while others are caused by externalities. Also, there is a correlation coefficient of 0.820\*\* between host community relations and profitability, indicating a

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very strong and positive relationship between host community relations and profitability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between host community relations and profitability. This further implies that most of the profitability experienced among indigenous oil and gas producing companies in Rivers State are caused by host community relations while others are caused by externalities.

The Table further indicates that there is a correlation coefficient of 0.718\*\* between employee relations and growth, indicating a strong and positive relationship between employee relations and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a moderate significant relationship between employee relations and growth. This further implies that some of the changes in growth among indigenous oil and gas producing companies in Rivers State are caused by employee relations while others are caused by externalities; there is a correlation coefficient of 0.548\*\* between employee relations and less conflicts, indicating a moderate and positive relationship between employee relations and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a moderate significant relationship between employee relations and less conflicts. This further implies that most of the less conflicts experienced among indigenous oil and gas producing companies in Rivers State are caused by employee relations while others are caused by externalities. Also, there is a correlation coefficient of 0.738\*\* between employee relations and profitability, indicating a strong and positive relationship between employee relations and profitability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between employee relations and profitability. This further implies that most of the profitability experienced among indigenous oil and gas producing companies in Rivers State are caused by employee relations while others are caused by externalities.

Finally, the Table divulged a correlation coefficient of 0.839\*\* on the moderating influence of organizational value systems on the relationship between stakeholder relationship management and business sustainability, indicating that organizational value systems has a very strong and positive influence on the relationship between stakeholder relationship management and business sustainability of indigenous oil and gas producing companies in Rivers State. More so, the probability value (0.000) is less than the critical value (0.05), this shows that organizational value systems has a very strong significant influence on the relationship between stakeholder relationship management and business sustainability of indigenous oil and gas producing companies in Rivers State.

## DISCUSSION OF FINDINGS

The analysis of the study revealed a correlation coefficient of 0.692\*\* between stakeholders' interest and growth, indicating a strong and positive relationship between stakeholders' interest and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between stakeholders' interest and growth. The analysis results also revealed a correlation coefficient of 0.821\*\* between stakeholders' interest and less conflicts, indicating a very strong and positive relationship between stakeholders' interest and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between stakeholders' interest and less conflicts. Further, the study result showed a correlation coefficient of 0.679\*\* between stakeholders' interest and profitability, indicating a strong and positive relationship between stakeholders' interest and profitability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between stakeholders' interest and profitability.

The analysis of the study revealed a correlation coefficient of 0.799\*\* between host community relations and growth, indicating a strong and positive relationship between host community relations and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between host community relations and growth. The analysis results also revealed a correlation coefficient of 0.766\*\* between host community relations and less conflicts, indicating a strong and positive relationship between host community relations and less conflicts. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between host community relations and less conflicts. Further, the study result showed a correlation coefficient of 0.820\*\* between host community relations and profitability, indicating a very strong and positive relationship between host community relations and profitability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a very strong significant relationship between host community relations and profitability.

The analysis of the study revealed a correlation coefficient of 0.718\*\* between employee relations and growth, indicating a strong and positive relationship between employee relations and growth. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between employee relations and growth. The analysis results also revealed a correlation coefficient of 0.548\*\* between employee relations and less conflicts, indicating a moderate and positive relationship between employee relations and less conflicts. More so, the probability value (0.000) is less than the critical



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value (0.05), this shows that there is a moderate significant relationship between employee relations and less conflicts. Further, the study result showed a correlation coefficient of 0.738\*\* between employee relations and profitability, indicating a strong and positive relationship between employee relations and profitability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that there is a strong significant relationship between employee relations and profitability.

The analysis of the study revealed a regression coefficient of 0.902\*\* on the moderating influence of organizational value systems on the relationship between stakeholder relationship management and business sustainability, indicating that organizational value systems has a very strong and positive influence on the relationship between stakeholder relationship management and business sustainability. More so, the probability value (0.000) is less than the critical value (0.05), this shows that organizational value systems has a very strong significant influence on the relationship between stakeholder relationship management and business sustainability. The findings of this study are in consonance with the finding of authors in the area of organizational value systems. Specifically, Özçelik, Aybas & Uyargil (2016) whose study on “High performance work systems and organizational values: Resource-based view considerations” employed the descriptive survey research design and questionnaire method of data collection. Spearman Rank Order Correlation statistical tool was used to measure the study hypotheses and their findings revealed that organizational values permeate the ways in which organizations use them to operationalize their organizational culture.

## 5. CONCLUSION

In line with the findings of this study and to the extent of its consistency with results of similar previous studies, we conclude that stakeholder relationship management has a positive significant relationship with business sustainability of indigenous oil and gas producing companies in Rivers State. Thus, stakeholder relationship management is a key imperative for growth and improvement in business sustainability within the Rivers State oil and gas production sector given its stakeholders’ interest, host community relations and employee relations of stakeholder relationship which in turn impacts growth of the business, less conflict situations among stakeholders as well as profitability of the firm.

## 6. RECOMMENDATIONS

Based on the findings of the study and to the extent of its consistency with the result of similar studies we make the following recommendations.

1. Managers of indigenous oil and gas producing companies should capitalize on the pivot role of stakeholders’ interest in their operations to ensure their business sustainability.
2. Managers of indigenous oil and gas producing companies should seek to build strong relationships with their host communities in line with their company policies and practices aimed at achieving business sustainability.
3. Managers of indigenous oil and gas producing companies should apply objectivity in their employee relationship processes as this has the potency to either ruin or enhance their business sustainability.
4. Managers of indigenous oil and gas producing companies should provide the listed elements mentioned in this study to reciprocate the expectation of managers as they are key to business sustainability through stakeholder relationship management. The understanding of stakeholder relationship management potential in improving business sustainability will help managers and organizations focus their attention on thorough stakeholders’ interest, host community relations and employee relations of stakeholders. Thus, this study will serve as informant on the benefit and potential of stakeholder relationship management especially, stakeholders’ interest, host community relations and employee relations and how these will increase business sustainability in terms of growth, less conflicts and profitability of the firm.

## REFERENCES

- 1) Aaron, K. & Patrick, J. (2008). Oil TNC’s corporate responsibility practices and conflicts: A
- 2) Comparative analysis of three oil companies in selected oil-producing communities in the Niger Delta, *Conference proceedings*
- 3) Akinyemi, O.O., Nwaokocha, C.N., & Adesanya, A. O. (2012). Evaluation of corrosion cost of crude oil processing industry. *Journal of Engineering, Science, and Technology*, 7(4), 517- 528.
- 4) Aregbeyen, O. (2012). The determinants of firm growth in Nigeria. *Pakistan Journal of Applied Economics*, 22(1 & 2), 19-38
- 5) Bakker, A.B. & Leiter, M., (2017). Strategic and proactive approaches to work Engagement. *Organizational Dynamics*, 46(2), pp.67-75.

## Stakeholders Management Indicators: The Business Sustainability Inference

- 6) Beal, D., Eccles, R., Hansell, G., Lesser, R., Unnikrishnan, S., Woods W., & Young, D. (2017). Total societal impact: A new lens for strategy. Retrieved February 10, 2020, from <https://www.bcg.com/en-in/publications/2017/total-societal-impact-new-lens-strategy.aspx>
- 7) Becan, C. (2011). Kurumsal Sosyal Sorumluluk Kavraminin Paydaş Teorisi ve İletişim Yaklaşımı Açısından Değerlendirilmesi: Bankaların Basın Bültenlerine Yönelik Bir İçerik Analizi. *Selçuk Üniversitesi İletişim Fakültesi Akademik Dergisi*, 7(1), 16-35.
- 8) Bonnafous-Boucher, M., & Rendtorff, J. D. (2016). *Stakeholder theory a european perspective*. palgrave macmillan. <https://doi.org/10.1057/9780230524224>
- 9) Bruijin, E. & Whiteman, G. (2010). That which doesn't break us: Identity work by local Indigenous' stakeholders, *Journal of Business Ethics*, 96, 479-495.
- 10) Carroll, A. B. (1989). *Business & society*. South-Western.
- 11) Çalışkan, A. (2019). Değişime Direnç: Bir Ölçek Uyarılama Çalışması. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 24(2), .237-252
- 12) Çelikten, M., Gılıç, F., Çelikten, Y. & Yıldırım, A. (2019). Örgüt Yönetiminde Karar Verme Süreci: Bitmeyen Bir Tartışma. *Mersin Üniversitesi Eğitim Fakültesi Dergisi - Mersin University Journal of the Faculty of Education*, 15(2): 581-592. Derleme / DOI: 10.17860/mersinefd.596817
- 13) Daood, A., & Menghwar, P. S. (2017). Understanding creating shared value. *Proceedings of the 10th Annual Conference of the EuroMed Academy of Business*. Rome, Italy.
- 14) De Carvalho, J. R. M., Chim-Miki, A. F., Da Silva, C. C., & De Araujo Carvalho, E. K. M. (2019). Análise multicriterial da competitividade empresarial sob tríplice perspectiva: *Financeira, Governança Corporativa e Sustentabilidade*. *Revista de Globalización, Competitividad & Gobernabilidad*, 13(2), 116-131. <https://doi-org.pbidi.unam.mx:2443/10.3232/GCG.2019.V13.N2.06>
- 15) DeJardine, M., Bansal, P., & Yang, Y. (2019). Bouncing back: building resilience through social and environmental practices in the context of the 2008 Global financial crisis. *Journal of Management*, 45(4): 1434–1460.
- 16) Donohoe, M. (2015). *What's the difference between employee relations and industrial relations?* Morgan McKinley Ireland. <https://www.morganmckinley.ie/article/its-all-about-relationships>
- 17) Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., & De Colle, S. (2010). *Stakeholder theory: the state of the art*. Cambridge: Cambridge University Press. <https://doi.org/10.1080/19416520.2010.495581>
- 18) Garcia, M. L. S. (2022). Business sustainability and financial performance. *Journal of Management* 38(72)
- 19) Godson-Ibeji, C. C. (2016). Consequences of environmental pollution on agricultural productivity in developing countries: A case of Nigeria. *International Journal of Agricultural and Food Research (IJAFR)* 5(3), 1-12.
- 20) Grandori, A. (2020). Black swans and generative resilience. *Management and Organization Review*, 16(3): 495–501.
- 21) Gupta, P. D., Guha, S. & Krishnaswami, S. S. (2013). Firm growth and its determinants. *Journal of Innovation and Entrepreneurship*, 2(15), 1-14
- 22) Harianto, R. A., & Sari, P. N. (2021). Strategic digitalization of UMKM business as an alternative to survive the COVID-19 pandemic. *Linguistics and Culture Review*, 5(S1), 617–663. <https://doi.org/10.21744/lingcure.v5ns1.1446>
- 23) Harrison, J. S., Bosse, D. A., & Phillips, R. A. (2010). Managing for stakeholders, stakeholder utility functions, and competitive advantage. *Strategic Management Journal*, 31: 58–74.
- 24) Isayan, D., (2020). *An evaluation and comparison between the United States' and Canadian policies and regulations governing industrial relations* (Doctoral dissertation, California State University, Northridge).
- 25) Ite, A.E., Ibok, U.J., Ite, M.U., & Petters, S.W., (2013). Petroleum exploration and production: past and present environmental issues in Nigeria's Niger-Delta. *American Journal of Environmental Protection*. 1(4), 78-90.
- 26) Jing, Z. (2013). *Research on employee relationship management of SMEs in china*. 1–7.
- 27) Kujala, J., & Sachs, S. (2019). The practice of stakeholder engagement. In J. S. Harrison, J. B. Barney, R. E. Freeman, & R. A. Phillips (Eds.), *The Cambridge handbook of stakeholder theory* (pp. 227–241). Cambridge University Press.
- 28) Miles, S. (2017). Stakeholder theory classification: A theoretical and empirical evaluation of definitions. *Journal of Business Ethics*, 142(3), 437-459.
- 29) Muhamad, L. F., & Rilvani, E. (2021). Systematic review: Perlindungan Konsumen Transaksi Online. *SMART Management Journal*, 40–46. <https://doi.org/10.2861/575866.8>
- 30) Musah, M., Kong, Y., Atwi, S. K., Donkor, M., Quansah, P. E. & Obeng, A. F. (2019). A study into growth and firms' financial performance: Evidence from the Ghana Stocl Exchange (GSE). *International Journal of Multidisciplinary Research and Development*, 6(5), 45-53

## Stakeholders Management Indicators: The Business Sustainability Inference

- 31) Myllykangas, P. (2009). *Sidosryhmäsuhteet liiketoiminnan arvon luomisessa: palveluyksiköstä liiketoiminnaksi, episodi yrityksen elämää* [Value-creation in stakeholder relationships—From a corporate sub-division to an independent service company]. Tampere University Press.
- 32) Myllylä, S. (2014). A concentric CSR roadmap model for host community relations in the global south. *Electric journal of business ethics and organization studies*, 19(1)
- 33) Nriagu, J., Udofia, E.A., Ekong, I., & Ebuk, G., (2016). Health risks associated with oil pollution In the Niger Delta, Nigeria. *International Journal of Environmental Research and Public Health*, 13(3).
- 34) Nwinyokpugi, P. N. (2015). Employee engagement and workplace harmony in Nigeria Civil Service. *International Journal of Innovative Research and Development*, 4(2), 199-204.
- 35) Nwosu, U. W., (2017). The relationship between oil industries and their host Communities in Nigeria's Niger-delta region. *International Journal of Public Administration and Management Research ( IJPAMR)*, 4(1)
- 36) Owolabi, T., & Ogan, T.P. (2022). Business growth and internal auditing. *International Journal of Economics, Management, Business and Social Science (IJEMBIS)*, 2(1), 22-33. <https://cvodis.com/ijembis/index.php/ijembis/article/view/43>
- 37) Ricard, J. (2017). Chapitre IV. En quête d'équilibre: le pouvoir des connexions sociales et politiques sur l'organisation. In *Réseaux de relations sociales, connexions et élitisme: Quels enjeux pour les organisations?* (Editions JFD, p. 91).
- 38) Sciarelli, M., Tani, M., Landi, G., & Papaluca, O. (2019). The impact of social responsibility disclosure on corporate financial health: evidences from some Italian public companies. *International Business Research*, 12(3), 109-122. <https://doi.org/10.5539/ibr.v12n3p109>
- 39) Ugoani, J. (2020). Managing employee relations and its effect on organizational success. *International Journal of Social Sciences Perspectives*.
- 40) Van de Velde, M. (2018). *Beyond shareholder theory: exploring effective business models balancing profits and purpose* (Doctoral dissertation, University of Glasgow).
- 41) Willenius, M. (2005). The age of corporate social responsibility: Emerging challenges for the business world. *Futures*, 37 (2-3), 133-150
- 42) Wong, D. & Ngai, E. (2021). Economic, organizational, and environmental capabilities for business sustainability competence: Findings from case studies in the fashion business. *Journal of Business Research*, 126, 440-471. <https://doi.org/10.1016/j.jbusres.2020.12.060>
- 43) Yongcai, Y. (2010). Employee relationship management of small and medium-sized enterprises. *2010 International Conference on E-Business and E-Government*, 940–943. <https://doi.org/10.1109/ICEE.2010.243>



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## Factors Affecting Customer Perceptions of Service Quality in Rural Tourism of Bangladesh



Karabi Kabir<sup>1</sup>, Uchinlayen<sup>2</sup>, Senkhing Nu<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Tourism and Hospitality Management, University of Dhaka, Bangladesh

<sup>2</sup>Assistant Professor, Department of Tourism and Hospitality Management, University of Dhaka, Bangladesh

<sup>3</sup>Masters of Business Administration, Comilla University, Bangladesh.

### ABSTRACT:

**Purpose:** This paper aims to investigate the perception of rural tourists regarding the present service attributes of Bangladeshi villages.

**Design/Methodology/Approach:** This research involved a preliminary data collection of 532 respondents who visited different touristic spots of Bangladesh situated in the rural areas. The collected data further processed through factor analysis and five factors have been identified.

**Findings:** The analysis reveals that the respondents are mostly neutral about the Cleanliness and Hygiene; Quality of Service and support from the local community. On the other hand they positively reacted about the calm and pleasant environmental condition but mostly dissatisfied about the recreational activities arranged for tourists.

**Practical Implications:** This research will guide the managerial areas of the rural tourism development in the perspective of Bangladesh.

**Originality/Value:** this is the first ever article focusing the overall development of service quality of rural tourism in the context of a developing county

**KEYWORDS:** Bangladesh, rural area, rural tourism, and service quality.

### 1. INTRODUCTION

Since the independence in 1971 Bangladesh economy is seeing an impressive track record of growth and poverty reduction. In the year 2015 this country reached lower-middle-income status, from being one of the poorest nations at birth. Bangladesh is now focusing more on diversified economy and overall development of the country. In Bangladesh majority of the country's population live in villages. Bangladesh is the land of 86038 villages (Source: Census 1991). Each of these villages has resources to offer unique tourist attraction. Specifically Nature-based, agricultural, cultural and riverine tourism have the prospect to grow in the rural areas of Bangladesh (Ahmed & Jahan, 2013). The economy of rural Bangladesh mostly depends on agriculture (Rahman, 2017). The diversification of the economic sector helps the poverty stricken population of this country to improve their economic condition. In this process tourism can play a vital role (Howlader, 2020, November 19). Each year thousands of backpackers and holiday makers visit rural destinations to enjoy their holidays. These movements during holidays play a vital role to speed up the economic condition of this country (The Financial Express, 8 July, 2022).

Tourism potentiality of these rural areas has recently come into focus. Rural tourism in Bangladesh is a prospective sector as recently the government of Bangladesh initiated projects to develop villages to have a range of civic amenities (The Financial Express, September 18, 2022). This article aims to identify the factors of the service quality of rural tourism of Bangladesh and the perspective of tourists regarding the present scenario of service attributes.

### 2. LITERATURE REVIEW

Providing quality services to rural tourists is a challenging task in the perspective of Bangladesh. In Bangladesh rural tourism basically developed as a form of eco-tourism, Ahmed & Jahan (2013). Besides agro-based tourism, nature-based tourism,

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cultural tourism, heritage tourism, riverine tourism etc. has major prospect. According to Negrusa et al (2007) rural tourism is kind of tourism which is provided by local residents in a rural destination with small lodging and other facilities. The study shows that village people are reluctant to switch their traditional occupation to other for lack of proper knowledge (Islam & Carlsen, 2012). Rural tourism can create job opportunities for local community that alleviates poverty of a state. However providing quality service and other necessary amenities are a fundamental task to develop rural tourism. Following discussion develop the conceptual background and hypothesis of this research.

### *Stakeholder theory*

In this research stake holder theory has been used to form the study framework as this theory is widely accepted by the scholars and the relevancy with this research topic makes it more suitable. According to Freeman (1984), any group of individual who is related the development of a tourism project is considered as a stakeholder. For tourism development the perceptions of stakeholders need to be understood both demand and the supply side (Dorcheh & Mohamed, 2013). Considering previous studies it reveals that there are number of actors in supply side (local government, community people, entrepreneurs etc.) but in the demand side tourists are the solo representative (Byrd, Bosley, & Dronberger, 2009). This study use stakeholder theory as the prominent theory to understand the perception of rural tourists to improve the service quality for the rural tourism destinations of Bangladesh. Thus the findings of this study will extend the literature of stakeholder theory through understanding the demand side of tourism business as well as tourists' point of view to improve the service quality of the rural tourism of Bangladesh.

### *Service quality*

Service quality or the quality of a service is defined by the customers. They compare the delivered service with their expectation and determine the quality of a service (Parasuraman, Zeithaml, and Berry, 1985). The quality of the services is measured not only by the technical elements but also by the functional elements. Assessing the quality of services is sometimes a difficult as the consumer may perceive it in different ways. However in tourism sector, destinations success is largely determined by the quality of service (Dwyer & Kim, 2003; Go & Govers, 2000; Tozser, 2010). In service attributes division lies between tangibility and intangibility. The tangible components include infrastructure and technologies on the other hand intangible components includes security, convenience, friendliness, and competence etc (Williams & Zigli, 1987). Besides environmental components of the destination (e.g. natural scenery, friendliness, and cleanliness) is also important to determine the destinations service quality (Murphy, Evans, & Storfer, 2010). Despite the importance of service quality in tourism sector very little study has been done to understand the perception of tourists regarding the service attributes of a tourist destination in the context of a developing country.

### *Measuring service quality*

There is no such specific measurement technique to measure the service quality of rural tourism. Different authors highlighted different issues in previous literature. The most significant problem is how the dimensions are going to be established in case of rural tourism. The foremost study conducted by Grönroos, C. in 1984. He suggested three dimension of ensuring service quality technical quality, functional quality, and image. Later Parasuraman, Zeithaml, & Berry (1985) improvised it from ten to five which were tangible elements, reliability, response capability, assurance, and empathy. Besides many more researchers took attempt to establish a concreat dimension of service quality but none can agreed upon same point. In the year of 1992 Babakus and Boller sate that the dimensions of service quality may differ in accordance with different pattern of services. Specifically functional qualities are subject to change for example the attitude of the service provider (Reichel, Lowengartand Milman, 2000).

Measuring service quality regards some concern. Mostly SERVQUAL analysis is the research instrument used to analyze the service quality and consumer perception about the services in tourism sector (Parasuraman, Zeithaml, & Berry, 1985; LeBlanc, 1992; Stevens, Knutson, & Patton, 1995). However, there are variations based on the nature of the business. Particularly RURALQUAL was first ever model designated for rural tourism (Loureiro & Miranda, 2009). It was based on the SERVQUAL model of Parasuraman, Zeithaml, & Berry (1985) model consisting 22 items. But this model was only focusing on the rural accommodation not on the overall experience of a customer. Other models related to rural tourism service quality include HISTOQUAL for historical houses (Frochot & Hughes, 2000) and ECOSERV for ecotourism (Khan, 2003). The summery of the articles fromwhich each items are being extracted are given below.

**Table 1: Sources of the Measurement Items**

Variables	Measurement Items	Sources
HE_01	Fresh and hygienic local food	Choi et al. (2008)
HE_02	Cleanliness of the accommodation facilities	Choi et al. (2008)

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HE_03	Restroom and bathroom facilities	Choi et al. (2008)
HE_04	Water quality	Mihalic (2000); Health (2003)
SQE_01	Modern, advanced technology such as the internet and mobile network	Fleischer et al. (1993)
SQE_02	Standard tourism facilities.	Fleischer et al. (1993)
SQE_03	Availability of Tourism-related information documents (e.g. tour map provided).	Fleischer et al. (1993)
SQE_04	Price level	Fleischer et al. (1993)
SQE_05	Roads for better access facilities	Fleischer et al. (1993)
SQE_06	Transportation service was good	Fleischer et al. (1993)
REE_01	Experiential activities for children	Choi et al. (2008)
REE_02	Experiential activities for adults	Choi et al. (2008)
REE_03	Physically activities in the natural setting.	Choi et al. (2008)
REE_04	Local communities' support and participation in cultural and folk events (e.g. art and crafts, dances, festivals)	Hamele (1988); Gebhard et al. (2007)
EE_01	Natural refreshing environment	Park and Yoon (2009)
EE_02	Natural Relaxing environment	Park and Yoon (2009)
EE_03	Calm and soothing atmosphere.	Mihalic (2000); Health (2003)
EE_04	Outside weather condition	Mihalic (2000); Health (2003)
EE_05	Air quality	Mihalic (2000); Health (2003)
CSE_01	Local resident's kindness and support	Jurowski (1994); Yoon (1998)
CSE_02	Supporting visitor services (e.g. home stays, entertainment, transport) arranged by local community	Jurowski (1994); Yoon (1998)
CSE_03	Tour guide services provided by the local communities.	Jurowski (1994); Yoon (1998)
CSE_04	Organizing Tourist's activity without compromising the local community's lifestyles.	Hamele (1988); Gebhard et al. (2007)

The measurements items are taken from different sources but the base of all this sources are basically SERVEQUAL. As SERVQUAL needs modification in response of the rural tourism context of Bangladesh the above mentioned items are organized to measure proper construct.

### 4. METHODOLOGY

To understand the tourist's perceptions about the service quality of the rural tourism sector of Bangladesh a survey was conducted among the tourists who have recently visited different tourists spots located in rural areas of Bangladesh. The main focus of this survey was to identify the managerial areas in the service quality of rural tourism which needs immediate attention. SERVQUAL technique is most appropriate to measure the quality of any services. This research is also rooted in Fleischer et al.'s SERVQUAL. However the researcher has modified the measurement statements based on the suitability of rural tourism of Bangladesh. Besides Fleischer et al.'s (1993) items some contemporary researches (Choi, Ann, Lee, & Park, 2018; Chin & Lo, 2017) have also been investigated to make the measurement statements more satisfactory (Table-1). In total 23 items were selected and the responses were measured in 5-point likert scale.

The data collection was conducted on line and a questionnaire was used as the data collection tool. The questionnaire was divided into two parts. The first part consisted of the demographic variables including – gender, age, occupation, monthly income, whether they have visited any rural tourist destination within the last six month, name of the visited destination, region of the visited destination and travel companion. The other half of the questionnaire was consisted of the statements about the service quality of rural tourism where they ranked their perception on a scale of 1 to 5; where 1 mean “highly dissatisfied” and 5 means “highly satisfied” This study used convenience sampling technique to collect data from the respondents. Close-ended questions were used in the questionnaire and a pilot test with random 100 samples was done before the actual survey. There was no concern arise at preliminary testing. Among 600 distributed questionnaires 532 were considered for this research. 67 were rejected due to missing information. The following table represented the demographic profile of the respondents.

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**Table 2: Socio-demographic profile of the respondents**

Gender	Frequency	Percentage	Region people visited	Frequency	Percentage
Female	196	37%	Barishal	37	7%
Male	336	63%	Chittagong	170	32%
Age			Dhaka	119	22%
20 or below	38	7%	Khulna	58	11%
21-29	413	77%	Mymensingh	35	7%
30-39	46	9%	Rajshahi	51	10%
40-49	22	4%	Rangpur	22	4%
50-59	11	2%	Shylhet	40	8%
60 or above	2	0.3%	Travel companion		
Occupation			Friends	296	56%
Self-employed	46	9%	Family (spouse, parents, relatives or children)	167	31%
Service Holder	67	13%	Colleagues	26	5%
Student	400	75%	Alone	43	8%
Unemployed	19	4%			
Monthly Income					
Less than 15,000				382	72%
15001-30000				78	15%
30001- 45000				32	6%
45001-60000				21	4%
60001-75000				9	2%
More than 75000				10	2%

The collection of data period frames between June to August. The survey questionnaire link was shared among different travel group and the respondents were asked to fill up the answer if they visited a rural tourist spot of Bangladesh within the last six months. Among 532 respondents 37% are female and 63% are male. The majority of the respondents (77%) are in 21-29 age groups. Most of them are students and their income level is less than 15,000 per month. In regional distribution of rural touristic spot it reflects that Chittagong division possesses majority number of destinations 32% followed by Dhaka 22%, Khulna 11%, Rajshahi 10%. The least visited division for rural tourism is Rangpur which consists only 4%. Analysis of the result further reveals that more than half of the respondents visited the destinations with their friends (56%), Rest 36% visited either with colleague or with friends. Only 8% of the respondents visited alone.

### 5. FINDINGS AND DISCUSSION

The perception of the visitors about the service quality of rural tourism of Bangladesh was mostly neutral. Most of the components range from 2 to 4 where majority lies in 3. This indicates tourists are not clear about their present situation of service quality they are neither satisfied nor dissatisfied. However the respondents are satisfied with the environmental elements as all components get 4 score in this category. This also indicates the main resource of rural tourism which is a calm and serene environment is present in our villages. Recreation and entertainment elements scored very poor which means tourists are not please about the present condition of entertainment activities designed for them. Besides in other categories - hygiene, local community support and service quality elements range 3.2 to 3.9, indicating the neutral position of the tourists.

**Table 3: Perception of rural tourists about the service quality attributes (means and standard deviation)**

Code		N	Mean*	Std. Deviation
Hygiene elements				
HE_01	Fresh and hygienic local food	532	3.7011	1.05363
HE_02	Cleanliness of the accommodation facilities	532	3.5094	1.11060
HE_03	Restroom and bathroom facilities	532	3.2143	1.21010
HE_04	Water quality	532	3.8271	1.07364

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Service quality elements				
SQE_01	Modern, advanced technology such as the internet and mobile network	532	3.2650	1.18499
SQE_02	Standard tourism facilities.	532	3.2594	1.06670
SQE_03	Availability of Tourism-related information documents (e.g. tour map provided).	532	3.1955	1.23177
SQE_04	Price level	532	3.4135	1.10896
SQE_05	Roads for better access facilities	532	3.6353	1.06233
SQE_06	Transportation service was good	532	3.5677	1.05281
Recreation and entertainment elements				
REE_01	Experiential activities for children	532	2.9643	1.32506
REE_02	Experiential activities for adults	532	3.3722	1.17916
REE_03	Physically activities in the natural setting.	532	3.2538	1.36870
REE_04	Local communities' support and participation in cultural and folk events (e.g. art and crafts, dances, festivals)	532	2.7650	1.37890
Environmental elements				
EE_01	Natural refreshing environment	532	4.2256	.92357
EE_02	Natural Relaxing environment	532	4.2124	.94181
EE_03	Calm and soothing atmosphere.	532	4.0714	.99081
EE_04	Outside weather condition	532	4.0489	1.04578
EE_05	Air quality	532	4.0451	.98474
Community support elements				
CSE_01	Local resident's kindness and support	532	3.7857	1.02655
CSE_02	Supporting visitor services (e.g. home stays, entertainment, transport) arranged by local community	532	3.4192	1.05188
CSE_03	Tour guide services provided by the local communities.	532	3.5996	1.14629
CSE_04	Organizing Tourist's activity without compromising the local community's lifestyles.	532	3.9756	.98452

\*This responses are based upon a 5-Likert scale range from 1 (Highly dissatisfied) to 5 (Highly satisfied)

The appropriateness of this study has been analyzed by Bartlett's test of sphericity. In Bartlett's test of sphericity examine the hypothesis that the variables are uncorrelated in the population

If each variable correlates perfectly with itself ( $r = 1$ ), the population correlation matrix is considered as an identity matrix in other cases it means there is no correlation with other variables ( $r = 0$ ) (Malhotra & Dash, 2011:590). Furthermore to test statistic for sphericity which is based on the conversion of the correlation matrix's determinants to a chi-square and null hypothesis can be rejected if the value of the test statistic is large. In case there is a failure to reject the null hypothesis will raise the question of the suitability of the factor analysis. The suitability of the factor analysis can also be confirmed by Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. According to Malhotra and Dash (2011:592), this index (KMO measure of sampling adequacy) compares the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. Small values of the KMO statistic indicate that the correlations between pairs of variables cannot be explained by other variables and that factor analysis may not be appropriate. (Table 4)

**Table 4: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.841
Bartlett's Test of Sphericity	Approx. Chi-Square	3072.734
	df	253
	Sig.	<.001

The appropriateness of this research has been clarified in Table 3. Here we can see that the Bartlett's test of sphericity is rejected the null hypothesis which means the population correlation matrix is an identity matrix. The approximate chi-square statistics is 3072.734 with 253 degrees of freedom, which is significant at the <.001 level. Furthermore the KMO statistic is 0.841



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which is also large (>0.5). The appropriateness of this data set been proved by this test so this data set can be considered for further analysis and in this case factor analysis technique will be used to reveal the important factors about the perception of the tourists about the service quality of rural tourism Bangladesh.

Five factors were extracted. All these factors met Kaiser's criterion with an eigenvalues greater than one and retained for the further analysis. The relative weight of each factor in the total variance was calculated, taking into account proportion of total variances explained by each factor, while cumulative variance showing the amount of variance explained (Escofier & Pages, 1988).

**Table 5. Factor analysis of tourists' perception about the service quality of rural tourism of Bangladesh**

Component*	Factor Loadings**					Communality***
	1	2	3	4	5	
<b>Factor 1: Calm and pleasant environmental condition</b>						
Natural Relaxing environment	.801					.653
Natural refreshing environment	.772					.628
Air quality	.684					.547
Calm and soothing atmosphere.	.639					.468
Outside weather condition	.615					.542
<b>Factor 2: Quality of service</b>						
Availability of Tourism-related information documents (e.g. tour map provided).		.666				.525
Transportation service was good		.612				.517
Roads for better access facilities		.578				.430
Modern, advanced technology such as the internet and mobile network		.564				.457
Price level		.525				.333
Standard tourism facilities.		.515				.485
<b>Factor 3: Cleanliness and hygiene</b>						
Restroom and bathroom facilities			.739			.629
Cleanliness of the accommodation facilities			.692			.559
Fresh and hygienic local food			.560			.452
Water quality			.539			.552
<b>Factor 4: Support from the local community</b>						
Tour guide services provided by the local communities.				.662		.543
Local resident's kindness and support				.632		.502
Supporting visitor services (e.g. home stays, entertainment, transport) arranged by local community				.535		.496
Organizing Tourist's activity without compromising the local community's lifestyles.				.520		.331
<b>Factor 5 : Recreational activities arranged for tourists</b>						
Local communities' support and participation in cultural and folk events (e.g. art and crafts, dances, festivals)					.648	.564
Physically activities in the natural setting.					.634	.473
Experiential activities for children					.551	.488
Experiential activities for adults					.544	.416
Eigenvalues	5.182	2.558	1.547	1.186	1.117	
Percentage of total variance****	22.531	11.123	6.727	5.157	4.855	
Extraction Method: Principal Component Analysis.						
Rotation Method: Varimax with Kaiser Normalization*						
Here,						
**Factor loadings => 0.50						
*** Communality => 0.50						
****Total variance Explained = 50.393%						

The first factor labeled as "Calm and pleasant environmental condition" accounts for 22% of variance. This consist attributes related air quality, weather condition and condition of the natural purity. Most respondents have reported positively regarding this issue. The second factor "Quality of service" includes some essential service elements which are required at this stage of

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rural tourism development of Bangladesh. Respondents seem to have neutral position regarding this issue which also indicates there is room for improvement. The third factor “Cleanliness and hygiene” include attributes which is required to provide a safe and pure accommodation for the villagers it includes attributes like – water quality, restroom facilities, food accommodation. The examination of raw scores reveals that tourists are neutral regarding these things. Factor four, “Support from the local community”, relates to the community support in different activities including accommodation, co-operation, tour guiding etc. Factor five, “Recreational activities arranged for tourists” relates to the activities arranged for the tourists to enjoy their spare time during travel period.

### CONCLUDING REMARKS

This study reveals that rural tourism in Bangladesh has possibilities to explore as a profitable sector. The identified factors reveals that villages of Bangladesh has all required natural resources essential for developing rural tourism. Each of the tourist spot has refreshing, relaxing, calm environment with favorable weather condition. The local communities are supportive towards tourists which is another positive factor in terms developing rural tourism. The service quality and hygiene elements marked average by the tourists which indicates a managerial focus needs to be enhanced to maintain better hygiene and service. The factor that is mostly negatively marked by the tourists is the experiential activities arranged for the tourists. An immediate attention needs to be drawn to increase the number of experience based, cultural and physical activities for tourists.

### REFERENCES

- 1) Ahmed, I. & Jahan, N. (2013). “Rural Tourism-Prospects in Rustic Bengal”, *European Journal of Business and Management*, 5 (16), pp. 163-171.
- 2) Babakus, E., & Boller, G. W. (1992). An empirical assessment of the SERVQUAL scale. *Journal of Business research*, 24(3), 253-268. Bangladesh Census 1991.
- 3) Byrd, E. T., Bosley, H. E., & Dronberger, M. G. (2009). Comparisons of stakeholder perceptions of tourism impacts in rural eastern North Carolina. *Tourism Management*, 30, 693–703.
- 4) Choi, H., Ann, S., Lee, K. W., & Park, D. B. (2018). Measuring service quality of rural Accommodations. *Sustainability*, 10(2), 443.
- 5) Chin, C. H., & Lo, M. C. (2017). Rural tourism quality of services: Fundamental contributive factors from tourists’ perceptions. *Asia Pacific Journal of Tourism Research*, 22(4), 465-479.
- 6) Creswell, J. W. (1998), *Qualitative Inquiry and Research Design: choosing among Five Traditions*. Thousand Oaks: SAGE Publications.
- 7) Dwyer, L., & Kim, C. (2003). Destination competitiveness: Determinants and indicators. *Current Issues in Tourism*, 6(5), 369–414.
- 8) Dann, G., Nash, D., Pearce, P. (1988), *Methodologies in tourism research*. *Annals of Tourism Research*, 15, 1-28.
- 9) Dorcheh, S. A., & Mohamed, B. (2013). Local perception of tourism development: A conceptual framework for the sustainable cultural tourism. *Journal of Management and Sustainability*, 3 (2), 31–39
- 10) Escofier, B. & Pages, J. (1988). *Analyses factorielles simples et multiples*. Paris: Dunod.
- 11) Frochot, I.; Hughes, H. (2000) HISTOQUAL: The development of a historic houses assessment scale. *Tourism Management*. 21, 157–167.
- 12) Freeman, R. (1984). *Strategic management: A stakeholder approach*. New York: Cambridge University.
- 13) Fleischer, A., Rotem, A., & Banin, T. (1993). New directions in recreation and tourism activities in the rural sector in Israel. Development study center of Rehovot, Israel.
- 14) Gebhard, K., Meyer, M., & Roth, S. (2007). Criteria for sustainable tourism for the three Biosphere Reserves. Aggtelek, Babia Góra and Šumava. *Ecological Tourism in Europe and UNESCO MaB*.
- 15) Go, F. M., & Govers, R. (2000). Integrated quality management for tourist destinations: A European perspective on achieving competitiveness. *Tourism Management*, 21, 79–88.
- 16) Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of marketing*.
- 17) Hamele, H. (1988). A major impact. *Naturoopa*, 59, 5–7.
- 18) Health, E. (2003). Towards a model to enhance destination competitiveness: A Southern African perspective. *Journal of Hospitality and Tourism Management*, 10(2), 124–141.
- 19) Howlader, M. Z. H (2020, November 19). Rural development through tourism. *The Financial Express*.
- 20) Jurowski, C. (1994). *The interplay of elements Affecting Host community resident attitudes toward tourism: A path analytic approach (PhD dissertation)*. Virginia Polytechnic Institute and State University.

## Factors Affecting Customer Perceptions of Service Quality in Rural Tourism of Bangladesh

- 21) Islam, F. & Carlsen, J. (2012). "Tourism in Rural Bangladesh: Unlocking Opportunities for Poverty Alleviation?", *Tourism Recreation Research*, Vol.37, No.1.
- 22) Khan, M. (2003) ECOSERV: Ecotourists' quality expectations. *Annals of Tourism Research*, 30, 109–124.
- 23) Loureiro, S. M. C., & Miranda González, F. J. (2009). Perceived quality in rural lodgings in Spain and Portugal: the ruralqual scale. *Portuguese Journal of Management Studies*, 14(1), 33-52.
- 24) LeBlanc, G. (1992). Factors affecting customer evaluation of service quality in travel agencies: An investigation of customer perceptions. *Journal of Travel Research*, 30(4), 10-16.
- 25) Long, P., Lane, B., (2000), Rural tourism development. In: Gartner, W.C., Lime, B.W., editors. *Trends in Outdoor Recreation, Leisure and Tourism*. Wallingford: CAB International. P299-308.
- 26) Mihalic, T. (2000). Environmental management of a tourist destination: A factor of tourism competitiveness. *Tourism Management*, 21, 65–78.
- 27) Malhotra, N. K., & Dash, S. (2011). *Marketing research: An applied orientation* (6th Ed.). New Delhi: Pearson Education India
- 28) Marshall, M.N. (1996), Sampling in qualitative research. *Family Practice an International Journal*, 13(6), 522-525.
- 29) Merriam, S.B., (2009), *Qualitative Research: a Guide to Design and Implementation*. San Francisco: Jossey-Bass.
- 30) Murphy, M. A., Evans, J. S., & Storfer, A. (2010). Quantifying *Bufo boreas* connectivity in Yellowstone National Park with landscape genetics. *Ecology*, 91, 252–261.
- 31) Negrusa, A. L., Cosma, S. A., & Bota, M. (2007). Romanian rural tourism development a case study: rural tourism in Maramures. *International Journal of Business Research*, July.
- 32) Park, D. B., & Yoon, Y. S. (2009). Segmentation by motivation in rural tourism: A Korean case study. *Tourism Management*, 30, 99–108.
- 33) Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implication. *Journal of Marketing*, 49, 41–50.
- 34) Reichel, A.; Lowengart, O.; Milman (2000). Rural tourism in Israel: Service quality and orientation. *Tourism Management* 21, 451–459.
- 35) Rahman, M. (2017). Role of agriculture in Bangladesh economy: uncovering the problems and challenges. *International Journal of Business and Management Invention*, 6(7).
- 36) Stevens, P., Knutson, B., & Patton, M. (1995). DINESERV: A tool for measuring service quality in restaurants. *The Cornell Hotel and Restaurant Administration Quarterly*, 36(2), 5-60.
- 37) Tozser, A. (2010). *Competitive tourism destination: Developing a new model of tourism competitiveness* (Unpublished PhD thesis). University of Miskolc, Faculty of Economic
- 38) The Financial Express (2022, July 8) Eid trip: Thousands leave Dhaka.
- 39) The Financial Express (2022, September 18) 87,230 villages to get modern civic amenities
- 40) Yin, R.K. (2009), *Case Study Research: Design and Methods*. 4th ed. USA: Lexington Books.
- 41) Williams, R. H., & Zigli, R. M. (1987, July). Ambiguity impedes quality in the service industries, *Quality Progress*, p. 14.
- 42) Yoon, Y., Gursoy, D., & Chen, J. (2000). Validating a tourism development theory with structural equation modelling. *Tourism Management*, 22(4), 363–372.



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## Study of Esports in Sports Epistemology Perspective

Wahyu Dwi Santoso<sup>1</sup>, Muhammad Hamid Anwar<sup>2</sup>, Ahmad Nasrulloh<sup>3</sup>, Afeb Chesa Arianto<sup>4</sup>,  
Amri Hartanto<sup>5</sup>, Andrian Rahman Ayudi<sup>6</sup>

<sup>1,2,3,4,5,6</sup> Department of Sport Science, Yogyakarta State University, Yogyakarta Indonesia



**ABSTRACT:** Esports is a strong phenomenon, especially in the world of children, youth, and youth. This study aims to contribute new ideas, ideas, and perspectives in the debate on Esports discourse in the world of sports, as well as in order to raise the awareness of sports academics to study more deeply about esports from various points of view of sports science. The research method used is library research. Data collection techniques by conducting a review study of books, literature, notes, journals and reports. Judging from the three main elements in sports, physical, competition and institutional, Esports cannot be identified as a sport mainly because of the physical activity missing in Esports. Although the movements that look amazing cannot be ascribed to Esports players, they require some motor skills in playing the game including hand-eye coordination and speed of action with strategic and tactical understanding but that is still considered lacking and still far from being a sport. Besides that, there is an element of addiction and symptoms of lack of movement, if you play video games too often, it is also a consideration in determining Esports as a sport. It is necessary for the role of various stakeholders and appropriate government institutions to handle esports so that they can develop and contribute as expected.

**KEYWORDS:** esport, sports epistemology

### INTRODUCTION

At first glance, perhaps people will not be so interested in studying the meaning of sport. The turmoil in the sports body has not subsided to define itself from various perspectives of practitioners and experts in the sports space; a strong phenomenon has emerged in the world of sports with the presence of the discourse of Esports. Esports are the same as sports in general but are mediated by a set of computers such as the following opinion "Esports is a form of sport in which electronic systems facilitate the main aspects of sports; player and team input and output from eSports systems are mediated by human-computer interfaces (Reitman et al., 2020). Games that can be included in the eSports category are games that have a competitive element, where at the start all players are in the same state and have the same probability of winning the match" (Funk et al., 2018); (Holden et al., 2017). To succeed in eSports games, motor skills and abilities, especially fine motor skills of hands and fingers, as well as eye-hand coordination and local endurance, are crucial (Thiel & John, 2018).

Most people see E-Sport as a form of Sport involving the definition of Sport found in the Oxford English Dictionary, where the sport is defined as an activity involving physical exertion and skill in which an individual or team competes with others for entertainment. While playing video games, there is a rise in basal blood pressure, and during competition and training video games, athletes exhibit signs that are perceived as a physical effort to follow the routine of an athlete or video game professional. These signs are correlated with the definition of sport because, during tournament activities, E-sport athletes also show the same physical signs as athletes in general (Kane & Spradley, 2017); (Marelič & Vukušić, 2019); (DiFrancisco-Donoghue et al., 2019). Another statement is seen from the skills possessed by E-Sport athletes, were to become an athlete, one must have a variety of skills and techniques to improve their competence in winning a match.

The development of eSports has also begun to get support from various international federations, which for the first time will be inaugurated as an official sport at the 2019 Southeast Asian Games in the Philippines, and the plan is also to become an official sport at the 2022 Asian Games in Hangzhou. The growth and development of this eSports sport do not only occur in the Asian region, but throughout the world, even some media reports that eSports world championships such as the League of Legends World Championship and The International 2018 beat the number of spectators for sports in general such as the NBA, Baseball World Series, and Stanley Cup (Rosenthal, 2021).

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Recently, several studies in esports have focused on the psychological similarities and differences between esports and traditional sports (Himmelstein et al., 2017); (Polman et al., 2018). Esports athletes must be able to maintain a high level of attention and make important decisions under time pressure, underscoring the psychological similarities between esports and established sports (Bányai et al., 2019); (Pedraza-Ramirez et al., 2020). From a health perspective, it turns out that there are findings that esports players also experience health problems as stated by Hallie Zwibel in an article published by mediaindonesia.com on October 31, 2020, Zwibel and the team observed that esports athletes usually practice three to 10 hours per day to perfect their strategies and reflexes in the game. Previous research found that 56% of esports athletes experienced eye fatigue, 42% reported neck and back pain, 36% wrist pain, and 32% hand pain. In addition, 40% of them admitted to not doing any physical activity on any given day and only 2% of them admitted to having sought or requested medical treatment. Some of the disorders encountered, for example, metabolic dysregulation due to sitting too long (Zwibel et al., 2019).

Zwibel's opinion above is also almost the same as research conducted on East Java mobile legend athletes written by Sinatra & Rochmania (2022) saying that from the results of questionnaire data 77.8% of esports athletes experienced an increase in eye health disorders, 66.7% of E athletes Sports experienced health problems in the back, 77.8% had health problems in the wrist, 72.2% had health problems in the fingers, 77.8% had health problems in the neck and 27.8% had health problems in the feet. From the results of the questionnaire data, 94.4% of esports athletes did not consult the health problems they experienced with the medical side.

Sports are all systematic activities to encourage, foster, and develop physical, spiritual, and social potential. Sport is identical to physical activity, with the material object being the human motion (Cairney et al., 2019). When e-sports entered one of the sports that were contested in an exhibition at the 2018 Asian Games in Indonesia, a question arose among the public. Is esports a sport? This phenomenon invites pros and cons in the practical and academic spheres of sports in Indonesia. Some believe that it is part of an activity that can be categorized as a sport, but on the other hand, not a few reject it. In fact, the sports world and its academics are trapped in a physiological practical tactical discourse in studying Esports itself. Within the scope of academia, it seems unfair to look at a new phenomenon only from one point of view to define or categorize a phenomenon that is strongly symptomatic in the world of sports, something must be viewed holistically from various points of view in order to find the right slices to define it. a phenomenon.

It is also worth tracing the links between sports and other elements that are constantly evolving, given that sports as a scientific field also requires the study of other fields of science, we also agree and believe that it is impossible for something to emerge from nothing. The question that then arises is "Can a game activity be said to be a sport when viewed from the physiological practical tactical element, or more fundamentally, namely from the value of the sport contained in a game activity?" Too complicated indeed, considering how complex the knitting of civilizations that have been strung up to date. From the discussion of problems in the sports body above, both by definition of sport which is not as easy as we interpret sport as "only" as a competition activity related to achievement, as well as the emergence of a new phenomenon about the emergence of the Esport phenomenon that tries to match itself with sports activities, researchers try to inspire a return to mater Scientiarum or the "mother of science" to re-sharpen the blade of "motherhood" from the point of view of sports epistemology in order to find the right slices in studying Esports from the perspective of sports epistemology.

## METHOD

The type of research used is library research, which is collecting data or scientific papers related to the object of research or collecting library data. As library research, the data sources of this research are books that discuss the basic epistemology of science, followed by a study of the epistemology of sports and journals that discuss the epistemology of sports. The Esports discussion uses sources from several journals and books that discuss the definition of esports or the study of the esports phenomenon. The steps to be applied in the data analysis method are, respectively, 1) data reduction; 2) data classification; 3) data display; 4) interpret and interpret and draw conclusions.

## FINDING AND DISCUSS

Entering the analysis and discussion sub-chapter, the researcher will try to analyze the data collected through the sources that the researcher found, but then before discussing further we need to first equate the perception of the term or definition of sport used in this study. Sports in general can be interpreted as, "Sports are institutionalized competitive activities that involve rigorous physical exertion or the use of relatively complex physical skills by participants motivated by internal and external rewards" (Sakthi, 2018); (Lebed, 2022). "...institutionalized competitive activity that involves vigorous physical exertion or the use of relatively complex physical skills, by individuals whose participation is motivated by the combination of the intrinsic

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satisfaction associated with the activity itself and the external rewards earned through participation” (Varathan, 2018); (Manickam, 2021). From this opinion, we can mean that sport is an organized physical activity and requires physical ability in conducting its competition or competition that is fought for with physical ability and skill.

The emergence of Esports creates new challenges for sports scientists in expressing an attitude of "accepting" or "rejecting" the existence of Esports in sports science. Talking about philosophy, supporters of Esports can enter sports, it is not easy to say that Esports is included in sports, it is necessary to expand the definition of the sport itself so that Esports can really enter into sports. The proponents of esports getting involved in sports eventually came up with the term esports as virtual sports and real sports or in-real-life sports, but they admit that the definitions of esports and in-real-life sports are different and do not have a strong enough wedge to make a difference. Esports are included in real sports; it is necessary to redefine esports and expand the definition of real sports so that the intersection of these two sciences can melt into one or Esports can become a sub-category in the real sports (McCutcheon et al., 2017).

The emergence of the idea of esports being included in sports is possible due to the daily habit of people freely using the language of sports for competitive activities and sportsmanship for individuals/groups who compete/compete without considering the philosophical aspects of competition occur. There is no problem with the community considering it as a sport, but if it is viewed in philosophy, especially in the clear ontology aspect, Esports does not qualify as a science that is included in the sports science (Willimczik, 2019); (Leis et al., 2021). This means that esports activities are not sports in the true sense of the body of independent science, which consists of body activities in formation and education.

### Esports is Not A Sport

Parry (2019) in his article entitled E-sports are Not Sports describes that esports is not a sport in terms of human, physical, skills, rule-governed, and Institutionalized elements. All sports are based on rules made by independent institutions or associations. Calls the sets of rules the 'source', and he points out that the source of sports and the source of computer games differ in important respects. In sports, the source is created by the rule-making powers of an organization having the power to lay down the rules of the game (Abanazir, 2019); (Parry, 2020). But in computer games, the source is the video game, which consists of the "code" (so the code developer is the rule-maker) and the audiovisual representations (controlled by the publisher, who is an incorporated body within a particular jurisdiction).

Sources of sports regulations are created by associations or institutions consisting of member associations per country or owners of sports teams that form legal entities with a view to establishing the sources of rules for games and tournaments. In esports, the game rules are regulated by game developers such as Bluehole the PUBG PC game developer, Tencent the PUBG mobile game developer, Valve, and the Dota game developer blizzard. Jim Parry calls this "executive ownership" or executive ownership, because sports can only be managed, regulated, and supervised (but never owned) by the company, the status of the sport cannot be compared with the status of esports determined by "executive ownership" (Parry, 2019).

Switching from sports and physical activity its core elements to eSports. Esports as "a form of sport in which the main aspects of the sport are facilitated by electronic systems; input from players and teams as well as output from eSports systems are mediated by human-computer interfaces (Hamari & Sjöblom, 2017); (Baltezarević & Baltezarević, 2018); (Malik, 2019). eSports "describes video games competitively [while] the games themselves can vary in nature such as shooting (FPS), strategy (MOBA), sporting games (Hindin et al., 2020); (Jang & Byon, 2020). The OCA calls it a "relatively new form of sport". The Cambridge Dictionary (2017) defines esports as "the activity of playing computer games against others on the internet, often for money, and often watched by others using the internet (streaming), sometimes on special occasions". Neither of these three definitions mentions physical activity as any component of eSports.

In addition, the acceptance of esports as a sport because esports currently only has elements as an economic opportunity and the potential to become a sport is very small (Hallmann & Giel, 2018). In Ukraine, esports were developed on a large scale but only prioritized the commercial side with business benefits (Lokhman et al., 2018). Quoted from coil.com (2018), ESPN President, John Skipper, argues that eSports is not a sport but just a competition. This argument is supported by a journal released by the Johan Cruyff Institute, which explains that eSports is nothing more than a business tool. Other definitions do not describe eSports as a form of sport; for example, it is described as "the activity of playing computer games against others on the internet, often for money, and often watched by others using the internet, sometimes on special occasions" (Yin et al., 2020). Just playing computer games is an activity in the context of eSports. Referring to the definition of sport, it would be easy to conclude at this point that eSports cannot be a sport, as it does not include any specific physical activity.

### Esports is Sports

Esports is a catchall term for games that resemble conventional sports insofar as they have superstars, playoffs, fans, uniforms, comebacks, and upsets. But all the action in e-sports occurs online, and the contestants hardly move. There are many

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definitions of eSports in both academic and non-academic literature. Unfortunately, they are all stipulative and untested; and thus cannot serve as a definition from a philosophical point of view. However, they are generally sufficient from a 'work definition' point of view (McCutcheon et al., 2017). Karhulahti (2017) neatly summarizes the working definition of esports with nuance; they all view esports through two criteria: technology specificity (computers, cyberspace, electronics) and advanced competitions (athletics, professionalism, sports). These criteria are directly related to the video game culture so that esports is recognized as "an extension of the game." Therefore, the working definition can be filtered into two general views on eSports; eSports are computer-mediated competitive sportsmanship and sportsmanship.

In public discourse, eSports have established themselves as a specialized form of sporting competition. However, the debate over whether eSports can be defined as a sport in a more narrow sense is far from resolved. Reflections on the spread of virtual competitions said that if we look at the practice of eSports, it's not easy to distinguish it from established sports, first of all, eSportsmen call themselves sportsmen. In addition, all the eSports mentioned are competitive arrangements where teams or players compete for victory, determined through a certain point system (Rosell Llorens, 2017); (Wohn et al., 2018). Athletes to succeed in eSports games, motor skills and abilities, excellent motor skills of hands and fingers, as well as eye-hand coordination and endurance, are crucial (Nagorsky & Wiemeyer, 2020); (Thiel & John, 2018). Achieving the best performance in eSports requires game-specific perception and reaction skills, closely linked to the ability to coordinate the action physically. As in classic sports, systematic eSports training increases the motor and cognitive capabilities and skills that are characteristic of the game. In addition, game-specific tactical knowledge plays a decisive role in success in eSports competitions.

Esports games are competitive video games, which means that esports games can be classified as a sport in which there is an element of competition between players with one or teams with one. Esports comes from the abbreviation electronic esports because esports games use gaming as the main competitive field for professional players (Seo & Jung, 2016). Esports requires the performance of motor skills with athletic body readiness with types of movement skills (Hilvoorde & Pot, 2016). The reality in esports today is that video games have a competitive nature. The characteristics of esports, which can be said to be sports, are pragmatic thinking with the definition of esports. At the same time, the contents contained therein are organizing, competition, and skills.

Connecting esports with sports is not just a justification, but judging from the characteristics of esports, it deserves to be included in the sport. Because this electronic sport has a competitive nature (DiFrancisco-Donoghue et al., 2019) and contains characteristics (1), it requires motor skills, (2) it has a pulse rate that is equivalent to a marathon athlete, (3) it requires training for body position, (4) good nutrition and nutrition control, and (5) have age restrictions. This explanation is needed to study esports, which can be said to be a sport with its characteristics. So with this Literacy study, esports provides a bright spot where its existence is in sports. Furthermore, to become an esports player or athlete does not necessarily only play games for a long duration of time, but requires 8 hours of training a day, having coaches, nutritionist staff, and even having income as professional players (Merwin et al., 2018). So it is clear that esports can be included in the sports category. Esports can be said to be a sport because it has a competitive nature, players must have mental and physical readiness, skills that need to be honed continuously, and esports has rules that every player must obey (Jenny et al., 2017); (Brock, 2017). Esports can also build its ecosystem along with technology development as an alternative to finding income. So with that, the players must have honed skills to become professionals. In addition, the benefits of esports in a social environment can create social and emotional interactions in the form of inclusive teamwork (Baltezarević & Baltezarević, 2018). Esports can be categorized into sports by applying the values and characteristics of the sport. Such as being competitive, having rules, carrying out physical activity, training according to the program from the coach, paying attention to the nutrition of players, as well as the professionalism of players in carrying out the game. It's different from playing video games for teenagers and young people. This is because playing video games only has an unmeasurable purpose of pleasure.

Sport is an institutionalized competitive activity involving rigorous physical exertion or the use of relatively complex physical skills by participants motivated by internal and external rewards. With Coakley's statement, we can easily judge that Esports is not a sport when viewed from the involvement of physical exertion in competing because in playing esports, the players only control their avatars or virtual characters to run, but the players don't actually run, press the command button. To run. While in sports, an athlete's physical ability is very influential in competing with other athletes; where if athlete A wants to beat athlete B in a match, athlete A will train his physical abilities and skills to produce victory in the race. Plus the institution that makes game regulations in esports is not an independent institution but uses the rules that have been implemented by the game makers themselves, so institutionally, this sport is a bit flawed.

Suppose we refer to the opinion of Field Parry (2019), which states that sport is a human effort to compete with each other in sports competitions either individually or in teams. In that case, this opinion also strengthens the reason why esports is not a sport because humans do not compete directly, but are mediated by a virtual world where players only control their avatar to

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compete. Jim Parry said that physicality in sports requires that human physical movements have a direct relationship with the outcome of matches in sports. The real movements that are made must bear fruit. There may be physical action and effort in video game play. Still, the question is the physical activity involved enough to be said to be compatible with physical activity in sport? It seems that physical activity has little effect on the outcome of matches in esports.

Discussing institutions, Parry (2019) also states that the sources of sports regulations are made by associations or institutions consisting of association members per country or sports team owners who form legal entities to establish the source of game and tournament rules. In esports, the game rules are regulated by game developers such as Bluehole, the PUBG PC game developer; Tencent the PUBG mobile game developer; Valve, and the Dota game developer blizzard. Jim Parry calls this "executive ownership" or executive ownership because sports can only be managed, regulated, and supervised (but never owned) by the company, the status of the sport cannot be compared to the level of esports determined by "executive ownership." Jim Parry also said that another problem with esports is the fast pace of change in the esports mode, tournament organizers easily replace video games that lose popularity to be replaced with games that have high popularity in the market or are becoming a trend to be contested.

The development of esports has made them compete in various sporting events, with the aim of attracting public interest in sporting events. However, this raises a new debate, because it raises the perspective that everyone who is playing esports is considered to be exercising. Through this research, researchers hope that there will be vigilance obtained by academics and sports developers toward the phenomenon of the emergence of esports. Of course, as it is realized that things that arise are always in the concept of binary opposition, namely two things that are fused and cannot be separated, there will definitely be darkness and light, old and young, positive and negative. So with the emergence of esports, there must also be positives and negatives. We can support and develop the positive side, however, the negative side must not be lost or separated from vigilance and then find solutions to limit or reduce it. Furthermore, in this chapter, several findings from the search results of the researchers will be presented on the excavated literature sources, which will be presented in succession based on the grouped themes.

## CONCLUSION

Although most of the research focused on esports is qualitative and exploratory it cannot be generalized, but esports has become a scientific topic that is described from a different perspective. Based on the definition of sport, Esports cannot be identified as a sport mainly because of the physical activity missing in Esports. Coupled with Jim parry's opinion that the first requirement for an activity to be called a sport is humans, in my opinion as a researcher this is very basic where humans are the main drivers and main actors in sports, this is also the reason why MotoGP, F1, and WRC rally have not competed in the Olympics. Although the movements that look amazing cannot be ascribed to Esports players, they require some motor skills in playing the game including hand-eye coordination and speed of action (responsiveness) with strategic and tactical understanding but that is still considered lacking and still far from being a requirement to be a sport. , plus the element of violence in video games which was highlighted by IOC president Thomas Bach is very far from Olympic values. Not to mention the effects of addiction and verbal violence in the world of video games which are a scourge for parents in supervising their children when accessing and playing online games, not only children, adults are not immune from the addictive effects of playing video games.

Even if esports is categorized as a recreational sport, it is still far from the description of recreational sports according to the law of the Republic of Indonesia number 3 of 2005 concerning the national sports system in chapter 1 of the general provisions of article 1 paragraph 12 which states that recreational sports are sports carried out by the community with a passion for sports. and abilities that grow and develop in accordance with the conditions and cultural values of the local community for health, fitness, and joy. Where it relies on points for health and fitness, Esports itself seems to be far from that point, because in the discussion in the previous chapter there were many health problems if you play video games for too long.

Suggestions for academics to be careful about the translation of various forms of new terminology in sports, including those that use the word "sports" is it true that it can be interpreted as a "sports" which we have recognized with all its forms of nobility. Advice for practitioners and policymakers, It cannot be denied, that esports on the other hand is a technology product that offers various opportunities. Many young Indonesians can take part in the world of esports, either as professional players, developers, or other roles that are economically very promising.

## REFERENCES

- 1) Abanazir, C. (2019). Institutionalisation in e-sports. *Sport, Ethics and Philosophy*, 13(2), 117–131.
- 2) Baltezarević, R., & Baltezarević, B. (2018). The impact of video games on the esports formation. *Facta Universitatis*.



## Study of Esports in Sports Epistemology Perspective

*Series: Physical Education and Sport, 16(1), 137–147.*

- 3) Bányai, F., Griffiths, M. D., Király, O., & Demetrovics, Z. (2019). The psychology of esports: A systematic literature review. *Journal of Gambling Studies, 35(2)*, 351–365.
- 4) Brock, T. (2017). Roger Caillois and e-sports: On the problems of treating play as work. *Games and Culture, 12(4)*, 321–339.
- 5) Cairney, J., Dudley, D., Kwan, M., Bulten, R., & Kriellaars, D. (2019). Physical literacy, physical activity and health: Toward an evidence-informed conceptual model. *Sports Medicine, 49(3)*, 371–383.
- 6) DiFrancisco-Donoghue, J., Balentine, J., Schmidt, G., & Zwibel, H. (2019). Managing the health of the eSport athlete: an integrated health management model. *BMJ Open Sport & Exercise Medicine, 5(1)*, e000467.
- 7) Funk, D. C., Pizzo, A. D., & Baker, B. J. (2018). eSport management: Embracing eSport education and research opportunities. *Sport Management Review, 21(1)*, 7–13.
- 8) Hallmann, K., & Giel, T. (2018). eSports—Competitive sports or recreational activity? *Sport Management Review, 21(1)*, 14–20.
- 9) Hamari, J., & Sjöblom, M. (2017). What is eSports and why do people watch it? *Internet Research.*
- 10) Hilvoorde, I. van, & Pot, N. (2016). Embodiment and fundamental motor skills in eSports. *Sport, Ethics and Philosophy, 10(1)*, 14–27.
- 11) Himmelstein, D., Liu, Y., & Shapiro, J. L. (2017). An exploration of mental skills among competitive league of legend players. *International Journal of Gaming and Computer-Mediated Simulations (IJGCMS), 9(2)*, 1–21.
- 12) Hindin, J., Hawzen, M., Xue, H., Pu, H., & Newman, J. (2020). E-sports. In *Routledge handbook of global sport* (pp. 405–415). Routledge.
- 13) Holden, J. T., Rodenberg, R. M., & Kaburakis, A. (2017). Esports corruption: Gambling, doping, and global governance. *Md. J. Int'l L., 32*, 236.
- 14) Jang, W. W., & Byon, K. K. (2020). Antecedents of esports gameplay intention: Genre as a moderator. *Computers in Human Behavior, 109*, 106336.
- 15) Jenny, S. E., Manning, R. D., Keiper, M. C., & Olrich, T. W. (2017). Virtual (ly) athletes: where eSports fit within the definition of “Sport.” *Quest, 69(1)*, 1–18.
- 16) Kane, D., & Spradley, B. D. (2017). Recognizing ESports as a sport. *The Sport Journal, 19(05)*.
- 17) Karhulahti, V.-M. (2017). Reconsidering esport: Economics and executive ownership. *Physical Culture and Sport. Studies and Research, 74(1)*, 43–53.
- 18) Lebed, F. (2022). Physical activity is not necessary: The notion of sport as unproductive officialised competitive game. *Sport, Ethics and Philosophy, 16(1)*, 111–129.
- 19) Leis, O., Raue, C., Dreiskämper, D., & Lautenbach, F. (2021). To be or not to be (e) sports? That is not the question! Why and how sport and exercise psychology could research esports. *German Journal of Exercise and Sport Research, 51(2)*, 241–247.
- 20) Lokhman, N., Karashchuk, O., & Kornilova, O. (2018). Analysis of eSports as a commercial activity. *Problems and Perspectives in Management, 16(1)*, 207–213.
- 21) Malik, P. E. (2019). sports: A competitive electronic sports. *Int J Yogic, Hum Mov Sport Sci, 4(1)*, 87–90.
- 22) Manickam, V. A. (2021). Explosive power impact through ladder training and plyometric training among college men hockey players. *International Journal of Physical Education Sports Management and Yogic Sciences, 11(2)*, 23–27.
- 23) Marelič, M., & Vukušić, D. (2019). E-sports: Definition and social implications. *Exercise and Quality of Life Journal, 11(2)*, 47–54.
- 24) McCutcheon, C., Hitchens, M., & Drachen, A. (2017). eSport vs irlSport. *International Conference on Advances in Computer Entertainment, 531–542*.
- 25) Merwin, C., Masura, S., Piyush, M., Toschiya, H., Terry, H., & Alexander, D. (2018). The World of Games: eSports: From Wild West to Mainstream. *Equity Research, (October)*, 37.
- 26) Nagorsky, E., & Wiemeyer, J. (2020). The structure of performance and training in esports. *PloS One, 15(8)*, e0237584.
- 27) Parry, J. (2019). E-sports are not sports. *Sport, Ethics and Philosophy, 13(1)*, 3–18.
- 28) Parry, J. (2020). Computer Games are not Sports. *Das Phänomen E-Sport. Eine Sportwissenschaftliche Annäherung Aus Verschiedenen Disziplinen, 10–26*.
- 29) Pedraza-Ramirez, I., Musculus, L., Raab, M., & Laborde, S. (2020). Setting the scientific stage for esports psychology: A systematic review. *International Review of Sport and Exercise Psychology, 13(1)*, 319–352.
- 30) Polman, R., Trotter, M., Poulus, D., & Borkoles, E. (2018). eSport: friend or foe? *Joint International Conference on Serious*

## Study of Esports in Sports Epistemology Perspective

*Games*, 3–8.

- 31) Reitman, J. G., Anderson-Coto, M. J., Wu, M., Lee, J. S., & Steinkuehler, C. (2020). Esports Research: A Literature Review. *Games and Culture*, 15(1), 32–50. <https://doi.org/10.1177/1555412019840892>
- 32) Rosell Llorens, M. (2017). eSport gaming: the rise of a new sports practice. *Sport, Ethics and Philosophy*, 11(4), 464–476.
- 33) Rosenthal, R. R. (2021). A Tough Pill to Swallow: Making the Case for Why Esports Leagues Must Adopt Strict Banned Substance Policies to Prevent Disability Discrimination. *Va. Sports & Ent. LJ*, 20, 76.
- 34) Sakthi, K. M. (2018). Effect of isometric strength training program on strength components of school level handball girls. *Asian Journal of Multidimensional Research (AJMR)*, 7(2), 565–570.
- 35) Seo, Y., & Jung, S.-U. (2016). Beyond solitary play in computer games: The social practices of eSports. *Journal of Consumer Culture*, 16(3), 635–655.
- 36) Sinatra, F., & Rochmania, A. (2022). Gangguan kesehatan pada atlet e sport JATIM divisi mobile legends. *Jurnal Prestasi Olahraga*, 5(6), 89–97.
- 37) Thiel, A., & John, J. M. (2018). Is eSport a 'real' sport? Reflections on the spread of virtual competitions. *European Journal for Sport and Society*, 15(4), 311–315. <https://doi.org/10.1080/16138171.2018.1559019>
- 38) Varathan, R. (2018). Effect of plyometric training on speed, speed endurance and agility of sedentary college men. *International Journal of Physical Education, Sports and Health*, 5(2 Part B).
- 39) Willimczik, K. (2019). eSport" is" not sport-eSport and sport have meanings. An analysis from the perspective of a philosophy of language instead of ontological debates. *German Journal of Exercise and Sport Research*, 49(1), 78–90.
- 40) Wohn, D. Y., Freeman, G., & McLaughlin, C. (2018). Explaining viewers' emotional, instrumental, and financial support provision for live streamers. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, 1–13.
- 41) Yin, K., Zi, Y., Zhuang, W., Gao, Y., Tong, Y., Song, L., & Liu, Y. (2020). Linking Esports to health risks and benefits: Current knowledge and future research needs. *Journal of Sport and Health Science*, 9(6), 485–488.
- 42) Zwibel, H., DiFrancisco-Donoghue, J., DeFeo, A., & Yao, S. (2019). An osteopathic physician's approach to the Esports athlete. *Journal of Osteopathic Medicine*, 119(11), 756–762.



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## English Text Readability and Reading Comprehension Performance of Grade 11 Senior High School Students



**Benjamin B. Rabago Jr, PhD**

Master Teacher, I, Department of Education–Alos National High School, Senior High School  
Department, Alaminos City, Pangasinan

**ABSTRACT:** The study explored the significance of English text readability and reading comprehension proficiency of grade 11 senior high school students. English teachers validated the 45-item reading comprehension test and the reading comprehension intervention materials. Fifteen subjects of the study (who got the lowest pretest score) were selected from the class who got the lowest mean score in the pretest. It made use of the quasi experimental method where the subjects undergone reading comprehension lessons with English texts of varied readability level (high, fair, and low). Pretest and posttest scores are compared. Results indicated that there is a considerable increase in the mean score in the posttest (13.13) as compared to the pretest mean score (10.53). Further, there is significant difference between the pretest and posttest scores ( $p < 0.05$ ) and that English test readability has substantial effect on reading comprehension.

**KEYWORDS:** readability, reading comprehension, senior high school, English text, students

### INTRODUCTION

Reading is most likely the most important skill for second language (L2) or foreign language (FL) students in academic environments as recognized by Grabe in Ediger (2006). On the same line, reading requires that the reader interacts with the printed texts, which are symbols that convey meaning. The way a reader interprets the symbols is influenced by the reader's past experiences, language background and cultural framework, and purpose of reading (Hudelson, 1994), as referred to by Ediger (2006).

Learners who are effective in reading are able to: 1) connect what they already know about a subject to what they are reading, 2) make predictions about what they will learn from the reading, 3) ask questions about what they do not understand, 4) identify important ideas from the reading and summarize those ideas, 5) use strategies when encountering text they do not understand, and 6) process the information they read in an organized fashion (Beers and Howell, 2003). Both authors have also identified factors that impinge on the reading process. These aspects are: 1) the learner's ability, attitudes, and perceptions about reading; 2) the classroom environment's comfort, order, and safety; and 3) research-based classroom instruction. With regard to the first factor, students bring with them preconceptions about reading. Lack of confidence to read and comprehend text may lead to balking from the reading selection. Beers and Howell has imparted that this unwillingness is a self-fulfilling prophecy that underpins a "can't do" attitude. As encouragement and positive support is given, students establish positive attitudes and perceptions about reading. When they gain new reading skills and adopt strategies and devices they can employ to their reading, they will become more self-assured in their capacities. The third factor involves the implementation of research based instruction praxes to aid students grasp what they read. As teachers or reading facilitators provide students acquisition of essential skills, they become independent strategic readers. Meanwhile, components of the reading process include the reading task and its purpose, features of the text, and processing strategies for reading and understanding the text (Beers & Howell, 2003).

In addition, text attributes are a function of the writer's style. These features provide clues to how a reader approximates the reading task. Beers and Howell (2003) have concurred that selecting reading assignments appropriate to the students' age and ability will raise their encouraging attitudes about the reading activity, warrant their comfort with the reading, and help them assimilate meaning from the text. Moreover, Billmeyer and Barton (1998) have contended that text features do not only make printed materials unique, but also substantially have effect on comprehension. Both mentioned that reader aids (pictorial, typography, graphic and structural representations), vocabulary (terms used by the author to relate ideas and notions), and text structure (organizational pattern the author uses to express his thoughts) are specific text features. One of a selection's text

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features is its readability. Microsoft Encarta (2008) has defined readability as the measure of the ease with which a passage or text may be read. In his unpublished dissertation, Rabago (2016) has recommended an effects study if grade level readability is correlated to grade level reading comprehension. Similarly, he suggested the formulation and validation of a readability assessment tool to measure what level do Filipino readers truly belong with regards to readability score.

Brooks (2002), author of the book *The Easy Step by Step Guide: Writing Newsletters and Articles*, advised that it is basic in any good communication to have a readable article. This is living up to the audience’s expectations—that is, communicating well. Materials, therefore, employed for reading tasks should cater to the students’ grade level readability to facilitate learning, and develop attitude and comfort for any reading task, as they obtain the necessary tools and strategies to employ in reading.

American researcher Jeane S. Hall (1983) posited that reading in English progresses through six idealistic stages with ages specific to educational experience in the US (McArthur, 1992). Stage 3, of these stages, involves reading for learning (between 9 and 14, roughly the age bracket where grade 7 and grade 8 learners belong). Reading is no longer a culmination by itself, but turns into an instrument by which knowledge and experience can be acquired. Sample material for this stage is (as culled by McArthur):

Early in the history of the world, men found that they could not communicate well by using only sign language. In some way that cannot be traced with any certainty, they devised spoken language.

This sample reading material has a Flesch Reading Ease of 63.8 and Flesh-Kincaid Grade Level of 9.3. Stage 4, in addition, is the stage of multiplicity and complexity (from 14 to 17, approximate age for grades 9 to 11). Students, at this stage, are reading more and more complex materials, both narrative and expository and vary in viewpoint. Such items can be technical, nontechnical, literary, and nonliterary. Sample reading text for this stage is:

No matter what phenomena he is interested in, the scientist employs two main tools—theory and empirical research. Theory employs reason, language, and logic to suggest possible, and predict probable relationships among various data gathered from the concrete world of experience.

The given material has a Flesch Reading Ease of 21.3 and Flesh-Kincaid Grade Level of 17.2, which is obviously beyond the grade level of students at this stage. Increase in the level of the reading materials is evident as one progresses in grade level or age. A struggling reader may find the second example more difficult to comprehend due to the feature of the text itself.

One text feature that is neglected, if not overlooked, is readability. Hallur (2015), a fulltime blogger, commented that there is a powerful connection between readability and blogging and that readability is a most ignored thing

(<https://seopressor.com/blog/improve-content-readability-and-seo/>). In addition, content could be of high quality, but what about audience retention. He posed the question: Can you expect one-hundred percent of your readers to read a blog post that’s written in post-graduate students’ level? This he replied in a negative tone. In his surf of high-ranking blogs, he noticed that they too have high readability. He shared the levels of readability: 75 -100 is basic readability level, 50 – 75 is intermediate level, and anything below 50 is advanced.

A tool used to measure readability is the Flesh Reading Ease Test widely used all over the world. Higher scores indicate a material is easier to read, lower scores indicate passages are more difficult to read. Using the Flesh Reading Ease Score (FRES), *Reader’s Digest* has a readability index of 65. *Time* magazine has 52, the average 6th-grade written assignment (age of 12) and readability index of 60-70. The Flesch Reading Ease is also known by other labels, such as the Flesch Readability Formula, and the Flesch Reading Ease Test, or simply the Flesch Formula. The following is the translation of the readability scores:

Score	School Level	Description
100.0 – 90.0	5th grade	Very easy to read. Easily understood by an average 11year-old student
90.0 – 80.0	6th grade	Easy to read. Conversational English for consumers
80.0 – 70.0	7th grade	Fairly easy to read
70.0 – 60.0	8th grade and 9th grade	Plain English. Easily understood by 13- to 15-year-old students
60.0 – 50.0	10th to 12th grade	Fairly difficult to read
50.0 – 30.0	College	Difficult to read
30.0 – 0.0	College graduate	Very difficult to read. Best understood by university graduates

The demands of academic reading and schoolwork may take its toll on the unequipped grade 11 students who may suffer immensely due to their inadequate reading comprehension. Does readability really matter when reading materials become more

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complicated? Poor attitude toward reading, as observed by Dr. Elena C. Cutiongco in a speech delivered in one national conference by the Reading Association of the Philippines, may exacerbate the already impaired reading comprehension (Bernardo, 2013).

### METHODS

The quasi-experimental method was employed in this study. Fifteen grade 11 senior high school students were selected from the class who got the lowest mean score in the pretest. Intervention lessons were implemented, with each part having three lessons and a 15-item summative test. They were organized similarly to the pretest and posttest, from high readability (Part 1) to fair readability (Part 2) and low readability (Part 3). Both reading comprehension tests and reading comprehension materials were validated by English teachers. Pretest and post-test scores underwent one-sample t-test to measure the significant differences at 0.05 level of significance.

### RESULTS AND DISCUSSION

It can be gleaned from Table 1 that there is a considerable disparity between the pretest and posttest scores. Most of the posttest raw and mean scores demonstrated substantial increments in raw scores' span and mean scores.

**Table 1. Pre-test and Post-test Scores of the Participants**  
n=50

PN	PART 1		PART 2		PART 3		TOTAL	
	Pr	Po	Pr	Po	Pr	Po	Pr	Po
1	1	5	2	6	5	3	8	14
2	5	6	7	4	4	4	16	14
3	2	2	7	2	8	3	17	11
4	4	2	2	5	3	4	9	11
5	5	4	3	1	4	4	12	9
6	1	2	5	4	7	2	13	8
7	3	4	1	2	2	4	6	10
8	3	4	3	2	6	7	12	11
9	5	9	5	2	2	4	12	15
10	3	6	2	5	3	2	12	13
11	3	5	4	8	3	6	8	19
12	4	3	2	4	2	3	10	19
13	1	5	2	3	5	2	8	10
14	2	8	6	2	5	6	8	16
15	2	4	3	5	2	5	7	17
$\bar{x}$	2.93	4.60	3.60	3.67	4.07	3.93	10.53	13.13

PN – Participant number

Pr – Pretest

Po – Posttest

$\bar{x}$  – mean

Part 1 pretest scores ranged from 1 to 5 with a mean score of 2.93. In contrast, Part 1 post-test scores manifested an increase with scores spanning from 2 to 9 and mean score of 4.60. The same trend was also reflected in pretest and posttest raw scores and mean scores in Part 2. These suggest that text readability impacts on reading comprehension. It is worth noticing, however, that this tendency deviated in Part 3. Posttest mean score dropped to 3.93 from the 4.07 mean score of the pretest. A study is being recommended, therefore, why such deviance occurred.

Moreover, it was expected that the pretest raw scores should be decremental in nature as the reading selection texts are sequenced from high readability (Part 1) to fair readability (Part 2) and low readability (Part 3) in relation to the participants' grade level. Results, however, exhibited otherwise as pretest mean scores increased from 2.93 in Part 1 (high readability) to 3.60 in Part 2 (fair readability), and 4.07 in Part 3 (low readability). On the other hand, post-test mean scores posted an erratic array as mean scores fluctuated from 4.60 in Part 1 to 3.67 in Part 2, and 3.93 in Part 3. Similarly, further exploration is being proposed to determine the reasons for the said manifestation. Total raw maximum scores, nevertheless, distinctively demonstrated an increase, from 17 in the pretest to 19 in the posttest. Likewise, this is as well established by the improvement in the mean scores

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from 10.53 (pretest) to 13.13 (posttest). After the administration of the intervention lessons, it is noteworthy that the mean score increased by 2.6.

### PRE-TEST AND POST TEST DIFFERENCE

Table 2. Difference between the Pretest and Posttest Scores

Compared Test	Mean Difference	t-value	Sig. (2-tailed)
Pretest	-34.467	-41.093	.000
Posttest	-31.867	-35.035	

\* Significant at .00 level

Table 2 discloses that, with the mean differences, t-values, and significance of 0.000, there is enough evidence to reject the null hypothesis that there is no significant difference between the pretest and posttest scores. Thus, text readability has a positive impact on the reading comprehension of Grade 11 students. Reading ease then is a factor to be considered with regard to how a reading text is approached to achieve reading comprehension.

Readability, hence, has a considerable effect on reading comprehension as Bahrudin (2016) has pinpointed that textbook readability is an aid to reading attainment and sustain their drive for reading (Rohmatillah, 2017). Further, it has been found that textbook readability can enhance reading comprehension, reading pace, seriousness, and to motivation to read by 65 percent (Rohmatillah, 2017; Brysbaert, 2018).

### SUMMARY OF FINDINGS

The study sought to establish the connection between English text readability and reading comprehension of grade 11 senior high school students. Increase in posttest mean score significant difference between pretest and posttest mean scores establish that readability substantially affects reading comprehension.

### CONCLUSION

Considering the findings of the study, text readability is a factor to be cogitated if reading comprehension competency is to be achieved.

### RECOMMENDATIONS

Based on the findings of the study, the following recommendations are offered.

- 1) The study be replicated among grade 11 senior school students to include a larger population
- 2) Similar study be expanded to incorporate grade 12 senior high school students
- 3) Consider readability in the assignment of reading tasks or related activities and development of reading intervention materials

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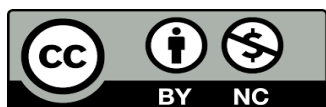
English teachers for validating the reading comprehension test and intervention materials; grade 11 senior high school students, particularly the subjects of the study for their cooperation; the school head for technical support; professional colleagues for support prompting and assistance

### REFERENCES

- 1) Ang, J. G. (Ed.). (2015). *English 1 critical reading and effective/engaged writing for the 21st century Filipino student*. Mindshapers Co., Inc.
- 2) Ang, J. G. (Ed.). (2016). *Reading & writing for senior high*. Mindshapers Co., Inc.
- 3) Bahrudin, D. (2016). *The effect of readability on students' reading comprehension*. WACANA DIDAKTIKA. 4. 42. <https://doi.org/10.31102/wakanadidaktika.4.1.42-54>
- 4) Bautista, M. L. S. and Bolton, K. (2009). *Philippine English linguistic and literary perspectives*. Anvil.
- 5) Beers, S. and Howell, L. (2003). *Reading strategies for the content areas*. Mid-continental Regional Educational Laboratory (McREL).
- 6) Bernardo, A. S. (2013). *Developmental reading 1*. Rex Book Store, Inc.

## English Text Readability and Reading Comprehension Performance of Grade 11 Senior High School Students

- 7) Billmeyer, R. and Barton, M. L. (1998). *Teaching reading in the content areas: If not me, then who?*. Mid-continental Regional Educational Laboratory (McREL).
- 8) Bolivar, F. V. et al. (2010). *NAT (National Achievement Test)*. Eureka Scholastic Publishing, Inc.
- 9) Brooks, P. (2002). *The easy step by step guide: Writing newsletters and articles*. Rowmark Ltd.
- 10) Calmorin, L. P. (2016). *Research and thesis writing with statistics computer application*. Rex Book Store.
- 11) David, A. C., David, H. P. and Santiago, E. P. (1992). *Career service examination professional & subprofessional*. National Book Store, Inc.
- 12) Dela Cruz, R. L. and Dela Cruz, M. R. (2010). *NAT (National Achievement Test) fourth year*. Kleafs Publishing.
- 13) Ediger, A. Teaching children literacy skills in a second language. In Murcia, M. C. (Ed.). *Teaching English as a second or foreign language* (3<sup>rd</sup> ed.). (2006). Cengage Learning, Inc.
- 14) Fraenkel, J. R., Wallen, N. E., and Hyun, H. H. (2012). *How to design and evaluate research in education* (8<sup>th</sup> ed.). McGraw-Hill Education.
- 15) Manaois, L. C. and Fernandez, C. B. (1996). *English for today's youth communication arts English fourth year*. Innovative Educational Materials, Inc.
- 16) Mangahas, M. (2017, May 20). What statistics matter?. *Philippine Daily Inquirer*, p. A13.
- 17) McArthur, T. (1992). Flesh reading formula. In McArthur, T. (Ed.). *The Oxford companion to the English language*. Oxford University Press.
- 18) Menoy, J. Z. et al. (2015). *Academic reading and writing in college* (3<sup>rd</sup> ed.). Books Atbp. Publishing Corp.
- 19) Mills, A. (Chief Consultant). (2007). *New world mythology myths and legends of Oceania and the Americas*. Australia: Global Book Publishing.
- 20) *NAT (National Achievement Test) dry run for high school*. (2010). Eureka Scholastic Publishing, Inc.
- 21) Rabago Jr., B. B. (2016). *Content and readability of school papers in public junior high schools in Pangasinan*. (Unpublished doctorate dissertation). Pangasinan State University – Open University Systems, Lingayen, Pangasinan.
- 22) Readability. *Microsoft Encarta* (2009).
- 23) Silvestre, R. V. (2017, May 20). *Literature and society*. Philippine Daily Inquirer, p. A13.
- 24) Systems Technology Institute, Inc. (STI). (1997). *College English* (Vol. 1). Systems Technology Institute, Inc. (STI).
- 25) The Flesch grade level readability formula. (n.d.). <http://www.readabilityformulas.com/fleschgrade-level-readability-formula.php>
- 27) Zulueta, F. M. and Perez, J. R. (2010). *Methods of research, thesis writing and applied statistics*. National Book Store.
- 28) [http://www.englishforeveryone.org/PDFs/Level\\_10\\_Passage\\_1.pdf](http://www.englishforeveryone.org/PDFs/Level_10_Passage_1.pdf)
- 29) [http://www.englishforeveryone.org/PDFs/Level\\_12\\_Passage\\_3.pdf](http://www.englishforeveryone.org/PDFs/Level_12_Passage_3.pdf)
- 30) [http://www.englishforeveryone.org/PDFs/Level\\_12\\_Passage\\_5.pdf](http://www.englishforeveryone.org/PDFs/Level_12_Passage_5.pdf)
- 31) [http://www.englishforeveryone.org/PDFs/12\\_A\\_Streetcar\\_Named\\_Desire\\_Free\\_Sample.pdf](http://www.englishforeveryone.org/PDFs/12_A_Streetcar_Named_Desire_Free_Sample.pdf)
- 32) <http://www.ereadingworksheets.com/reading-comprehension-worksheets/submarinesnonfiction-reading-test-1-answers.html>
- 33) <http://www.gobloggingtips.com/readability-and-seo/#>
- 34) <https://www.rfp-templates.com/readability-scores/flesch-kincaid>



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## Improving Mathematics Achievement of Students with Varied Social Skills through Team-Pair-Solo Strategy (TPSS)



Jeffrey D. Del Mundo<sup>1</sup>, Hazel Jhoy C. Del Mundo<sup>2</sup>

<sup>1,2</sup> Muntinlupa National High School, PHILIPPINES

**ABSTRACT:** The study aimed to determine the effect of Team-Pair-Solo Strategy (TPSS) as a teaching strategy on the mathematics achievement of students with varied social skills. It utilized the single group pretest – posttest pre – experimental design. Through convenience sampling, one intact class consisting of 32 second year Bachelor of Arts in International Studies (BAIS) students who were enrolled at the San Beda College Alabang during the second semester of SY 2018 – 2019 was involved in the study. Seven instruments were used namely, the Mathematics Achievement Test (MAT), Social Skills Rating Scale (SSRS), TPSS Lesson Guides, TPSS Activities, and Classroom Observation Guide (COG). The result of the study revealed that the sample class was composed of three different levels of social skills based on the SSRS and these are high, moderate, and low. There is a significant difference between the MAT pretest and posttest scores of the students that indicates that the students had better scores after they were exposed to TPSS. Furthermore, there is a significant difference in the achievement of students in the posttest after their exposure to TPSS across social skills. The data results revealed that there is a significant difference between the mathematics achievement of students with high level of social skills and students with low level of social skills. The students who have high social skills outperformed those who have low social skills. Therefore, using TPSS as a teaching strategy tends to encourage students to engage in mathematics learning and helped them improve their achievement in mathematics

**KEYWORDS:** Mathematics, Achievements, Social Skills, Team-Pair-Solo Strategy

### I. INTRODUCTION

The importance of Mathematics is recognized worldwide. Mathematics is becoming progressively important in many areas including science, information technology, business and engineering. Mathematics is not just calculation but a tool for understanding structures, relationships and patterns to produce solutions to complex real-life problems.

However, even with a notion that Mathematics is truly academically relevant, most of the Filipino students are still poor in math, as revealed by the result of the Trends in Math and Science Survey (TIMSS) 2003. The Department of Science and Technology (DOST) reported that the Filipino elementary and high school students who took the TIMSS last 2003 ranked 41st in Mathematics and Science out of a field of 45 countries, significantly lower than the international average. (PHDR ISSUE: 2008/2009 No. 1)

Further, results of the National Achievement Test (NAT) in 2012 showed that the quality of mathematics education in the Philippines remains poor. The Department of Education (DepEd) data likewise showed that the average NAT score of public high school students for School Year 2011 to 2012 was below the 75% criterion. In mathematics, the fourth-year high school students obtained an average of 46.37%. This trend has been apparent for the past five years. These data show that Mathematics continues to be one of the most difficult fields of study in basic education in the Philippines.

College students are not exempted from the problem in learning and mastering mathematics. Students who have not mastered their high school mathematics also tend to fail in college. Learning mathematics is cumulative. Subsequent lessons become more difficult to learn if students missed out on some lessons. Able students are capable of diagnosing where the gap in their knowledge of their lessons exists, academically challenged students in contrast, generally cannot do this for themselves, which for them could be frustrating and leads to a feeling of not being able to cope.

Given the fact that students learn at different rates where some may be considered as advanced learners while others are quite academically challenged, educators and researchers never cease to discover better methods and strategies to deliver easier yet quality instruction particularly in Mathematics. Among the innovative theories and practical approaches being utilized



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to resolve the dilemma of students' confusion and anxieties in comprehending difficult academic subjects like Mathematics is identifying the learner's Zone of Proximal Development guided by Lev Vygotsky's Social Learning Theory.

Social learning theory is a theory that suggests learning is constructed through interactions with people or the environment. The cooperative learning strategy follows this theory because its objective is to put students in small groups and have them work together to construct meaning from new information [1].

There are many strategies under cooperative learning and one of these is the Team- Pair-Solo Strategy (TPSS). TPSS is a method of cooperative learning in which the students do problem first as a team, then with a partner, and finally on their own. By applying this strategy, a teacher can encourage the students to participate in the classroom activities as well as encourage them to express their ideas without being afraid of making a mistake [2]. Among the benefits of social learning is that it serves as a venue for a more dynamic learning environment. In a social learning environment, students are free to ask questions, provide feedback, and support their peers in learning new material. Teachers act more as a facilitator in the teaching-learning process rather than the main and only source of knowledge. With this, students become more proactive as regards their own learning. Students share the mutual responsibility of comprehending the topics by themselves and working together with others that require them to advance their knowledge and skills.

This kind of interaction positively motivates students to become more responsible in their studies and to be more prepared in facing greater academic challenges [3]. Social learning environment requires students to learn from their interactions with the environment or surrounding. Lacking in social skills, a student fails to achieve and enjoy a successful educational experience. Research shows that academic performance was highly related to the possession of social skills among students. Lack of social skills has been found related to depression and anxiety and low academic achievement. Those students who are rejected by peers are lonely and have very low self-esteem and this in turn affects their academic achievement [4] . It is along this premise that the researcher attempted to experiment on the inclusion of Team-Pair-Solo Strategy (TPSS) in teaching selected topics in college algebra, and find out its effects on the mathematics achievement of the students with varied social skills.

Knowing the importance of mathematics in real-life situations, the outcome of this study is beneficial to students, teachers, and administrators. By being aware of their social skills, students may adjust their learning styles to enable them to perform better. Further, result of this study may help mathematics teachers understand their students better thus encouraging them to adapt innovative teaching strategies in the classroom. The administrators may be provided with valuable inputs in the formulation of policies that may support students in their desire to improve their performance. It is hoped that the result of this study may provide significant contribution in improving the achievement of students in mathematics and enhancing their social skills.

### **II. STATEMENT OF THE PROBLEM**

The study aimed to determine the effect of Team-Pair-Solo Strategy (TPSS) on the mathematics achievement of students with varied social skills. Specifically, it sought to answer the following questions:

1. What is the level of social skills of the students?
2. What is the mathematics achievement of the students before and after their exposure to Team-Pair-Solo Strategy?
3. Is there a difference in the mathematics achievement of the students before and after their exposure to Team-Pair-Solo Strategy?
4. Is there a difference in the mathematics achievement of students across social skills after their exposure to Team-Pair-Solo Strategy?
5. What is the performance of the students in the TPSS activities?

### **III. METHODS**

This study focused on the effect of Team-Pair-Solo Strategy (TPSS) on the mathematics achievement of students with varied social skills. The researcher utilized a single group pretest-posttest pre-experimental design. The study used quantitative and qualitative analyses. Quantitative analysis was used to determine the students' mathematics achievement and social skills by interpreting the result of the mathematics achievement test and social skills rating scale. Qualitative analysis was also used to further validate the result of the quantitative analysis on the effect of team-pair-solo strategy and the students' performance in TPSS activities. The sample in this study comprised one intact class composed of 32 students from BAIS – 2A chosen through purposive sampling. They are considered heterogeneous based on their midterm grade.

In the conduct of this study, data were collected using these instruments Mathematics Achievement Test, TPSS Activities, TPSS Lesson Guides, and Classroom Observation Guide, and Social Skills Rating Scale.

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1. Mathematics Achievement Test. The MAT reliability scored 0.92 in KR-20. All items are good and fair based on difficulty index of 0.21 to 0.80 and discrimination index of 0.2 and above as the acceptable range.

2. Social Skills Rating Scale. The SSRS was adopted from Prakash [5] designed to determine the social skills of the students. The content validity of the instrument was established by seeking the expertise of the faculty from the Psychology Department of Adventist University of the Philippines. The computed reliability of the test using Kuder-Richardson Formula 20 (KR-20) was 0.81. This indicates that the SSRS is valid and reliable.

3. TPSS Activities. The researcher developed six TPSS activities (one for each lesson) based on the selected topics contained in the College Algebra course outline. These are: (1) Solving Quadratic Equations by Extracting Square Roots, (2) Factoring, (3) Completing the Square, (4) Using Quadratic Formula, (5) Solving Equations Transformable into Quadratic Equations, and (6) Applications of Quadratic Equations. The class was exposed to the different parts of the activity first as a team, then as a pair, and lastly, without a partner or solo. Each part of the activity is composed of 2 to 4 problem solving questions. The problem solving in the activities include mathematical or systematic operation regarding the six topics. The TPSS activities were incorporated in the lesson for 3 weeks. There were administered after the discussion of the teacher-researcher. The activities were face and content validated by three experts. Scoring was based on rubric using a 4-point Likert-type scale from 0 to 3, 0 being the lowest and 4 being the highest. The results of the TPSS activities were individually scored and interpreted as very good (2.4 – 3.0), good (1.6 – 2.3), fair (0.8 – 1.5) and poor (0 – 0.7).

4. TPSS Lesson Guides. The researcher developed six semi-detailed lesson guides in College Algebra incorporating the Team-Pair-Solo Strategy. These lesson plans served as guides in the conduct of the study.

5. Classroom Observation Guide. The department head and the vice dean (one at a time) observed the class during the conduct of TPSS to ensure that the researcher strictly followed the lesson guide. The observer was given orientation on the procedures and what would transpire during the TPSS. The observer was asked to answer the observation guide that interpreted as Strongly Agree (3.4-4.0), Agree (2.6 – 3.3), Disagree (1.8 – 2.5) and Strongly Disagree (1.0-1.7).

### **A. Data Gathering Procedure**

This study was conducted in four phases.

Phase I focused on the development and validation of the research instruments. The content and faced validation of the instruments was performed by experts in the field of mathematics, education, and the researcher’s adviser.

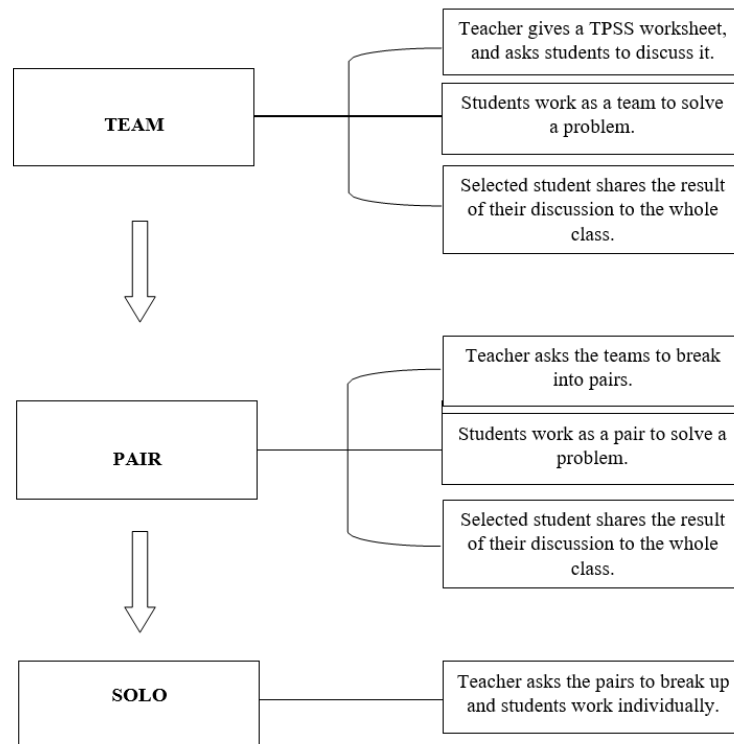
Phase II involved the orientation on the use of TPSS and the administration of the Mathematics Achievement Test (MAT) and the Social Skills Rating Scale (SSRS). The MAT was administered to the students, before their exposure to TPSS. The scores of the students in the MAT determined their achievement in college algebra. After the administration of the MAT was the administration of the SSRS. The results identified the level of social skills of the students. After the administration of the SSRS, the students were given orientation and practice about TPSS to eliminate the novelty effect. The students were assigned to their respective teams consisting of four students per team.

There were eight teams belonging to the high ability, moderate ability, and low ability students based on their grades during the midterm period of school year 2018 - 2019. Pairing was done by ranking the class from the highest to the lowest midterm grade in college algebra. After the ranking, the list was flipped in half. Students with high grades were paired to students with low grades. This means that the teams and pairs are heterogeneous.

Phase III involved the implementation of Team-Pair-Solo Strategy (TPSS). Observations of the teaching and learning process applying the TPSS by the department head and the vice dean were done during this phase. They monitored if the lessons were strictly followed using the lesson guides. During this period, the students were instructed to listen attentively to the discussion before the activity. After the discussion, the teacher gave a problem with several questions, and asked the students to discuss it with their team. Students worked as a team to be able to solve the problem based on the background knowledge prior to the activity. They discussed, shared ideas, and taught each other on how to analyse the problem and how to answer the questions posed by the teacher- researcher. After discussing for about 10 to 15 minutes, selected students shared the result of their discussion to the whole class. When all the students were done with their presentations, the teacher made generalizations and corrected their misconceptions. In the next step, the teacher asked the teams to break into pairs. Then teacher gave them a similar problem to analyse and similar questions to be answered. Students worked in pairs, discussed and shared their ideas to each other to analyse the problem and answer the questions. After discussing for about 10 to 15 minutes, selected students shared what they got to the whole class and the teacher corrected their misconceptions. The teacher asked the pairs to break up and the students worked individually. A similar problem was given to the students to analyse by using their own experiences working in team and pair. The result of the students’ work in this step was used to assess their performance in solving math

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problems. The teacher moved on to the next topic and he continued until all the topic were discussed. Lesson plans and activity sheets prepared by the teacher were aligned with the course syllabus in college algebra. Figure 5 illustrates the flow on how the Team-Pair-Solo Strategy was implemented. While the Phase IV was the administration of the posttest.



**Figure 1. Flow Diagram of the Conduct of TPSS.**

## B. Data Analysis

The results of the MAT and SSRS were individually scored and totaled. The raw scores were converted to z-score. Then the z-scores were converted to stanine and each stanine score has equivalent descriptive interpretation. The level of students’ social skills was described as high (7 – 9), moderate (4 – 6), and low (1 – 3). While students’ mathematics achievement was interpreted as above average (7 – 9), average (4 – 6), and below average (1 – 3). The mean and standard deviation of the overall scores in the MAT were determined.

Inferential statistics, paired t-test was used to determine the significant difference between the means of the pretest and posttest scores in the mathematics achievement of the students, one-way ANOVA was utilized to determine the mathematics achievement of the students across social skills after using TPSS. The quantitative data were encoded using IBM SPSS Version 24 for all statistical processing and analyses. The following statistical tools were used to analyze and interpret the data and results of the study: (1) paired t-test was used to determine significant differences between the pretest and posttest scores in the MAT; and (2) one-way ANOVA was used to determine significant differences in the mathematics achievement of students across social skills. All tests of significance were evaluated at .05 alpha.

## IV. RESULT AND DISCUSSIONS

Discussion and analyses of the results of the statistical treatment employed as well as the interpretation of the results of the study which aimed to investigate the effect of Team-Pair-Solo Strategy (TPSS) as a teaching method on the mathematics achievement of the students with varied social skills.

### A. Students’ Level of Social Skills

The social skills rating scale (SSRS) was used to determine the students’ level of social skills. Table 4 presents the level of social skills of the students.

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**Table 1. Level of social skills of the students**

Student No.	Stanine	Level of Social Skills	Student No.	Stanine	Level of Social Skills
1	7	High	17	3	Low
2	7	High	18	8	High
3	7	High	19	7	High
4	5	Moderate	20	6	Moderate
5	7	High	21	7	High
6	6	Moderate	22	5	Moderate
7	5	Moderate	23	5	Moderate
8	8	High	24	3	Low
9	7	High	25	2	Low
10	7	High	26	3	Low
11	5	Moderate	27	2	Low
12	7	High	28	2	Low
13	1	Low	29	6	Moderate
14	1	Low	30	4	Moderate
15	4	Moderate	31	4	Moderate
16	6	Moderate	32	5	Moderate

Table 1 presents the summary of the frequency and percentage distribution of the students’ level of social skills based on the social skills rating scale. Stanine scores from 1 – 3 are classified as having low level of social skills, 4 – 6 as having moderate level social skills, and 7 – 9 as having high level of social skills.

**Table 2. Percentage distribution of the students’ level of social skills**

Level of Social Skills	Frequency	Percentage
Low	8	25.00%
Moderate	13	40.62%
High	11	34.38%
Total	32	100%

As presented in table 2, there are three levels of social skills based on the social skills rating scale and the distribution was determined by percentage measures, 13 out of 32 or 40.62% of the students were found to have moderate level of social skills and it comprised the majority of the sample while 11 out of 32 or 34.38% were found to have high level of social skills; and 8 out of 32 or 25% were low in social skills. Social skills are behaviors that enable an individual to successfully interact with others and respond to the expectations of the society [6]. According to Mujis and Reynolds [4], social skills are primarily concerned with identification of behaviors that are needed in the successful performance of social tasks. It relates to a person’s friendly personality and good non-verbal intelligence.

## **B. Students’ Mathematics Achievement Before and After Their Exposure to Team- Pair-Solo Strategy (TPSS)**

**Table 3. Summary of students’ pretest and posttest scores in the MAT**

	Highest Score	Lowest Score	Mean	Standard Deviation
Pretest	20	7	11.81	2.80
Posttest	29	15	23.13	3.99

As shown in Table 3, the highest score obtained in the pretest is 20 and the lowest is 7 while in the posttest, the highest and lowest scores are 29 and 15, respectively. The standard deviation of the posttest, 3.99, is higher than the standard deviation of the pretest, 2.80; indicating a greater spread of the posttest scores around its mean. The mean of the posttest which is 23.13 is higher than the mean of the pretest which is 11.81. This indicates that students performed better in mathematics after their exposure to TPSS. For further analysis, interpretation and comparison of scores of students in the MAT, the raw score of each student was converted to stanine score. Table 4 presents the mathematics achievement of the 32 students based on their

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stanine scores in the pretest and posttest in the Mathematics Achievement Test. Stanine score from 1 – 3 classifies a student as having below average achievement, 4 – 6 as having average achievement and 7 – 9 as having above average achievement in mathematics.

**Table 4. Stanine scores of the students in the MAT**

Student No.	Stanine Score (Pretest)	Description	Stanine Score (Posttest)	Description
1	7	AA	8	AA
2	9	AA	7	AA
3	7	AA	7	AA
4	5	A	7	AA
5	4	A	7	AA
6	6	A	7	AA
7	7	AA	6	A
8	9	AA	5	A
9	5	A	5	A
10	5	A	7	AA
11	2	BA	5	A
12	5	A	4	A
13	2	BA	2	BA
14	4	A	6	A
15	2	BA	4	A
16	5	A	6	A
17	6	A	6	A
18	2	BA	5	A
19	6	A	5	A
20	4	A	2	BA
21	4	A	5	A
22	5	A	6	A
23	4	A	2	BA
24	7	AA	5	A
25	6	A	1	BA
26	4	A	2	BA
27	4	A	5	A
28	4	A	3	BA
29	2	BA	7	A
30	5	A	2	BA
31	6	A	1	BA
32	2	BA	4	A

Legend: AA – Above Average, A – Average, BA – Below Average

Table 4 reveals that there are 6 (18.75%) students who are below average, 20 (62.5%) students who are average, and 6 (18.75%) students who are above average in the pretest while in the posttest, there are 8, 17, and 7 students who are below average, average, and above average, respectively. There were 4 students out of 20 (20%) in the pretest who improved from average to above average in the posttest while 7 (35%) students fell from average to below average level. Nine (45%) students maintained their average level from pretest to posttest. Three of the six (50%) students maintained their above average level after the TPSS while the remaining three fell into the average achievement level. Most of the students who fell below their level were originally classified as below average during the midterm period. This shows that academically challenged students need more time to master and process the presented activity. Five out of 6 (83.33%) below average students in the pretest improved into average in the posttest. Only one student maintained his below average achievement level. It seems that the use of TPSS inside the classroom was beneficial to majority of the students. For students who are academically challenged, cooperative

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learning seemed to help bring them up, possibly because it provides opportunities to discuss freely their learning difficulties with their peer in a friendly environment.

**Table 5. Result of the paired t-test on the students’ mathematics achievement test scores before and after their exposure to Team-Pair-Solo Strategy (TPSS)**

Mean		Mean	t-value	p-value	Interpretation
Pretest	Posttest	Difference			
11.81	23.13	11.32	15.58	0.00001	Significant

As shown in Table 5, the pretest mean is 11.81 while the posttest mean is 23.13. The mean difference between the pretest and posttest in the mathematics achievement test is 11.32. The computed *t*-value is 15.58 and the *p*-value is 0.00001 which is less than 0.05 level of significance ( $p < .05$ ), therefore there is a significant difference in the mathematics achievement of the students before and after their exposure to Team-Pair-Solo Strategy (TPSS). It means that the TPSS had a differential effect on the students’ achievement in mathematics. The result of the study is supported by Amalia [7] and Ogunleye [8] who affirmed that the effectiveness of team-pair-solo has been widely acknowledged and proved to be more effective in improving academic achievement. Team-Pair-Solo has shown significant achievement gains on mathematics tests. The same findings were observed in the study of Zakaria [9] on the effects of cooperative learning on students’ mathematics achievement. His study showed that cooperative learning methods improved students’ achievement in mathematics. He concluded that cooperative learning is an effective approach which mathematics teachers need to incorporate in their teaching. This study also confirms the findings of Hossain and Tarmizi [10], that using cooperative learning approach improves the students’ performance in mathematics. Researches on effective instruction show that achievement is higher when students are given many opportunities to respond and participate in the lessons. According to Kellough [11], cooperative learning gives an opportunity for students to learn a lesson that promotes constant participation with immediate feedback. It increases academic learning and adolescents are more willing to learn from their peers

### C. Posttest Mean Scores of Students in the MAT across Social Skills

**Table 6. Mean posttest scores of the students in the MAT across social skills**

Level of Social Skills	Mean	Standard Deviation
High	25.55	3.91
Moderate	22.46	4.33
Low	20.88	2.30

Table 6 shows that the students with high level of social skills obtained the highest mean score of 25.55 in the mathematics achievement posttest followed by the students with moderate level of social skills, 22.46. The lowest mean score was obtained by the students with low level of social skills, 20.88. The students with moderate level of social skills obtained the highest standard deviation of 4.33 in the mathematics achievement posttest; indicating a greater spread of the posttest scores around its mean. One-way ANOVA was utilized to determine the significant difference in the achievement of students in the posttest after their exposure to Team-Pair-Solo Strategy (TPSS) across social skills. Table 7 presents the result of one-way ANOVA on the overall sample of the different levels of social skills on the posttest mean scores in the MAT.

**Table 7. ANOVA result on the posttest mean scores of students in the MAT across social skills**

Source	Sum of Squares	df	Mean Square	F	p-value	Interpretation
Between Groups	110.667	2	55.333	4.170	0.026	Significant
Within Groups	384.833	29	13.270			
Total	495.500	31				

Table 7 shows that the *p*-value of 0.026 is less than the 0.05 level of significance set for the study. This indicates that there is a significant difference among students’ achievement across social skills after their exposure to TPSS. Since the *F*-ratio value is

## “Improving Mathematics Achievement of Students with Varied Social Skills Through Team-Pair-Solo Strategy (TPSS)”

significant, a test of multiple comparisons was done specifically Tukey’s Honestly Significant Difference (HSD). The Post Hoc Test was used to determine the multiple comparisons at 0.05 level of significance of the dependent variable, the mathematics achievement after the treatment, across different levels of social skills. Table 8 presents the result of the Post Hoc Test.

**Table 8. Tukey’s HSD of posttest mean scores in the MAT across social skills**

Level of Social Skills	Mean Difference	p-value	Interpretation
High vs Moderate	3.09	0.115	Not Significant
Moderate vs Low	1.58	0.602	Not Significant
High vs Low	4.67	0.026	Significant

Table 8 shows that there is a significant difference between the mathematics achievement of students with high level of social skills and students with low level of social skills ( $p < .05$ ). This means that students with high level of social skills outperformed the students with low level of social skills. The TPSS is equally effective to students with moderate and low level of social skills. According to Hernandez [12], this reflects the social aspects of learners that by nature, teenagers wanted to be with their peers. He also stated that these students learn from each other and benefit from activities that require them to articulate and test their knowledge. Working with a group and for the benefit of the group also motivate these students. On the other hand, lack of social skills has been found as one of the factors related to anxiety and low academic achievement. Students who are rejected by peers are lonely and have very low self-esteem and these in turn affect their academic achievement. Research shows that academic achievement is highly related to the possession of social skills [4].

### D. Students’ Performance in the TPSS Activities

TPSS activities were scored by the teacher-researcher using the scoring rubric. The 32 students were divided into eight groups. The members of the groups were a combination of students who had higher midterm grade and those with lower midterm grade. There were three categories in the TPSS activities: Team, Pair, and solo. To compare the performance of the eight groups in every team activity, Table 9 shows the mean score and description of their performance.

**Table 9. Average of students’ performance in team activity 1-6**

Group	Team Activity						Average
	1	2	3	4	5	6	
1	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.00 <i>Good</i>	<b>2.77</b> <b><i>Very Good</i></b>
2	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.33 <i>Good</i>	2.00 <i>Good</i>	<b>2.67</b> <b><i>Very Good</i></b>
3	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.67 <i>Very Good</i>	3.00 <i>Very Good</i>	2.00 <i>Good</i>	<b>2.72</b> <b><i>Very Good</i></b>
4	3.00 <i>Very Good</i>	2.33 <i>Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.00 <i>Good</i>	<b>2.67</b> <b><i>Very Good</i></b>
5	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.33 <i>Good</i>	2.33 <i>Good</i>	3.00 <i>Very Good</i>	2.00 <i>Good</i>	<b>2.56</b> <b><i>Very Good</i></b>
6	3.00 <i>Very Good</i>	2.33 <i>Good</i>	2.67 <i>Very Good</i>	3.00 <i>Very Good</i>	2.33 <i>Good</i>	2.00 <i>Good</i>	<b>2.56</b> <b><i>Very Good</i></b>
7	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.33 <i>Good</i>	2.00 <i>Good</i>	2.00 <i>Good</i>	<b>2.50</b> <b><i>Very Good</i></b>
8	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.33 <i>Good</i>	2.67 <i>Very Good</i>	2.33 <i>Very Good</i>	3.00 <i>Very Good</i>	<b>2.67</b> <b><i>Very Good</i></b>
<b>Average</b>	<b>3.00</b> <b><i>Very Good</i></b>	<b>2.71</b> <b><i>Very Good</i></b>	<b>2.71</b> <b><i>Very Good</i></b>	<b>2.75</b> <b><i>Very Good</i></b>	<b>2.54</b> <b><i>Very Good</i></b>	<b>2.13</b> <b><i>Good</i></b>	<b>2.64</b> <b><i>Very Good</i></b>

\*2.4-3 – Very Good, 1.6-2.3 – Good, 0.8-1.5 – Fair, and 0 – 0.7 – Poor

Table 9 reveals that Group 1 performed best with a mean of 2.77 and Group 7 with 2.50 performed least among other groups based on the mean score per group. Group 1 performed best possibly because the rank 1 student is included in this

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group. Based on the data given, the groups performed their best in the first activity (Solving Quadratic Equations by Extracting Square Roots) with a mean score of 3.00 described as very good. While they performed least in the last activity (Applications of Quadratic Equations) with a mean of 2.13 described as good. It seems that one of the factors affecting the performance of the students in the team activity is the level of difficulty of the topic. All groups have descriptions of very good in performing the team activity. The over-all average of the students’ performance in the team activity is 2.64 described as very good. The results showed that working with classmates helps students improve academically. To compare the performance of the sixteen pairs in every pair activity, Table 10 shows the mean score and description of their performance.

**Table 10. Average of students’ performance in pair activity 1-6**

Pair/ Level	Ability						Mean
	1	2	3	4	5	6	
1 (H,L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	3.00 <i>Very Good</i>	2.50 <i>Very Good</i>	<b>2.86</b> <b>Very Good</b>
2 (A, A)	2.50 <i>Very Good</i>	3.00 <i>Very Good</i>	2.33 <i>Good</i>	2.33 <i>Good</i>	1.67 <i>Good</i>	2.00 <i>Good</i>	<b>2.31</b> <b>Good</b>
3 (H, L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.00 <i>Good</i>	<b>2.78</b> <b>Very Good</b>
4 (A, A)	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.00 <i>Good</i>	2.33 <i>Good</i>	2.00 <i>Good</i>	2.50 <i>Very Good</i>	<b>2.46</b> <b>Very Good</b>
5 (H, L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.00 <i>Good</i>	<b>2.83</b> <b>Very Good</b>
6 (A, A)	2.50 <i>Very Good</i>	2.67 <i>Very Good</i>	2.67 <i>Very Good</i>	2.33 <i>Good</i>	2.33 <i>Good</i>	2.50 <i>Very Good</i>	<b>2.50</b> <b>Very Good</b>
7 (H, L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.50 <i>Very Good</i>	<b>2.92</b> <b>Very Good</b>
8 (A, A)	2.75 <i>Very Good</i>	2.00 <i>Good</i>	2.33 <i>Good</i>	2.67 <i>Very Good</i>	2.00 <i>Good</i>	2.38 <i>Good</i>	<b>2.65</b> <b>Very Good</b>
9 (H, L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.50 <i>Very Good</i>	<b>2.92</b> <b>Very Good</b>
10 (A, A)	2.50 <i>Very Good</i>	2.67 <i>Very Good</i>	3.00 <i>Very Good</i>	2.33 <i>Good</i>	2.33 <i>Good</i>	2.00 <i>Good</i>	<b>2.47</b> <b>Very Good</b>
11 (H, L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.00 <i>Good</i>	<b>2.83</b> <b>Very Good</b>
12 (A, A)	3.00 <i>Very Good</i>	2.00 <i>Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.00 <i>Good</i>	2.00 <i>Good</i>	<b>2.45</b> <b>Very Good</b>
13 (H, L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.67 <i>Very Good</i>	2.50 <i>Very Good</i>	<b>2.81</b> <b>Very Good</b>
14 (A, A)	3.00 <i>Very Good</i>	2.33 <i>Good</i>	2.33 <i>Good</i>	2.33 <i>Good</i>	2.00 <i>Good</i>	2.00 <i>Good</i>	<b>2.33</b> <b>Good</b>
15 (H, L)	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	3.00 <i>Very Good</i>	2.67 <i>Very Good</i>	2.33 <i>Good</i>	3.00 <i>Very Good</i>	<b>2.83</b> <b>Very Good</b>
16 (A, A)	2.50 <i>Very Good</i>	2.67 <i>Very Good</i>	3.00 <i>Very Good</i>	2.33 <i>Good</i>	2.00 <i>Good</i>	2.00 <i>Good</i>	<b>2.42</b> <b>Very Good</b>
<b>Average</b>	<b>2.86</b> <b>Very Good</b>	<b>2.75</b> <b>Very Good</b>	<b>2.79</b> <b>Very Good</b>	<b>2.64</b> <b>Very Good</b>	<b>2.43</b> <b>Very Good</b>	<b>2.28</b> <b>Good</b>	<b>2.63</b> <b>Very Good</b>

\*2.4-3 – Very Good, 1.6-2.3 – Good, 0.8-1.5 – Fair, and 0 – 0.7 – Poor H (High Ability), A (Average Ability), L (Low Ability)

Table 10 presents the students’ mean scores in each pair activity. Pair 7 and Pair 9 performed best in pair activities with a mean score of 2.92 described as very good while Pair 2 and Pair 14 performed least with mean scores of 2.31 and 2.33,



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respectively described as good. It was also found out that pairs 1, 3, 5, 7, 9, 11, 13, and 15 performed better than pairs 2, 4, 6, 8, 10, 12, 14, and 16. The first eight pairs are those with high and low ability students while the next eight pairs are those with average ability students. It seems that during the pair activity, the assistance of high ability students played a vital role.

As shown in Table 10, the pairs performed their best in the first activity with a mean score of 2.86 described as very good. While they performed least in the last activity with a mean of 2.28 described as good. Activity 1 is about solving quadratic equations by extracting the square roots and activity 8 is about application of quadratic equations. It is more difficult compared to activity 1. It seems that the performance of the students in the pair activity is affected by the level of difficulty of the topic. The over-all average of the students’ performance in the pair activity is 2.63 described as very good. This result showed that working with a pair with one student having a higher ability helps students improve their problem-solving performance in mathematics.

Finally, students worked solo which means that they worked alone as individual. This process developmentally helps the students to have a progress from the point in which they could do only with help to they can do alone. To compare the performance of the 32 students in every solo activity, Table 11 shows the mean score and description of their performance.

**Table 11. Average of students’ performance in solo activity 1-6**

Student/ Ability Level	Solo Activity						Mean	Description
	1	2	3	4	5	6		
1 (H)	3.00	3.00	3.00	3.00	3.00	3.00	<b>3.00</b>	<i>Very Good</i>
32 (A)	2.25	2.00	2.33	2.33	2.00	2.00	<b>2.15</b>	<i>Good</i>
9 (A)	3.00	3.00	3.00	3.00	2.33	2.00	<b>2.72</b>	<i>Very Good</i>
24 (L)	2.50	3.00	2.67	2.00	2.33	2.00	<b>2.42</b>	<i>Very Good</i>
2 (H)	3.00	3.00	3.00	3.00	3.00	3.00	<b>3.00</b>	<i>Very Good</i>
31 (A)	2.50	2.33	2.33	2.33	2.33	2.00	<b>2.30</b>	<i>Good</i>
12 (A)	2.50	3.00	3.00	2.00	2.33	2.00	<b>2.47</b>	<i>Very Good</i>
21 (L)	3.00	2.67	2.33	2.33	2.33	2.00	<b>2.44</b>	<i>Very Good</i>
3 (H)	3.00	3.00	3.00	3.00	3.00	3.00	<b>3.00</b>	<i>Very Good</i>
30 (A)	2.25	2.33	2.00	2.00	2.00	2.00	<b>2.10</b>	<i>Good</i>
14 (A)	3.00	3.00	3.00	2.67	2.67	2.50	<b>2.81</b>	<i>Very Good</i>
19 (L)	2.75	3.00	3.00	2.33	2.67	2.50	<b>2.71</b>	<i>Very Good</i>
4 (H)	3.00	3.00	3.00	3.00	3.00	3.00	<b>3.00</b>	<i>Very Good</i>
29 (A)	3.00	3.00	2.33	2.33	2.00	2.00	<b>2.44</b>	<i>Very Good</i>
16 (A)	2.75	2.67	3.00	2.33	2.33	2.00	<b>2.51</b>	<i>Very Good</i>
17 (L)	2.50	2.33	2.33	2.67	2.33	2.00	<b>2.36</b>	<i>Good</i>
5 (H)	3.00	3.00	3.00	3.00	3.00	3.00	<b>3.00</b>	<i>Very Good</i>
28 (A)	2.50	3.00	3.00	2.33	2.00	2.00	<b>2.47</b>	<i>Very Good</i>
15 (A)	2.50	2.67	3.00	2.67	3.00	2.00	<b>2.64</b>	<i>Very Good</i>
18 (L)	3.00	3.00	2.67	2.67	2.33	3.00	<b>2.78</b>	<i>Very Good</i>
6 (H)	3.00	3.00	3.00	3.00	3.00	2.00	<b>2.83</b>	<i>Very Good</i>
27 (A)	3.00	3.00	1.67	2.00	2.00	2.00	<b>2.28</b>	<i>Good</i>
13 (A)	3.00	2.33	2.33	2.67	2.33	2.00	<b>2.44</b>	<i>Very Good</i>
20 (L)	3.00	2.67	2.33	3.00	2.33	3.00	<b>2.72</b>	<i>Very Good</i>
7 (H)	3.00	3.00	3.00	2.67	2.67	3.00	<b>2.89</b>	<i>Very Good</i>
26 (A)	2.50	3.00	2.67	1.67	2.33	2.50	<b>2.45</b>	<i>Very Good</i>
10 (A)	3.00	3.00	2.33	2.67	2.33	2.00	<b>2.56</b>	<i>Very Good</i>
23 (L)	2.50	2.67	2.67	2.00	2.33	2.00	<b>2.36</b>	<i>Good</i>
8 (H)	3.00	3.00	3.00	3.00	2.67	2.50	<b>2.86</b>	<i>Very Good</i>
25 (A)	3.00	3.00	2.00	2.33	2.00	2.00	<b>2.39</b>	<i>Good</i>

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11 (A)	2.50	2.67	2.67	2.67	2.33	2.50	<b>2.56</b>	<b>Very Good</b>
22 (L)	2.50	3.00	2.33	2.00	2.33	2.50	<b>2.44</b>	<b>Very Good</b>
<b>Average</b>	<b>2.78</b>	<b>2.82</b>	<b>2.66</b>	<b>2.52</b>	<b>2.45</b>	<b>2.34</b>	<b>2.60</b>	<b>Very Good</b>

\*2.4-3 – Very Good, 1.6-2.3 – Good, 0.8-1.5 – Fair, and 0 – 0.7 – Poor

Table 11 shows the mean scores of the students in the solo activities. Based on the results, Students 1, 2, 3, 4, and 5 got the highest mean score of 3.00 (very good) in the solo activities. Students 7, 8, and 6 got the next highest mean score of 2.89, 2.86, and 2.83, respectively (very good) in the activities. These eight students made good progress in solving math problems. These students are the high achievers during the midterm period; they were also the leaders of their respective teams. On the other hand, Student 30 obtained the lowest mean score of 2.10 (good) in the solo activities. Student 32 followed with a score of 2.15 in the solo activities. Three students (26, 28, 29) belonging to the low ability level were very good in the solo activities while five students (25, 27, 30, 31, and 32) were good. Of the 16 average level students, 14 or 87% were very good and only 2 or 12% were good in the solo activities. The over-all average of the students’ performance in the solo activities is 2.60 described as very good. It implies that TPSS helped students develop their problem-solving performance in mathematics. The high ability students shared their knowledge to the low ability students that is why when the low ability students worked independently, they performed well. The pairs consisting of average ability students complemented each other so that when they were not in pairs, they also performed well. These results are supported by Kellough [11]. He stated that achievement is higher when students are given many opportunities to participate in the lessons. He also stated that cooperative learning increases academic learning and students are more willing to learn from their classmates.

To describe the performance of the students in the TPSS activities, the mean score was used. Table 12 presents the mean scores of the students in the TPSS activities.

**Table 12. Mean scores in the three categories of students’ performance in the TPSS activities**

Group	Category			Average
	Team (n = 1)	Pair (n = 2)	Solo (n = 4)	
	Mean	Mean	Mean	
1	2.77 <i>Very Good</i>	2.59 <i>Very Good</i>	2.57 <i>Very Good</i>	<b>2.64 <i>Very Good</i></b>
2	2.67 <i>Very Good</i>	2.6 <i>Very Good</i>	2.55 <i>Very Good</i>	<b>2.61 <i>Very Good</i></b>
3	2.72 <i>Very Good</i>	2.67 <i>Very Good</i>	2.66 <i>Very Good</i>	<b>2.68 <i>Very Good</i></b>
4	2.67 <i>Very Good</i>	2.65 <i>Very Good</i>	2.58 <i>Very Good</i>	<b>2.63 <i>Very Good</i></b>
5	2.56 <i>Very Good</i>	2.7 <i>Very Good</i>	2.72 <i>Very Good</i>	<b>2.66 <i>Very Good</i></b>
6	2.56 <i>Very Good</i>	2.64 <i>Very Good</i>	2.57 <i>Very Good</i>	<b>2.59 <i>Very Good</i></b>
7	2.5 <i>Very Good</i>	2.57 <i>Very Good</i>	2.57 <i>Very Good</i>	<b>2.55 <i>Very Good</i></b>
8	2.67 <i>Very Good</i>	2.63 <i>Very Good</i>	2.56 <i>Very Good</i>	<b>2.62 <i>Very Good</i></b>
<b>Average</b>	<b>2.64 <i>Very Good</i></b>	<b>2.63 <i>Very Good</i></b>	<b>2.60 <i>Very Good</i></b>	<b>2.62 <i>Very Good</i></b>

\*2.4-3 – Very Good, 1.6-2.3 – Good, 0.8-1.5 – Fair, and 0 – 0.7 – Poor

Table 12 reveals that Group 3 performed best with a mean of 2.68 and Group 7 with 2.55 performed least among other groups based on the mean score per group while Group 5 and 1 followed with means of 2.66 and 2.64, respectively. All groups have description of *very good* in performing the TPSS activities. Based on the data given, the groups performed their best in the first category which is *Team* with a mean score of 2.64 described as *very good*. While *pair* and *solo* have mean scores of 2.63 and 2.60, respectively also described as *very good*. The over-all average of the students’ performance is 2.62 described as *very good*. It means that the students performed better when they were involved in a cooperative learning environment.

For further analysis in comparing the work of Group 3 and Group 7, Table 16 shows the social skills level of Group 3 and Group 7 before their exposure to TPSS. Result revealed that there were 2 students who have high level of social skills in Group 3, 1 student who is moderate, and 1 student who is low in social skills while in Group 7, there were 1, 2, and 1 student who have high, moderate, and low social skills, respectively. It shows that before the exposure to TPSS Group 3 has more students with

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high social skills level than Group 7. As revealed in the quantitative analysis students with high social skills outperformed those with low social skills.

Table 13 also reveals that there were 3 students who have average ability in the pretest in both Group 3 and Group 7, and 1 student who is above average. This indicates that before the exposure to TPSS students from Group 3 and Group 7 have the same ability level. After their exposure to TPSS, there was a decrease in the number of students under the average ability level in Group 7, there was 1 student who improved into above average while there were 2 students who fell into the below average level. And the above average student fell into the average level. This decrease in the ability level after exposure to TPSS could explain why Group 7 performed the least but it is still in the range of very good.

**Table 13. Summary of the level of social skills, pretest score and posttest score ability level of Group 3 and Group 7**

Group	Student No.	Level of Social Skills	Pretest Score Ability Level	Posttest Score Ability Level
GROUP 3	3	High	Above Average	Above Average
	30	Moderate	Average	Below Average
	14	Low	Average	Average
	19	High	Average	Average
GROUP 7	7	Moderate	Above Average	Average
	26	Low	Average	Below Average
	10	High	Average	Above Average
	12	Moderate	Average	Below Average

Although the MAT raw scores of all the members of Group 7 improved (from 8 to 24, 12 to 27, 13 to 26, 12 to 25, respectively), Group 3 scored better (from 17 to 24, 8 to 22, 8 to 27, 15 to 28, respectively) than Group 7. Student 7 is the leader of Group 7, he is considered as a high ability student during the midterm period and yet he belonged to the least performing group, he said “...I am not yet ready to be the leader of my team. But my group members helped me specially Dominic and I gained points for my team by answering the activities.” The assigned leader in Group 7 encountered difficulties while doing the TPSS, and it could be one of the reasons why they performed last in the TPSS activities. Besides, Student 7 has moderate social skills. Student 26 fell into below average in the posttest from average in the pretest. According to him, he struggled in answering the solo activities because he is not good in mathematics. He also said “... I found difficulty in answering the solo part of the activity because the time is very short. I cannot answer the worksheet in just 10 – 15 minutes because I am slow in solving math problems.” Which indicates that he found it difficult because of time pressure.

On the other hand, student 10 improved into above average in the posttest. His insights about TPSS is “...we had roles during the activity. We were required to fulfill our responsibilities in order to understand the topic and be successful in the presentation”. He expressed that cooperation was important in order to be successful in the group activity. Students 10 had positive experience about TPSS.

Student 3 of Group 3 is classified as *High* in social skills level. She is categorized as above average in the pretest and posttest in the MAT. Her insight about TPSS is “...being the leader of the group, I am the one who are responsible to my teammates. I need to help them passed the activities. It is also the way on how will I improve my skills”. She is a responsible leader and she felt that TPSS enhanced her mathematical skills by working together. Student 14 added “The activities improved my math skills because my teammates helped me to correct my miscalculations and minor errors.” According to student 19, TPSS activities helped them to perform better in mathematics because they learned from each other. He also said “mas gusto ko na ngayon na lagi na akong may kasama magsagot kasi sobrang nakakatulong sila (groupmates)”. Student 30 fell into below average in the posttest. Her insight about TPSS is “... I learned a lot from my groupmates. The activity helps me to improve my skills in solving math problems... Madalas nahihirapan pa din ako kasi takot ako sa math. Pero masaya ako kasi dahil sa mga kagroupmates ko nakakasagot na ako. Sana lagi na lang groupwork ang activity sa math.” Despite of having a low score in the TPSS activities, she still wants TPSS activities to be used in learning mathematics. As the highest performing group, Group 3 recommended the TPSS “...because we can able to brainstorm and share some ideas within our group. It helps the topic easier to understand” and “because my group mates are also helping me to understand even though we encounter some difficulties in other topics”. These

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findings about team-pair-solo strategy concur with the studies of Amalia [7] and Ogunleye [8] who established that the strategy is associated with better learning process.

### V. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the use of Team-Pair-Solo Strategy (TPSS) tends to improve the mathematics achievement of the students. The sample class was composed of three different levels of social skills based on the Social Skills Rating Scale (SSRS) and these are high, moderate, and low. The use of Team-Pair-Solo Strategy (TPSS) favoured the students with high level of social skills. This study recommend that Team-Pair-Solo Strategy (TPSS) may be used as a teaching method in improving students' achievement not only in mathematics but also in other subjects. Social skills of the students be assessed at the beginning of the school year to complement teaching strategies, approaches, and assessments. Furthermore, this study be replicated using larger samples and longer period of time to further evaluate its effectiveness and application in learning mathematics as a teaching strategy. Similar studies be conducted on the use of Team-Pair-Solo Strategy using other variables not included in the study such as attitude, anxiety, learning style, and self- esteem to improve the achievement of the students in mathematics.

### REFERENCES

- 1) Hubble, E., Kuhn, M., & Malenoski, K. (2007). Using technology with classroom instruction that works. Alexandria, VA: ASCD.
- 2) Cook, J. (2007). Effective teaching strategies that work with all students, Session Willimantic: EASTCONN.
- 3) Diez, E. (2015.) Operationalization of activity-based learning strategies In teaching college algebra. Unpublished Master's Thesis. The National Teachers College, Manila.
- 4) Mujis, D. & Reynolds, D. (2005). Effective teaching. (2nd ed.). Sage Publications.
- 5) Prakash, R. (2007). Effect of peer tutoring strategy on mathematics achievement and social skills of college algebra students. Unpublished Master's Thesis. Adventist University of the Philippines. Puting Kahoy, Silang, Cavite.
- 6) Loreman, T. (2005). Inclusive education – a practical guide to supporting diversity in the classroom. Routledge Falmer.
- 7) Amalia, R. (2011). The use of team-pair-solo in reading comprehension (a pre- experimental research in XI grade students of SMA negeri 4 semarang in the academic year of 2010 – 2011. Semarang State University.
- 8) Ogunleye, B. (2011). The effects of “Team Pair Solo” (TPS) cooperative learning strategy and students' personality type on achievement in Chemistry. University of Ibadan, Nigeria.
- 9) Zakaria, E. (2010). The effects of cooperative learning on students' achievement and attitude towards mathematics. Science Publication. Journal of Social Sciences 6. Vol. 2.
- 10) Hossain, A. & Tarmizi, R. (2013). Effects of cooperative learning on students' achievement and attitudes in secondary mathematics. Bangladesh.
- 11) Kellough, G. (2002). Teaching in the middle and secondary school. (7th ed). Merrill Prentice Hall.
- 12) Hernandez, A. (2007). Comparative study on learning styles of selected public and private schools in Dasmariñas. Unpublished Master's Thesis, The National Teachers College.



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## Forest Degradation and Deforestation in Nigeria; Poverty Link



Olubukola Tolulope Oyediji<sup>1</sup>, O.A Adenika<sup>2</sup>

<sup>1,2</sup>Oniganmbari Research Station, Forestry Research Institute of Nigeria

**ABSTRACT:** Forests are the most diverse terrestrial ecosystems, housing a quite large majority of the world's terrestrial species. It provides many social, economic, and environmental benefits. In addition to timber and paper products, forests provide wildlife habitat and recreational opportunities, it prevents soil erosion and flooding, provides clean air and water as well. Degradation and Deforestation occurs when changes happens which affects the characteristics of a forest negatively in such a way that the value and production of its goods and services decline or it is converted to an alternative permanent non-forested land use such as agriculture, grazing or urban development. These changes are caused by both direct and indirect causes with direct causes being human activities e.g agricultural expansion, road construction etc while indirect causes are economic growth etc. A positive correlation between the level of poverty and utilization of forest resources which leads to deforestation and exploitations of forest resources has been established, with an estimation of more than 90% of the 1.2 billion people living in extreme poverty dependence on forests for some part of their livelihood. Hence, degradation and loss of forests pose a grave threat to biodiversity. The result of degradation and deforestation include flooding, reduction in forest carbon storage, climate change etc. some perceived way forward to tackling this are poverty reduction programs, addressing land tenure matters , forest monitoring mechanism amongst others.

**KEYWORDS:** Forest, Degradation, Deforestation, Poverty

### A. INTRODUCTION

Forest degradation is a change process that affects the characteristics of a forest negatively in such a way that the value and production of its goods and services decline. [1] Explains that this change process is caused by disturbance (although not all disturbance causes degradation), which most often vary in extent, severity, quality, origin and frequency. These disturbances may be natural (fire, storm or drought), human-disturbances (harvesting, road construction, shifting cultivation, hunting or grazing) or the combination of the two. Human caused disturbance may be intentional (direct), such as that caused by logging or grazing, or it may be unintentional (indirect), such as that caused by the spread of an invasive alien species.

Deforestation on the other hand is the conversion of forest to an alternative permanent non-forested land use such as agriculture, grazing or urban development [2]. [3] Highlights the major causes of deforestation which include urbanization, population growth, corruption, overpopulation, inequitable distribution of wealth, and poverty. [4] Further explains that there are proximate/direct causes as well as underlying/indirect causes of deforestation and forest degradation. A distinction is commonly made between proximate/direct causes and underlying/indirect causes of deforestation and forest degradation [4, 5].

Proximate causes are human activities or immediate actions that have direct impact on forest cover and loss of carbon. These causes can be grouped into categories such as agricultural expansion (subsistence and commercial agriculture), infrastructure extension (e.g road construction) and wood extraction (as harvesting of timber and other forest products). Meanwhile the Indirect or underlying drivers/causes are population and economic growth, national and international demand for commodities among others. These activities are triggered by indirect drivers covering the complex interactions of economic, political and institutional, technological, cultural, socio-political and demographic factors [4-7].

The deforestation and degradation of Nigeria forest resources according to [8] between 1980 and 1990 annually averaged at 3.5% and the forest area declined from 14.9 million ha. to 10.1 million ha which translates to the loss of 350,000 to 400,000 ha of forest land per annum for the country. Also [9] reported that Nigeria has lost 55.7% of its primary forest to

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deforestation between 2000 and 2005, making the country the highest of such vegetation degradation in the world which are mainly lost to clear-cut for logging, timber export, subsistence agriculture and among others, fetching woods for fuels.

In exploitation of forest resources, [10] established a positive correlation between the level of poverty and utilization of forest resources which leads to deforestation and exploitations of forest resources. The Federal Government of Nigeria (FGN) in 2006 through its ministry (Federal Ministry of Environment) confirms that in Nigeria as in most third world countries, firewood constitutes the major source of fuel. The Rural populace being 80% of the total population depends on fuel wood for its energy needs. Meanwhile the inefficient utilization of fuel wood has contributed to the serious resource depletion which is more noticeable in the arid zone of the country.

It is estimated that more than 90% of the 1.2 billion people living in extreme poverty depend on forests for some part of their livelihood [11]. With such a high proportion of people dependent on forest resources, degradation and loss of forests indeed pose a grave threat to biodiversity. The high prevalence of poverty in Nigeria also worsens deforestation. [12] Reported that about 45% of the country's teeming populace survives below the poverty line. This has brought this paper review to study and evaluate the how poverty drives forest degradation and deforestation, adverse effect of deforestation and degradation on the environment and ascertain perceived ways forward to tackling it.

## B. CHAPTER 2

### I. The Forest

The forest provides us with several ecosystem goods and services that support our wellbeing and livelihoods. Forest also plays a major role in the reduction of soil and ecosystem hydrological effects and water balance. Trees capture, store, and distribute water to the soil and prevent erosion [13]. Meanwhile [14] estimates that over 1.6 billion people globally rely on forest ecosystems for their livelihood. Of these number, forest-dwelling native peoples and rural communities who live in proximity to the forest constitute about 300 - 350 million people, and almost all completely rely on the forests for their livelihood. The remaining of the forest users are people living in urban and rural areas.

Ecosystem services derived from the forest include fuel wood, fiber, materials for construction, herbal medicine, honey, fodder and water among other services [15, 16]. Also [14] ascertains that forests are an important income generator especially to rural families in Africa, Asia and Latin America. Furthermore, tropical forests are the home of an massive number of species; they are significant absorbers of carbon dioxide; they are often located in a nice countryside and they do attract tourists; they contain natural resources; they form the livelihood for human natives who are often prone to poverty. The latter point implies, natives use tropical forests as a source of wood for making fire, building houses, generating income, and so forth.

### II. Nigeria's Forest Biodiversity

The variety of animal and plant in Nigeria's forest is desirable. They work together like an intricate web to maintain balance and support the ecosystem. Nigeria is rich in Biodiversity; the country hosts a richly diverse forest and wildlife. According to [17] the country is endowed with a variety of plant and animal species. There are about 7, 895 plant species identified in 338 families and 2, 215 genera. There are 22, 000 vertebrates and invertebrates species. These species include about 20, 000 insects, about 1, 000 birds, about 1, 000 fishes, 247 mammals and 123 reptiles. Of these animals about 0.14% is threatened while 0.22% is endangered. About 1, 489 species of microorganisms have also been identified. All of these animal and plant species occur in different numbers within the country's vegetation that range from the mangrove along the coast in the south to the Sahel in the north. Most of the biodiversity sustain the rural economy. With this great coverage, forests in Nigeria provides a lots of environmental and aesthetic benefits that ranges from watershed protection to animal hunting, medicine, stabilization of hydrological regimes and carbon sequestration.

Nigeria's present network of protected areas according to [17] includes a biosphere reserve, 8 national parks, 445 forest reserves, 12 strict nature reserves and 28 game reserves. Other sanctuaries and game reserves have been proposed. The total area of land under national parks is about 2.4million hectares. These game reserves were meant to conserve wild life and to supplement protein from domestic sources. Species that had priority for conservation then were identified to include chimpanzee (*Pan troglodytes*) lowland gorilla (*Gorilla gorilla*), ostrich (*Strutio camelopedalus*), Black Rhinoceros (*Diceros biocornis*) Giraffe (*Giraffa camelopardalis*), pigmy hippopotamus (*Choeropsis liberiensis*) and water chevrotain (*Hyemoschus aquaticus*). There is evidence that some of these have since become extinct and there is need for more species to receive special attention.

### III. Logging Activities

Logging activities in Nigeria is an encompassing one; it ranges from how it is harvested to its transportation, processing into planks and its sales. All this are done in compliance to the laws of the nation. Logging activities becomes illegal when forest laws

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are violated. K.k..These illegal activities have negative effect on the environment and economy of the nation. Illegal logging also threatens the livelihoods of around one billion forest-dependent people. Illegal logging starves cash-strapped governments of billions of dollars in revenue, undermines the rule of law, fosters corruption, and creates and fuels armed conflict. Illegal logging is also thought to depress world timber prices by as much as 16 per cent, distorting global markets and undermining operations. According to [18], illegal activities in the forest sector occur when wood is harvested, transported, processed, bought or sold in violation of national laws

These laws are breached due to some lapses in governance and forest management which could lead to over exploitation. [19] Explains that over exploitation of forests is caused by inadequate number of protective staff, absence of working plans and stocks maps, and insufficient use of the law to reserve forestland and protect it from destruction. The forest when viewed as a free good and converted to other uses asides its role in provision of environmental services has in itself grave consequences ranging from environmental degradation to economic losses as analyzed by [20-22] that forest offenses in their entirety have caused lots of environmental damage, cost governments billions of local currencies in lost revenue, promote corruption, and undermine the rule of law as well as good governance.

The interactions of social , cultural, political and economic forces leads to deforestation in any given area as decades go by which also varies from country to country. The agents of deforestation are those slash and burn farmers, ranchers, loggers, firewood collectors, infrastructure developers and others who are cutting down the forest. The level of interactions of these agents determines how intense deforestation in any given area will be.

### **IV. Non Timber Forest Products (Ntfps)**

NTFPS achieves multiple functions in the lives of the poor [23] ranging from direct household consumption which is by far the most important of these for both the poor and the less poor. [24-26]. This helps a lot of rural poor not to fall into further poverty and become food insecure. NTFPs play a vital livelihood resilience role. NTFPs are used to create capital assets for the household ( this includes housing, house furnishings, and productive farming and making of hunting equipment). NTFPs also supply needs which would otherwise have to be paid for, such as energy and medicinal. NTFPs thus make important contributions to income indirectly, as well as directly [23, 27-29]. Finally, NTFPs offer income generation, usually as supplementary income but sometimes as a primary, though usually modest, source of income [25,29].

### **V. Demand For Fuel Wood**

On Demand for fuel wood, [30] records that more than half of 9.6 million ha of rain forests in the south of Nigeria have been used to meet the demand for fuel wood in rural and urban neighborhoods. Rural and urban household that are nearer to the forest makes use of forest resources to meet their daily needs. [30] Analyzed that when comparing the costs of petroleum product, fuel wood is cheaper than any commercial fuel substitute, and this has over the years, increased forest depletion as this appears to decrease their expenditure on fuel to the detriment of the environment and the sustainability of the forest. The most common source of household energy in Nigeria has remained fuel wood, meeting 80% of domestic energy requirements. According to Stock 2008, [31] the majority of Nigeria's forest production is fuel wood, consumed either as charcoal or as wood. Forest wood and charcoal products consumption in 1992 alone were estimated at 55 million tons, suggesting that much forest woods are been used for domestic purposes over the years.

### **VI. Forest Management In Nigeria**

The formation of Forest management started in Nigeria in 1889 with the opening of the "office of woods and forests "in what was then the colony and protectorate of Lagos. At the early stage, due regard was given to standard forest management practices, which bestowed a high degree of sanctity in the forestry sector [32] (FAO, 2003). Since then, there have been several forest managements programmes in Nigeria which manages the forest areas in Nigeria, these administrative bodies lie at the topmost Federal level as such spread its jurisdiction to the state and local levels. Forest management is currently perceived as an activity aiming at sustaining wood production and providing firewood, food, other goods and services to bordering populations. Forests should be managed sustainably because they are the centers for cultural, spiritual, and recreational activities [33](Mammo Siraj et.al 2016) submits.

### **VII. Poverty And Food Insecurity**

Poverty is seen as a major problem in many developing countries in the world, including Nigeria. It is described as a vicious cycle, causing hunger and malnutrition, and is aggravated by rapid population growth. The causes of poverty have been linked to food insecurity [34]. [35] Orewa, Iyangbe 2010 ascertains that food insecurity among low-income urban and rural households is 79 %

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and 71 %, respectively with such households having limited economic and physical capacity to sustain their present level of wellbeing or cope with economic shocks as it were.

[36] Explained that the highest incidence of poverty i.e. the proportion of poor people in an area, was to be found in the most remote and forested areas, a pattern repeated again and again wherever there is the data to show the relationship between poverty and forests[37-39]. High poverty rates are found not only in remote high forest cover areas, but also in remote areas where forest is present but at much lower crown cover levels (Shepherd *et al.* 2012)[40]

Ultimately, deforestation has been traced to economic incentives. The developing world, entangled in poverty, engages in more deforestation due to this. Forests conversion, for them, is more profitable than forest conservation. Obviously, the many important functions of the forest have no markets and, hence, an economic value that is readily apparent to the people that rely on the forest for their wellbeing. Developing countries have taken a drastic stance on the issue of sustainability of the forest. They argue that the developed world had relied on deforestation for development at a point and, thus, it will be unfair to be told to conserve the forests. Moreover, they believe that the benefits of forests, such as carbon sinks and biodiversity reserves, go to the developed countries.

### VIII. Effects of Degradation and Deforestation.

#### A. Reduction in forest carbon storage, forest quality

Degradation of a standing forest, like deforestation, reduces carbon storage, the quality of species habitat, and the provision of local ecosystem services, such as water quality. For instance, in parts of the dry tropics (e.g., in Africa, Central America, and South Asia), fuel wood and fodder collection lowers forests' quality. While degradation is more difficult to track because it is not as visible in remotely sensed images, recent estimates suggest that degradation due to logging may account for 10% of total emissions in the tropics

#### B. Climate change

One of the most important ramifications of deforestation is climate change as it has effect on the global atmosphere. Deforestation contributes to global warming which occurs from increased atmospheric concentrations of greenhouse gases (GHG) leading to net increase in the global mean temperature this is because the forests are primary terrestrial sink of carbon. Hence, deforestation disrupts the global carbon cycle increasing the concentration of atmospheric carbon dioxide. Deforestation can change the global change of energy not only through the micrometeorological processes but also by increasing the concentration of carbon dioxide in the atmosphere [41](Pinker, 1980). Deforestation affects wind flows, water vapor flows and absorption of solar energy and clearly influencing local and global climate (Chomitz *et al.*, 2007)[42]

#### C. Water and soil resources loss

Deforestation also disrupts the global water cycle (Bruijnzeel, 2004)[43]. When the parts of the forest are removed, the area removed cannot hold as much water creating a drier climate. Water resources affected by deforestation include drinking water, fisheries and aquatic habitats, flood/drought control, waterways and dams affected by siltation, less appealing water related recreation, and damage to crops and irrigation systems from erosion and turbidity[44] (Anon., 1994a;[45] Bruijnzeel *et al.*, 2005).

#### D. Flooding

Deforestation can also result into watersheds that are no longer able to sustain and regulate water flows from rivers and streams. Once they are gone, too much water can result into downstream flooding, many of which have caused and still causing disasters in many parts of the world. Downstream flow causes soil erosion thus also silting of water courses, lakes and dams. Deforestation increases flooding mainly for two reasons. First, with a smaller 'tree fountain' effect, soils are more likely to be fully saturated with water. The 'sponge' fills up earlier in wet season, causing additional precipitation to run off and increasing flood risk. Second, deforestation often results in soil compaction unable to absorb rain. Locally, this causes a faster response of stream flows to rainfall and thus potential flash flooding [42](Chomitz *et al.*, 2007). Moreover deforestation also decrease dry season flows.

### IX. PERCEIVED WAY FORWARD

#### A. Poverty reduction programs

The governments are enjoined to put in place poverty reduction programs, these are crucial in reducing deforestation and degradation of the forest in the developing countries. This can be achieved through empowerment of local communities which



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will help to limit cutting down of trees as fuel wood for home consumption. These programs increases per capita income and consequently increase incomes.

### B. Increased Community Management of Forests

Government should become aware that public ownership alone discriminates against indigenous and local communities. There should be recognition of local communities in managing forest rather than public authorities only. It gives a sense of belonging. Forests owned and officially administered by indigenous and traditional communities have doubled over the last 15 years, and communities now own and administer approximately one-quarter of forests in developing countries—although with a great range of different tenure arrangements [46](RRI 2007).

### C. Capacity Building and Human Resource Development

Communities nearer to the forest should be actively involved in all forest management activities and decisions. This will make them feel that they own and have control over the forest hence addressing forest conservation through communal ownership and stewardship.

### D. Addressing of land tenure issue

The government should address livelihood and land tenure issues in areas/communities around the forest. This will help in reducing communal clashes as it relates to land as well as reduction in pressure on the forest resources as a source of livelihood.

### E. Educating nearby forest dwellers

Education of nearby forest dwellers is important in combatting forest degradation. The local communities should be educated on the importance of conserving the forest this is because literacy rates will reduce pressure on the remaining forests for new human settlement and land use change.

### F. Forest monitoring mechanisms

Lastly, there is a need to put in place effective forest monitoring mechanisms so as to avoid any future repetition of encroachments and illegal settlements in the forest.

## C. CONCLUSION

Forest degradation is a serious environmental, social and economic problem. In as much as global large scale agricultural activities contributes to deforestation in the world, Deforestation and Forest degradation in Africa remains dominated by small-scale processes, not by large-scale globalized agriculture. In Africa, it has been established that fuel wood collection and charcoal production, often in combination with livestock grazing in forests, contribute to forest degradation especially in other to have an additional source of income, poverty make dwellers to get involved in illegal activities such as illegal timber and NTFP extraction. Poverty can be an underlying cause for many of the direct and indirect drivers of forest degradation and deforestation. With this, much attention to baselines, monitoring, and targeted intervention will be required. It is therefore recommended that the government should put in place poverty reduction programs, these are pivotal in reducing deforestation and degradation of the forest, government should take education of nearby forest dwellers with so much importance as well as address land tenure issue amongst them. Local communities should be recognized in managing the forest and effective forest monitoring mechanisms should be in place so as to avoid any future repeat of encroachments and illegal settlements.

## REFERENCES

- 1) Food and Agriculture Organization of the United Nations (FAO), 2009. How to Feed the Word in 2050. Discussion paper prepared for Expert Forum: 12–13 October 2009, released 23 September
- 2) Van Kooten, G. C. And Bulte, E. H. 2000. *The economics of nature: managing biological assets*. Blackwells.
- 3) Wikipedia Encyclopedia. (2010). Sustainability of Forest Resources and Climate Change. Retrieved from [www.fao.org/global](http://www.fao.org/global) warming on the 5th of April, 2010
- 4) Geist H., Lambin E., 2001. What drives tropical deforestation? A meta-analysis of proximate and underlying causes of deforestation based on subnational case study evidence. Land-Use and Land-Cover Change (LUCC) Project, International Geosphere-Biosphere Programme (IGBP). LUCC Report Series: 4.
- 5) Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.

## Forest Degradation and Deforestation in Nigeria; Poverty Link

- 6) Kissinger G., 2011. Linking forests and food production in the REDD+ context. CCAFS Working Paper no. 1. CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS). Copenhagen, Denmark.
- 7) FAO (Food and Agriculture Organization of the United Nations), 2016a. *State of the world's forest*. Rome: FAO.
- 8) Federal Ministry of Environment (fmev) Nigeria Approved National Forest Policy. Federal Government of Nigeria;
- 9) Nations, Food and Agriculture Organization of the United. "Natural Forest Management". [www.fao.org](http://www.fao.org). Retrieved 19 February 2019.
- 10) Ja'afar-Furo MR 2016.. Dynamics of Poverty, Deforestation and Beekeeping in Northern Nigeria: Concerns for Policymakers Part II. *European Journal of Physical and Agricultural Sciences*. 2016; 4(1):33-41.
- 11) World Bank (WB). 2007. *Weak forest governance costs US\$15 billion a year*. News Release No. 2007/86/SDN (available at <http://go.worldbank.org/6ADTRN5M40/>) (Accessed March 2008.)
- 12) Inyang MP, Esohe KP. 2014. Deforestations, environmental sustainability and health implications in Nigeria: A review. *International Journal of Science, Environment and Technology*. 2014;3(2): 502–517.
- 13) Blanco-Canqui H., Lal R. (2010) Soil Erosion Under Forests. In: *Principles of Soil Conservation and Management*. Springer, Dordrecht
- 14) Jenkins, M. And Schaap, B. (2018) *Forest Ecosystem Services*.  
[https://www.un.org/esa/forests/wp-content/uploads/2018/05/UNFF13\\_bkgdstudy\\_forestsecoservices.pdf](https://www.un.org/esa/forests/wp-content/uploads/2018/05/UNFF13_bkgdstudy_forestsecoservices.pdf)
- 15) Hong, N.T. and Saizen, I. (2019) Forest Ecosystem Services and Local Communities: Towards a Possible Solution to Reduce Forest Dependence in Bach Ma National Park, Vietnam. *Human Ecology*, 47, 465-476.  
<https://doi.org/10.1007/s10745-019-00083-x>
- 16) Mengist, W. And Soromessa, T. 2019. Assessment of Forest Ecosystem Service Research Trends and Methodological Approaches at Global Level: A Meta-Analysis. *Environmental Systems Research*, 8, 1-18.  
<https://doi.org/10.1186/s40068-019-0150-4>
- 17) Nigeria's First national Biodiversity Report July 2001, <https://www.cbd.int/doc/world/ng/ng-nr-01-en.pdf>
- 18) Contreras-Hermosilla, A., & Peter, E. 2005. Best practices for improving law compliance in the forestry sector. *FAO Forestry Paper*, 145.
- 19) Udo, E. S. 1997. *Forest offences and impediment to forest resources conservation in Akwa-Ibom State* (pp. 8-14). In proceedings of the 25th Annual Conference of the forestry Association of Nigeria held in Ibadan Oyo state, Nigeria.
- 20) Greenpeace International. (1999). *Buying destruction: A Greenpeace report for corporate consumers of forest products* (pp. 16-17). Greenpeace International Amsterdam
- 21) Palmer, E. (2001). The extent and causes of illegal logging: An analysis of a major cause of deforestation in Indonesia. CSERGE (Centre for Social and Economic Research on the Global Environment) London.
- 22) Özden, S., & Ayan, S. (2016). Forest crimes as a threat to sustainable forest management. *Sibirskij Lesnoj Zurnal/Siberian Journal of Forest Science*, 4, 49-55. Doi: 10.15372/SJFS20160405
- 23) Shackleton, C., and pandey, A. 2014. Positioning nontimber forest products on the development agenda. *Forest Policy and Economics*
- 24) Kaimowitz, D. 2003. Not by bread alone. Forests and rural livelihoods in sub-Saharan Africa in Oksanen, T., Pajari, B., Tuomasjukka, (eds). *Forestry in poverty reduction strategies: capturing the potential*. EFI Proceedings, No 47. European Forest Institute, Joensuu.
- 25) Babulo, B., Muys, B., Tricked out NEGA, F., Tollens, E., Nysson, J., Deckers, J., Mathijs, E. 2009. The economic contribution of forest resource use to rural livelihoods in Tigray Northern Ethiopia. *Forest Policy and Economics* 11: 109–117.

## Forest Degradation and Deforestation in Nigeria; Poverty Link

- 26) Belcher, B., Ruiz-Perez, M., and Achdiawan, R. 2005. Global patterns and trends in the use and management of commercial ntfs: implications for livelihoods and conservation. *World Development* 33(9).
- 27) Rasul, G., Karki, M., and SAH, R. 2008. The role of non timber forest products in poverty reduction in India: prospects and problems. *Development in practice* 18: 779–788.
- 28) Shackleton, C., shackleton, s., buiten, E., and bird, N. 2007. The importance of dry forests and woodlands in rural livelihoods and poverty alleviation in South Africa. *Forest policy and Economics* 9: 558–577.
- 29) Shackleton, S., campbell, B., lotz-sisitka, H., and shackleton, C. 2008. Links between the local trading natural products, livelihoods and poverty alleviation in a semiarid region of South Africa. *World Development* 36.
- 30) Choji, I.D. 2005. The Impact of Government Policies on Fuel Prices on the Environment. *International Journal of Business and Common Markets Studies*, 3(2), 94 - 100
- 31) Stock, R, 2008. Nigeria. Microsoft® Encarta® 2009 [DVD]. Redmond, WA: Microsoft Corporation.
- 32) FAO. 2003. The State of the World's Forests. Food and Agriculture Organization, Rome.
- 33) Mammo Siraj, Kebin Zhang, Wang Xiao, Ahmad Bilal, Shale Gemechu, Kebede Geda, Terfe Yonas, Liu Xiaodan 2016: Does Participatory Forest Management Save the Remnant Forest in Ethiopia? The National Academy of Sciences, India 2016 DOI 10.1007/s40011-016-0712-4.
- 34) Fasoyiro SB, Taiwo KA. 2012. Strategies for increasing food production and food security in Nigeria. *J Agric Food Inform* 13 (4): 338-355.
- 35) Orewa, S.I., Iyangbe, C.O. (2009). The food insecurity profile among the rural and low-income urban dwellers in Nigeria. *Am.-Eurasia. J. Scien. Res.*, 4(4), 302–307.
- 36) Sunderlin, W.D., Dewi, S., Puntodewo, A., Müller, D., Angelsen, A., Epprecht, M. (2008). 'Why Forests are important for Global Poverty Alleviation: A Spatial Explanation'. *Ecology and Society* 13, 24. URL: <http://www.ecologyandsociety.org/vol13/iss22/art24/>.
- 37) Hulme, D. And shepherd, A. (eds) 2003. Special issue on Chronic Poverty and Development Policy. *World Development* 31(3), Washington USA.
- 38) Kanbur, R., and venables, A.J. (eds) 2005. *Spatial Inequality and Development* Oxford University Press, Oxford, UK.
- 39) Müller, D. And senf, C. 2010. *Global spatial associations of forests and poverty: analysis of 27 country cases*. Background document prepared for FAO-FRA 2010 Thematic study Forests, poverty and livelihoods. Humboldt University, Berlin and the Liebniz Institute of Agricultural Development. Halle Germany.
- 40) Shepherd, G., kazoora, C., and müller, D. 2012. *Forests, Livelihoods and Poverty Alleviation: the case of Uganda*. FAO,
- 41) Pinker R. The microclimate of a dry tropical forest. *Agricultural Meteorology*. 1980;22: 249-265
- 42) Chomitz KM, Buys P, Luca GD, Thomas TS, Wertz-Kanounnikoff S. At loggerheads? Agricultural expansion, poverty reduction and environment in the tropical forests. World Bank Policy Research Report. World Bank, Washington DC; 2007.
- 43) Bruijnzeel LA. Hydrological functions of tropical forests: Not seeing the soils for the trees? *Agriculture, Ecosystems and Environment*. 2004;104:185-228.
- 44) Anonymous. Deforestation Technical Support Package. Third International Conference on Environment Enforcement, Oaxaca Mexico April 25-28, 1994. World Wildlife Fund; U. S. Environmental Protection Agency and U. S. Agency for International Development; 1994.
- 45) Bruijnzeel LA, Bonell M, Gilmour DA, Lamb D. Forest, water and people in the humid tropics: An emerging view. In: *Forest, Water and People in the humid tropics*, eds. Bonell, M. And Bruijnzeel, L. A. Cambridge University Pres, Cambridge United Kingdom; 2005.

## Forest Degradation and Deforestation in Nigeria; Poverty Link

- 46) Rights and Resources Initiative (RRI). 2007. *Transitions in forest tenure and governance: drivers, projected patterns and implications for the global community* (available at <http://www.rightsandresources.org/documents/index.php?Pubid=133/>)



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# The Fractional Fokker-Planck Equation Analysis with the Caputo-Fabrizio Operator



Mohammed A. Hussein<sup>1</sup>, Hossein Ali Euaed<sup>2</sup>, Ahmed Baqer Jafer<sup>3</sup>

<sup>1,2</sup>Scientific Research Center, Thi-Qar University, Thi-Qar, Iraq.

<sup>3</sup>Faculty of Education for Pure Sciences, University of Thi-Qar, Nasiriyah, Iraq.

**ABSTRACT:** This study used the Daftardar-Jafari approach to find the approximate and analytical solution for the Fokker-Planck (F-P) equation with the operator Caputo-Fabrizio (DJM). The accuracy, efficiency, and simplicity of the current technique are excellent.

**KEYWORDS:** Daftardar-Jafari method; Fokker-Planck equation; fractional differential equation, Caputo -Fabrizio operator.

## 1. INTRODUCTION

Numerous theoretical and practical sciences, such as theoretical biology and ecology, solid-state mechanics, viscosity, optical fibers, data analysis, electrical control theory, stochastic economics, hydrodynamics, and dynamics, among others, significantly rely on the computation and analysis of nonlinear partial differential equation solutions. This process has been going on for at least half a century [1–3]. Numerous analytical and numerical techniques have been used recently to try and solve fractional differential equations (FDEs). Since most fractional differential equations lack exact solutions, approximating and numerical techniques are utilized to solve the FDEs. [4,5]. In this work, we use DJM to solve Fokker-Planck equation that include the fractional operator of the Caputo-Fabrizio type. One of the fundamental equations in the study of stochastic processes, like the Markov process, has been the Fokker-Planck (F-P) equation [6]. The transition probability density function  $\psi(\mu, \tau)$  is described by and is represented by this parabolic differential equation.

$$\frac{\partial \psi}{\partial \tau} = -\frac{\partial}{\partial \mu} \{A(\mu)\psi\} + \frac{1}{2} \frac{\partial^2}{\partial \mu^2} \{B(\mu)\psi\}, \tag{1}$$

Where coefficient A is known as the drifting term and coefficient  $B \geq 0$  is known as the fluctuation factor.

In this study, the DJ method was applied to the Fractional-order Fokker-Planck equation, where the general form of this equation is [7],

$$\frac{\partial^\lambda \psi}{\partial \tau^\lambda} = \frac{1}{2} \frac{\partial^2}{\partial \mu^2} \{B(\mu)\psi\} - \frac{\partial}{\partial \mu} \{A(\mu)\psi\}, 0 < \lambda < 1, \mu \in R, \tau > 0. \tag{2}$$

## 2. PRELIMINARIES OF FRACTIONAL CALCULUS

**DEFINITION 1** [8–11]. let  $\psi \in H^1(\varrho, \sigma), \varrho > \sigma, \varrho \in (-\infty, \tau), 0 < \lambda < 1$ , then, the definition of the Caputo-Fabrizio fractional derivative is

$${}^{CF}D_\tau^\lambda \psi(\tau) = \frac{\beta(\lambda)}{(1-\lambda)} \int_\varrho^\tau \psi'(s) \exp\left(-\frac{\lambda}{1-\lambda}(\tau-s)\right) ds \tag{3}$$

Where  $\beta(\lambda)$  is a normalizing function that satisfies  $\beta(0) = \beta(1) = 1$ .

The operator's fundamental characteristics are as follows:

- 1  ${}^{CF}D_\tau^\lambda \psi(\tau) = \psi(\tau)$ , where  $\lambda = 0$ .
- 2  ${}^{CF}D_\tau^\lambda [\psi(\tau) + \phi(\tau)] = {}^{CF}D_\tau^\lambda \psi(\tau) + {}^{CF}D_\tau^\lambda \phi(\tau)$ .
- 3  ${}^{CF}D_\tau^\lambda (c) = 0$ , where c is constant.

## The Fractional Fokker-Planck Equation Analysis with the Caputo-Fabrizio Operator

**DEFINITION 2** [5, 12, 13]. let  $\psi \in H^1(\varrho, \sigma)$ ,  $\varrho > \sigma$ ,  $\varrho \in (-\infty, \tau)$ ,  $0 < \lambda < 1$ , then, the fractional integral of order  $\alpha$  of a function  $u$  is defined by

$${}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\psi(\tau) = \frac{1-\lambda}{\beta(\lambda)}\psi(\tau) + \frac{\lambda}{\beta(\lambda)}\int_{\varrho}^{\tau}\psi(s)ds, \quad (4)$$

Where  $\beta(\lambda)$  is a normalizing function that satisfies  $\beta(0) = \beta(1) = 1$ .

1 The operator's fundamental characteristics are as follows:

2  ${}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\psi(\tau) = \psi(\tau)$ , where  $\lambda = 0$ .

3  ${}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}[\psi(\tau) + \phi(\tau)] = {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\psi(\tau) + {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\phi(\tau)$

4  ${}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}[{}_{\varrho}^{\text{CF}}D_{\tau}^{\lambda}\psi(\tau)] = \psi(\tau) - \psi(0)$

### 3. THE TECHNIQUE ANALYSIS

Let's suppose that Eq.(2) with  $\psi(\mu, 0) = \psi_0(\mu)$ . The typical format of Eq.(2) in Caputo-Fabrizio sense is

$${}_{\varrho}^{\text{CF}}D_{\tau}^{\lambda}\psi = \frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{B(\mu)\psi\} - \frac{\partial}{\partial\mu}\{A(\mu)\psi\} \quad (5)$$

with initial conditions

$$\psi(\mu, 0) = \psi_0(\mu)$$

where  ${}_{\varrho}^{\text{CF}}D_{\tau}^{\lambda}\psi(\mu, \tau)$  is Caputo-Fabrizio operator of  $\psi(\mu, \tau)$ ,  $0 < \lambda \leq 1$ .

The result below is obtained by applying the Caputo-Fabrizio integral to both sides of Eq.(5).

$${}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}[{}_{\varrho}^{\text{CF}}D_{\tau}^{\lambda}\psi(\mu, \tau)] = {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{B(\mu)\psi\}\right] - {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{\partial}{\partial\mu}\{A(\mu)\psi\}\right], \quad (6)$$

then, we obtain

$$\psi(\mu, \tau) = \psi(\mu, 0) + {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{B(\mu)\psi\}\right] - {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{\partial}{\partial\mu}\{A(\mu)\psi\}\right]. \quad (7)$$

We are trying to find a series-formable solution to Eq.(7),

$$\psi(\mu, \tau) = \sum_{n=0}^{\infty} \psi_n(\mu, \tau), \quad (8)$$

When Eq.(7) is changed to reflect the decomposition series Eq.(8), it produces

$$\sum_{n=0}^{\infty} \psi_n(\mu, \tau) = \psi_0(\mu) + {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{B(\mu)(\sum_{n=0}^{\infty} \psi_n)\}\right] - {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{\partial}{\partial\mu}\{A(\mu)(\sum_{n=0}^{\infty} \psi_n)\}\right]. \quad (9)$$

Additionally, recurrence is used to describe the relationship so that

$$\begin{aligned} \psi_0(\mu, \tau) &= \psi_0(\mu), \\ \psi_{n+1}(\mu, \tau) &= {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{B(\mu)(\psi_n)\}\right] - {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{\partial}{\partial\mu}\{A(\mu)(\psi_n)\}\right]. \end{aligned} \quad (10)$$

The approximate k-term solution of Eq. (5) is thus provided by:

$$\psi(\mu, \tau) = \psi_0(\mu, \tau) + \psi_1(\mu, \tau) + \psi_2(\mu, \tau) + \psi_3(\mu, \tau) + \dots \quad (11)$$

### 4. APPLICATION

Take into account the time fractional F-P equation of order with  $\psi(\mu, 0) = \mu$ . We choose the constant fluctuation term  $B(\mu) = 2k$  and the drift term  $A(\mu) = \mu$  for simplicity. Using the relationship Eq.(10), we immediately

$$\begin{aligned} \psi_0 &= \mu, \\ \psi_1 &= {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{2k\psi_0\}\right] - {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{\partial}{\partial\mu}\{-\mu\psi_0\}\right] \\ &= 2\mu(1 - \lambda + \lambda\tau), \\ \psi_2 &= {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{2k\psi_1\}\right] - {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{\partial}{\partial\mu}\{-\mu\psi_1\}\right] \\ &= 4\mu\left[(1 - 2\lambda + \lambda^2) + (2\lambda - 2\lambda^2)\tau + \frac{1}{2}\lambda^2\tau^2\right], \\ \psi_3 &= {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{1}{2}\frac{\partial^2}{\partial\mu^2}\{2k\psi_2\}\right] - {}_{\varrho}^{\text{CF}}I_{\tau}^{\lambda}\left[\frac{\partial}{\partial\mu}\{-\mu\psi_2\}\right] \\ &= 8\mu\left[(1 - 3\lambda + 3\lambda^2 - \lambda^3) + (1 - 3\lambda^2 + 2\lambda^3)\tau + \left(\lambda - \frac{1}{2}\lambda^2 - \frac{1}{2}\lambda^3\right)\tau^2 + \frac{1}{6}\lambda^2\tau^3\right]. \end{aligned} \quad (12)$$

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Now, the approximate solution of Eq.(5) is

$$\begin{aligned} \psi(\mu, \tau) = & \mu + 2\mu(1 - \lambda + \lambda\tau) + 4\mu \left[ \begin{array}{l} (1 - 2\lambda + \lambda^2) \\ + (2\lambda - 2\lambda^2)\tau + \frac{1}{2}\lambda^2\tau^2 \end{array} \right] \\ & + 8\mu \left[ \begin{array}{l} (1 - 3\lambda + 3\lambda^2 - \lambda^3) + (1 - 3\lambda^2 + 2\lambda^3)\tau \\ + \left(\lambda - \frac{1}{2}\lambda^2 - \frac{1}{2}\lambda^3\right)\tau^2 + \frac{1}{6}\lambda^2\tau^3 \end{array} \right] + \dots \end{aligned} \quad (13)$$

The Eq.(13) provides a rough solution to the form.,

$$\psi(\mu, \tau) = \mu e^{2\tau},$$

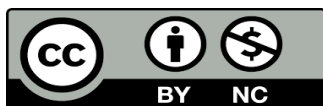
for  $\lambda = 1$ , which is the exact solution of Eq. (5) at  $\lambda = 1$ .

### 5. CONCLUSIONS

This method, which has demonstrated its effectiveness in solving these kinds of equations, is one of the most significant and current strategies for solving linear and nonlinear differential equations. We made a significant discovery in this study, the idea is those differential equations utilizing the Caputo-Fabrizio fractional operator may be effectively solved using this method. We solved the Fokker-Planck equation, one of the most important physics equations..

### REFERENCES

- 1) Jassim, Hassan Kamil, and M. A. Shareef. "On approximate solutions for fractional system of differential equations with Caputo-Fabrizio fractional operator." *Journal of Mathematics and Computer science* 23 (2021): 58-66.
- 2) Hussein, Mohammed Abdulshareef. "A Review on Integral Transforms of Fractional Integral and Derivative." *International Academic Journal of Science and Engineering* 9 (2022): 52-56.
- 3) Hussein, Mohammed Abdulshareef. "A review on integral transforms of the fractional derivatives of CaputoFabrizio and Atangana-Baleanu." *Eurasian Journal of Media and Communications* 7 (2022): 17-23.
- 4) Mohammed Abdulshareef Hussein, Hassan Kamil Jassim. "New approximate analytical technique for the solution of two dimensional fractional differential equations." *NeuroQuantology* 20 (2022): 3690-3705.
- 5) Hussein, Mohammed Abdulshareef. "A Review on Algorithms of Sumudu Adomian Decomposition Method for FPDEs." *Journal of Research in Applied Mathematics* 8 (2022): 36-43.
- 6) Odibat, Zaid, and Shaher Momani. "Numerical solution of FokkerPlanck equation with space-and time-fractional derivatives." *Physics Letters A* 369.5-6 (2007): 349-358.
- 7) Podlubny, Igor. *Fractional differential equations: an introduction to fractional derivatives, fractional differential equations, to methods of their solution and some of their applications.* Elsevier, 1998.
- 8) Hussein, Mohammed Abdulshareef. "A Review on Algorithms of Laplace Adomian Decomposition Method for FPDEs." *Scientific Research Journal of Multidisciplinary* 2 (2022): 1-10.
- 9) Hussein, Mohammed Abdulshareef. "The Approximate Solutions of fractional differential equations with Antagana-Baleanu fractional operator." *Mathematics and Computational Sciences* 3 (2022): 29-39..
- 10) Shaikh, A., Tassaddiq, A., Nisar, K. S., Baleanu, D. (2019). Analysis of differential equations involving CaputoFabrizio fractional operator and its applications to reactiondiffusion equations.
- 11) *Advances in Difference Equations*, 2019(1), 1-14.
- 12) Caputo, M., Fabrizio, M. (2015). A new definition of fractional derivative without singular kernel. *Progr. Fract. Differ. Appl.*, 1(2), 1-13.
- 13) Al-Salti, N., Karimov, E., Sadarangani, K. (2016). On a differential equation with Caputo-Fabrizio fractional derivative of order  $1 < \beta \leq 2$  and application to mass-spring-damper system. arXiv preprint arXiv:1605.07381.
- 14) Atangana, A., Alqahtani, R. T. (2016). Numerical approximation of the space-time Caputo-Fabrizio fractional derivative and application to groundwater pollution equation. *Advances in Difference Equations*, 2016(1), 1-13.



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## The Relationship between Parenting and Sexual Behavior in Adolescents

Wahyu Widagdo<sup>1</sup>, Nadia Millenia<sup>2</sup>

<sup>1,2</sup> Department of Nursing, Health Polytechnic of Jakarta I, Jakarta, Indonesia



**ABSTRACT:** Adolescence is a period where sexual development begins, therefore adolescent experience unstable emotions with sexual behavior. This causes adolescents to tend to engage in irresponsible sexual behavior. Therefore, parents have a very important role, in this case applying the right parenting style to the development of adolescents. The 2017 Indonesian Demographic and Health Survey reported that around 4% of young men had experience of having sexual relations before marriage, namely young men aged 15-19 years. This study aims to analyze the relationship between parenting and sexual behavior in adolescents by using a cross sectional design and the number of samples is 116 adolescents. Data were collected using a questionnaire distributed through the google form. The conclusion in this study is that there is a relationship between parenting and sexual behavior in adolescents with value = 0.005, value = 0.05 ( $p < \alpha$ ). In this research, the researcher would like to recommend to the next researcher to continue the research by using multivariate analysis to process the data.

**KEYWORDS:** Adolescents; Parenting Sexual behavior

### I. INTRODUCTION

Adolescence is a period marked by biological and psychological development in which at this time there is a transitional period between the right-child period and the adult period. It is characterized biologically by the growth and development of primary and secondary sex. And psychologically characterized by attitudes and moods as well as desires and emotions that fluctuate [1–3].

Adolescence sometimes experience difficulties as a result of their unstable and erratic attitudes, moods, wills, and emotions. Adolescents face various problems because adolescence is a period of growth or transition, and adolescents cannot stand alone in making or determining decisions without supervision from the surrounding environment. Some problems that are vulnerable to occur in adolescents such as smoking, drugs, alcohol, and premarital sexual behavior are becoming increasingly common [4,5].

Based on data from the 2020 Census, the number of adolescents in Indonesia is 69,824,459. Meanwhile, according to data from the DKI Jakarta Statistics Agency, the number of adolescents in DKI Jakarta in 2020 is 874,865 in the 10-14 year age range, 825,828 in the 15-19 year age range, and 818,096 in the 20-24 year age range. Among high school students in the United States surveyed in 2019, it was found that 38% of students had had sexual intercourse. Another study conducted among adolescents (aged 17-20 years) in Northern Thailand revealed that 62.4% of men and 34.4% of women had experienced sexual intercourse (Tangmunkongvorakul et al., 2011 in Mai & Kittisuksathit, 2019). The 2017 Indonesian Demographic and Health Survey reported that around 4% of young men had had sexual intercourse before marriage, namely male adolescents aged 15-19 years. Research by Nadirahilah & Nurdiansyah, (2019) revealed that 74 adolescents (54.8%) in the Pulau Harapan Village, Kepulauan Seribu had risky sexual activities, and 29 adolescents had experience of having sexual relations (21.5 percent) [6–8].

Adolescence often violate social norms that apply in society which causes sexual behavior to occur. Sexual behavior is an act that is motivated by human sexual desire, when viewed from the form of behavior, it usually starts from being attracted to each other, dating, making out to having sex either with oneself, a stranger or an individual in a dream that can be used as a sexual object. Sexual behavior in adolescents is strongly influenced by how the family carries out its roles and functions towards adolescents in the family. As previously mentioned, adolescents often face various problems that cannot be overcome, therefore the family plays an important role because the family is the first social member who can complete adolescence [9–11]. In building behavior and personality until reaching adulthood, there are parenting styles that play an important role, and



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each parent has a different parenting style. Parenting can be classified into three types, namely authoritarian parenting, authoritative parenting and permissive parenting [12,13].

### II. METHOD AND MATERIAL

This research is a quantitative research with a cross sectional or cross sectional correlative method. Collecting data using a questionnaire in the form of a google form given to respondents at one time. The research was conducted in March 2022 at a private high school in Jakarta. The sample of this study was 116 people using a consecutive sampling technique, namely by taking samples that met the inclusion criteria sequentially until a number of samples were obtained.

Data was collected using a Likert scale questionnaire. In the parenting questionnaire taken from research (Najibah, 2017), this questionnaire contains 24 statements consisting of 18 favorable statements and 6 unfavorable statements. The statement on the questionnaire is a positive/favorable statement with four answer choices, namely a score of 4 for the answer choice always, a score of 3 for the answer often, a score of 2 for the answer sometimes, and a score of 1 for the answer never. In the negative/unfavorable statement, a score of 1 for the answer choice is always, a score of 2 for the answer is often, a score of 3 for the answer is sometimes, and a score of 4 for the answer is never. The questionnaire used to measure sexual behavior was taken from research conducted by (Nurmaguphita, 2014) using a sexual risk behavior questionnaire, namely SRS (Sexual Risk Survey). This questionnaire consists of knowledge about reproductive health and sexuality, attitudes towards sexual behavior and sexual activity. The form of questions used using a Likert scale with alternative answers of strongly agree, agree, disagree and strongly disagree for the knowledge and attitude domains as well as always, often, rarely, and never answers for the activity domain. The score for the knowledge domain is worth 1 to 4 while for the attitude and activity domain it is worth 4 to 1.

Grouping the types of parenting is done by making a total score, then using the class length formula. After the length of the class is known, then the type of parenting can be determined where the scores for permissive parenting are: 38-51, democratic parenting: 52-65, authoritarian parenting: 66-79. In the sexual behavior variable, the grouping of adolescent sexual behavior is done by looking for each domain value. Adolescents are said to have sexual behavior if two or three domains are of low or negative value. The data then analyzed the frequency distribution and Chi-Square.

### III. RESULT

**Table 1. Frequency distribution of respondent characteristics**

Respondent characteristics	Frequency	%
<b>Gender</b>		
Male	54	46.6
Female	62	53.4
<b>Religion</b>		
Muslim	105	90.5
Non-Muslim	11	9.5
<b>Ethnic</b>		
Javanese	61	54.3
Outside Javanese	55	45.7
<b>Previous Education</b>		
Junior high school	103	88.8
Islamic Junior high school	13	11.2

Table 1 shows that the majority of adolescents in this study were female 62 people (53.4%), male there were 54 people (46.6%), Muslim there were 105 people (90.4%), non-Muslim 11 people (9, 5), there are 55 Javanese people (45.7 people outside the Javanese ethnicity, 61 people (54.3%), previous education in junior high school 103 people (88.8%), and Islamic junior high school there are 13 people (11.2%).

**Table 2. Frequency distribution of parenting**

Parenting	Frequency	%
Permissive	43	37.1
Authoritarian	32	27.6
Democratic	41	35.3

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Total	116	100
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Based on table 2 shows that 43 people (37.1%) the majority of parenting styles received by adolescents are permissive parenting, while 32 people (27.6%) have authoritarian parenting and 41 people (35.3%) have democratic parenting.

**Table 3. Frequency distribution of sexual behavior adolescents**

Sexual behavior	Frequency	%
Risk	45	38.8
Non-risk	71	61.2
Total	116	100

Based on table 3 above, it shows that the majority of respondents have non-risk sexual behavior as many as 71 people (61.2%) while 45 people (38.8%) are at risk for sexual behavior.

**Table 4. Chi square test between parenting and sexual behavior in adolescents**

Parenting	Sexual behavior				Total		p-value
	Risk		Non-risk		n	%	
	n	%	n	%			
Permissive	23	53.5	20	46.5	43	100	0.005
Authoritarian	14	43.8	18	56.3	32	100	
Democratic	8	19.5	33	80.5	41	100	
Total	45	38.8	71	61.2	116	100	

Table 4 shows that the from 116 respondents, most of the adolescents who received permissive parenting from their parents had risky sexual behavior as many as 23 people (53.5%), and 20 people (46.5%). Respondents who have authoritarian parenting and risky sexual behavior are 14 people (43.8), and 18 people are not at risk (56.3%). As for democratic parenting, as many as 8 people (19.5%) have risky sexual behavior, and 33 people are not at risk (80.5%).

The table above shows that the value of  $\chi^2 = 0.005$ , meaning that  $\chi^2 < 0.05$  ( $p < \alpha$ ) which can be concluded that  $H_0$  is rejected or  $H_a$  is accepted or there is a significant relationship between parenting patterns and sexual behavior in adolescents in Widuri Family High School.

## IV. DISCUSSION

Based on the results of the analysis, it was found that the majority of adolescents in the Widuri Family Senior High School had 45 people (41.4%). The results of this research are not in line with the findings of Masni & Hamid which examined the determinants of risky sexual behavior in Makassar adolescents at Santri Darul Arqam Gombara and State Senior High School 6 Makassar. The results of these findings illustrate the high risk of sexual behavior in adolescents indicating the influence of religious understanding, peers, and the use of social media on risky sexual behavior [14].

Then, there is a study by Wakasa et al. which also shows a high risk of sexual behavior in high school adolescents in Guduru, Ethiopia. In the study, 352 (29.8%) of the 1181 participants indicated that they had had sexual intercourse and all analyzes focused on that group. Further analysis explained that there were more than two thirds of the participants, as many as 240 people (68.2%) had risky sexual behavior. However, a study conducted by Padut et al. on 12th grade adolescents at MAN Manggarai Timur, found that adolescents had less risky sexual behavior compared to those who had non-risky sexual behavior in which boys were more likely to engage in sexual behavior riskier than women [15,16].

Another study by Mahmudah et al. which examined what factors were related to adolescent sexual behavior in Padang city high school, found that the majority of adolescents in the high school had 79.1% risky sexual behavior and 20.9% risk, as many as 5, 1% of adolescents who have risky sexual behavior admit that they have had sexual intercourse. Because curiosity / trial and error the most reason they have sexual intercourse (50%). Adolescence is a period where sexual development begins, therefore adolescents experience unstable emotions with sexual behavior. This situation triggers adolescents to lead to irresponsible sexual behavior. During adolescence, physical changes occur, including sexual organs that can increase sexual drive or sexual libido which requires distribution in certain sexual behavior patterns, this is also due to sexual hormones in adolescents starting to become active [17].

## **The Relationship between Parenting and Sexual Behavior in Adolescents**

Based on the results of the analysis, the from 116 respondents, most of the adolescents who received permissive parenting from their parents had risky sexual behavior as many as 23 people (53.5%), and 20 people (46.5%). Respondents who have authoritarian parenting and risky sexual behavior are 14 people (43.8), and 18 people are not at risk (56.3%). As for democratic parenting, as many as 8 people (19.5%) have risky sexual behavior, and 33 people are not at risk (80.5%), the value of  $p = 0.005$ , meaning that  $p < 0.05$ , there is a significant relationship between parenting patterns and sexual behavior in adolescents.

Sexual behavior is an act that is motivated by human sexual desire, when viewed from the form of behavior, it usually starts from mutual interest, dating, making out to having sex either with oneself, a stranger, or an individual in a dream that can be used as a sexual object [10]. Parenting is defined as a series of activities and interactions between parents and their children in raising their children. Sexual behavior in adolescents is strongly influenced by how the family carries out its roles and functions towards adolescents in the family. Adolescents often face various problems that cannot be overcome, therefore the family plays an important role because the family is the first social member who can complete adolescence [11].

Adolescents will try to find their own way out to solve these problems outside the family environment, but this can backfire for adolescents where adolescents can be easily influenced by things that can pose a risk to adolescent development. This can occur as a result of not strong self-control in adolescents. The parenting style applied to adolescents has an important contribution to growing the actions and attitudes of a teenager until he reaches adulthood.

Based on the results above, it shows that adolescents who have democratic parenting from their parents lead to risky sexual behavior. While in permissive parenting style, adolescents tend to have risky sexual behavior. The results of this study are in line with the research of Ungsianik & Yuliati, where adolescents who receive permissive neglectful parenting tend to have risky sexual behavior. What is meant by permissive neglectful here is that parents tend not to contribute to their children's lives because parents believe their children should live their own lives, free from parental control. Usually, teenagers who accept this parenting style will feel neglected, not concerned with the interests of the child, and tend to be uncommunicative [18].

Research conducted by Setiawan et al. also describes adolescent respondents (100%) who engage in sexual behavior before marriage receiving permissive parenting from their parents. Supervision from parents is very important for adolescents who have sex before marriage because this parenting style has less parental control. Another study by Padut et al. showed that only 1 adolescent who had risky sexual behavior and accepted a democratic parenting style (1.1%), while adolescents who had risky sexual behavior and received a permissive parenting style were at most 17 people (18.9%) [11,16].

Sexual behavior by adolescents may have several future impacts for the adolescents themselves and the surrounding environment, namely the reduced sense of youth's enthusiasm for learning; at risk of becoming pregnant; quit school; shame on themselves and their parents, feelings of disappointment, anger, even trauma; marry young and have to support children and wife at a young age, possibly suffering from sexually transmitted infections; the moral and social consequences of society can bear a difficult burden. Therefore, parents are required to apply appropriate parenting styles and increase awareness related to adolescent views on sexual behavior. In addition, sex education is very important given by parents to adolescents so that they have good information and can avoid these risky behaviors [8].

## **V. CONCLUSIONS**

Based on the results of the study, it can be concluded that there is a significant relationship between parenting and sexual behavior in adolescents in Jakarta.

## **ACKNOWLEDGMENT**

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## **CONFLICT OF INTEREST**

The author declared that don't have conflict of interest

## **ETHICAL CLEARANCE**

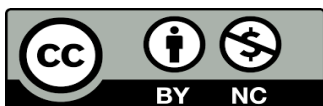
This research has received ethical approval from the Research Ethics Committee, Health Polytechnic of Jakarta I No.019/KEPK/II/2022.

## **REFERENCES**

- 1) Rees D, Morley D. Child and adolescent mental health. Public Heal Child 2015:221–46.

## The Relationship between Parenting and Sexual Behavior in Adolescents

- 2) Brizio A, Gabbatore I, Tirassa M, Bosco FM. "No more a child, not yet an adult": Studying social cognition in adolescence. *Front Psychol* 2015;6:1011.
- 3) Hidayati KB, Farid M. Konsep diri, adversity quotient dan penyesuaian diri pada remaja. *Pers J Psikol Indones* 2016;5:137–44.
- 4) Mendo-Lázaro S, León-del-Barco B, Polo-del-Río M-I, Yuste-Tosina R, López-Ramos V-M. The role of parental acceptance–rejection in emotional instability during adolescence. *Int J Environ Res Public Health* 2019;16:1194.
- 5) Avilla T. Gambaran Pelaksanaan Pelayanan Kesehatan Peduli Remaja (PKPR) Di Puskesmas Dupak Surabaya. *J Promkes Indones J Heal Promot Heal Educ* 2019;7:78–87.
- 6) Badan Pusat Statistik. Hasil Sensus Penduduk 2020. 2021.
- 7) Mai V, Kittisuksathit S. Factors influencing pre-marital sexual intercourse among unmarried young individuals in Cambodia. *Makara J Heal Res* 2019;23:4.
- 8) Susanto N. Description of Sexual Behavior Risk on Early Adolescent in Hope Island Villages of Thousand Island. *Hum Care J* 2019;4:42–7.
- 9) Homma Y, Wang N, Saewyc E, Kishor N. The relationship between sexual abuse and risky sexual behavior among adolescent boys: A meta-analysis. *J Adolesc Heal* 2012;51:18–24.
- 10) Sarwono SW. Psikologi Remaja edisi revisi. Jakarta Rajawali Pers 2011.
- 11) Setiawan A, Juniarti N, Adistie F. Gambaran Pola Asuh Orang Tua pada Remaja dengan Perilaku Berisiko di SMK Kabupaten Pangandaran. *J Kesehat Komunitas* 2020;6:129–34.
- 12) Abdul Gafor K, Kurukkan A. Construction and Validation of Scale of Parenting Style. *Online Submiss* 2014;2:315–23.
- 13) Masitah W, Sitepu JM. Development Of Parenting Models In Improving Children's Moral Development. *Nazhruna J Pendidik Islam* 2021;4:769–76.
- 14) Masni HSF. Determinan Perilaku Seksual Berisiko pada Remaja Makassar (Studi Kasus Santri Darul Arqam Gombara dan SMAN 6) Determinan of Sexual Behavior Risk in Adolescent Makassar (Case Study on Students of MA Darul Arqam Gombara and SMAN 6). *J Media Kesehat Masy Indones* 2018;14:68–77.
- 15) Wakasa BF, Oljira L, Demena M, Regassa LD, Daga WB. Risky sexual behavior and associated factors among sexually experienced secondary school students in Guduru, Ethiopia. *Prev Med Reports* 2021;23:101398.
- 16) Padut RD, Nggarang BN, Eka AR. Faktor–faktor yang berhubungan dengan perilaku seksual berisiko pada remaja kelas XII DI MAN Manggarai Timur Tahun 2021. *Wawasan Kesehat* 2021;6.
- 17) Mahmudah M, Yaunin Y, Lestari Y. Faktor-faktor yang berhubungan dengan perilaku seksual remaja di Kota Padang. *J Kesehat Andalas* 2016;5.
- 18) Ungsianik T, Yuliati T. Pola asuh orang tua dan perilaku seksual berisiko pada remaja. *J Keperawatan Indones* 2017;20:185–94.



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## Adult's Attitudes towards Disability in the Greek Community



Polyzopoulou Konstantia<sup>1</sup>, Tsakiridou Helen<sup>2</sup>

<sup>1</sup> Department of Public and One Health, University of Thessaly, Karditsa, 43100, Greece

<sup>2</sup> Professor of Applied Statistics and Research Methodology, Department of Regional and Cross Border Development Studies, University of Western Macedonia, Koila, 50100, Kozani, Greece

**ABSTRACT:** Social environment consists of a vital place where all human beings can run their lives and participate in a multidimensional way in the daily activities of life. In that environment, people express their thoughts, feelings and behavior, developing in order to communicate and share their lives with the others. All these expressions consist attitudes that influence the way they co-exist with everyone in the society. Each member of the society possesses unique abilities and special needs and contribute in an important grade in the promotion of social living. Studying attitudes of individuals towards disability is useful as a key factor in integrating these individuals into society. The present study involved 150 people who completed the Attitudes towards Persons with Disabilities (ATDP-Form B) scale. The results showed that overall a moderately positive attitude towards people with disabilities develops, without any differences between the groups in terms of gender, year of birth, educational level, and contact with a friend or relative with a disability. Interpretations of the results are commented based on existing research.

**KEYWORDS:** disability, adults, attitudes, inclusion, social environment

### I. INTRODUCTION

The participation of all individuals, regardless of their needs and abilities, in community activities and in areas of daily life is an inalienable right of human existence. Many people who experience a state of illness and deficiency perceive the complex nature of illness and disability as a result of social construction (Newell, 2006) and there is denoted that they receive stigmatized behaviors. Labelling referred to terms of identity and disability include consequences of economic, political, cultural and social nature (Tarlo, Fyson & Roberts, 2022). Therefore, it happens that some people are excluded from human action due to the difficulty of responding in a functional and independent way to the demands of everyday life. This different attitude creates feelings of anxiety in individuals and shapes attitudes that influence perceptions and choices, so that negative attitudes generalize the universal exclusion of individuals with disabilities from community actions while positive attitudes lead to the search of opportunities that create the conditions for inclusion of all individuals in society as a whole (Patrick, 1987).

Research in attitudes towards people with disabilities can lead to experience a satisfying level of quality of life related to health for everyone independently. Health is interpreted as a biological and psychosocial situation, which affects everyday living (Gritti, 2017). The procedure of promoting health is related to the improvement of knowledge and skill of everyone, practitioners or non practitioners in a global level (Smith, Tang & Nutbeam, 2006).

The study of attitudes towards people with disabilities allows the evaluation of cognitive interpretation, emotional mood and practical readiness towards issues and phenomena of everyday life. The word "attitude" comes from the Italian word "Attitudine", which means "posture or fitness" but its original adaptation comes from the Latin word "Aptus" which means "fit or posture" (Sharma, Yadav & Sharma, 2021). The authors themselves briefly define the concept of attitude as an evaluation of a person's thoughts, beliefs and feelings towards a phenomenon or situation, which can be memory structures of a creative, stable and accessible nature. Also, the concept of attitude is defined as a psychological state, which predisposes a person to act and is an important driving force, based on beliefs that are evaluative responses to these attitudes (Wilczenski, 1991).

A person is characterized as disabled based on their external appearance that composes a stigmatized or stereotypical view of society in general (Sharma, Yadav, & Sharma, 2021). The same authors state that people with disabilities are all people who are unable to perform their tasks regularly in daily practice and such a feature is attributed to people with disabilities, regardless of

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the form of disability they present, without knowing their disability. A disability can take the form of cognitive, physical, aesthetic, developmental and emotional disability or sometimes it can be a combination of all these difficulties.

In particular, a positive attitude refers to the belief that those with disabilities can be productive members of the community, make decisions for their own benefit, and lead a normal life. On an emotional level, it indicates a sensitivity towards the positive characteristics of individuals and a liking for those individuals. At the behavioral level, it implies the creation of appropriate conditions that contribute to the support of individuals and the encouragement to exercise their creative ability, satisfying the sense of self-sufficiency and contribution to the community (Tervo & Palmer, 2004).

### II. PREVIOUS RESEARCH

People with disabilities are subject to stigma and discrimination in their daily lives, which leads to mental illness (Sharma, Yadav & Sharma, 2021). The study of negative attitudes towards disability is useful, as it recognizes and determines the consequences of negative attitudes within society and in the social interaction of all individuals - members of a society, regardless of the presence or absence of disability (Tervo & Palmer, 2004). Furthermore, the study of positive attitudes also helps to confirm variables that contribute to this development and are an incentive for further investigation and improvement of these variables, in order to improve the components that favor the acceptance of people with disabilities.

In a study conducted in Greece (Matziou et al., 2009), the attitudes of the participants towards disability were negative, women showed more positive attitudes than men while age did not appear to be a differentiating factor. Another study found no differences concerning the gender variable while contact with a person with a disability did not affect individuals' attitudes (Furnham & Pendred, 1983), a variable that had a different effect in another study (Santiago, Lee & Roper,). Following, gender had no effect on attitude formation as did variable contact / with people with disabilities (Santiago, Lee & Roper, 2016).

Previous research has examined variables related to gender, age - year of birth, possession or not of knowledge about the concept of disability and the source of this knowledge and the type of contact with a person with a disability (family - relative or friendly environment) (Wilczenski, 1991; Grames & Leverentz, 2010; Kritsotakis et al., 2017; Arsić et al., 2021; Sivrikaya & Kardaş, 2021). The present research is an initial attempt to approach the attitude of adults in Greece towards disability, in order to form a first picture of the trend of social acceptance of people with disabilities.

### III. THE RESEARCH

#### A. Sample

The survey involved 150 people, of whom 38 (25.3%) are men and 112 (74.7%) are women. Of the total individuals in the sample, 20 (13.3%) individuals were born in the years 1950-1970, 50 (33.3%) individuals in the years 1971-1990 and 71 (47.3%) individuals in the years 1991-2003. Of the participants, 27 (18%) have a second degree, 46 (30.7%) possess a master's degree and 15 (10%) have completed a doctorate. Of all the people in the sample, 69 (46%) stated that they have a friendly relationship with a person with disability, while 80 (53.3%) people do not have a friend with a disability. Also, from the total sample, 46 (30.7%) people have a person with a disability in the family environment, while 102 (68%) people do not have a person with a disability in the family or relative environment.

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

Demographic variables	Participants N = 150	Total (f)	Relative Frequencies (%)
Gender	Men	38	25.3
	Women	112	74.7
Year of birth	1950-1970	20	13.3
	1971-1990	50	33.3
	1991-2003	71	47.3
Education levels	Second degree	27	18
	Master degree	46	30.7
	PhD	15	10
Friend with a disability	Yes	69	46
	No	80	53.3
Family or family person with a disability	Yes	46	30.7
	No	102	68

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### **B. Instrument**

The Attitudes Toward Disabled Persons Scale (ATDP) (Form B) (Yuker, Block, & Youngg 1970) was administered for the study. This scale was created as an attempt to measure attitudes towards the general concept of disability and not as a measure of attitudes towards a group of people with a specific form of disability. With the administration of the questionnaire, descriptive surveys have been conducted that study individuals' attitudes towards disability (White & Olson, 1998).

The questionnaire was developed in three forms (Form O, Form A, Form B). Each scale includes items that are graded on a 6-point scale (from (+3) "strongly agree" to (-3) "strongly disagree"). Scores range from 0 to 180, with higher scores indicating more positive / favorable attitudes towards people with disabilities. Specifically, regarding the grading of the scale, the creators of the scale have formed some norms based on which the positive and negative attitude are defined. The standard scores were based on surveys that yielded results for means, standard deviation, and sample size for men and women, with or without disability. The highest score indicates a positive attitude and a score equal to 111 and above indicates a positive attitude for men; also, a score of 113 and above is considered to indicate a positive attitude for women. This division in scores aroused as women consistently showed higher scores than men on the scale, and as a result different standard scores have been determined. According to another study (Devkota et al., 2017), a standard score of 100 and above is defined as a starting point for a positive score and it is stated that according to the literature, there is no agreement on the limit of a positive score. Another study (Cervasio & Fatata-Hall, 2013) reported that possible scores range from 90 (lower) to 180 (higher) with a score of 120 and above indicating a more positive attitude of a person towards a person with a disability, as well as the higher the score from 120 and above the more positive the attitude is considered.

In case 10% of the items have not been answered (3 proposals for the scale with 20 questions (Form O) and 4 proposals for the scale with 30 questions (Form A & Form B), then the questionnaire is considered not to be valid. In all types of questionnaires, some questions are reverse scored. It is a one-dimensional approach to the concept of disability. Regarding the reliability of the questionnaire, the reliability coefficient ranges from .71 to .83.

The authors of the scale took into account the fact that when a self-report tool is administered, it should be determined to what extent the individual's attitude towards the process of completing the answers affects the answers he presents. Because the persons, in their attempt to formulate a performance that leads to pleasant and commonly accepted answers, may eventually present "fake" answers to make an impression. The specific form of the questionnaire has been tested for the degree of fakeability of the answers and it has been found that the scale is an authentic psychometric mean of measuring the attitudes of people towards disability (Speakman & Hoffmann, 1979).

The ATDP - Form B scale was used for this research, because it is more recent than the original and has a higher degree of reliability (Fish, 1986) while it has been used in previous research (Shannon, Schoen & Tansey, 2009; Shiloh, Heruti & Berkovitz, 2011; De, 2015; Devkota et al., 2017). The scale consists of 30 questions and a 6-point Likert scale was used where individuals are asked to formulate answers, ranging from "I agree very much" to "I disagree very much" (Stewart, 1991; White & Olson, 1998; Findler, Vilchinsky & Werner, 2007). There is no neutral answer. It is suggested that most Likert scales include six grades as it contributes to increased measurement accuracy (Nemoto & Beglar, 2014). The sentence "people with disabilities" was added to the questions in the questionnaire, which were formulated in an appropriate way in order for the research terminology to be characterized by a certain degree of sensitivity (Perry, Conner & Shelar, 2008).

The second part of the questionnaire consists of questions referring to demographic variables and are defined based on previous research according to gender, year of birth, communication with a person with a disability (Yuker, 1994; Seccombe, 2007; De, 2015; Santiago, Lee & Roper, 2016 ; ) and level of education (White & Olson, 1998). The variable contact with people with disabilities was coded with the value yes / no (person with a family disability, friendly person with a disability) (Hall & Zweigenhaft, 2016).

### **C. Translation and adaptation of the questionnaire**

For the Greek sample, the translation and adaptation of the questionnaire was based on the methods of previous research (Polyzopoulou et al., 2014; Tsakiridou & Polyzopoulou, 2019).

### **D. Data collection process**

The scale (ATDP-B) was formatted in Google Form and delivered online via social networking applications and via email (Sharma, Yadav, & Sharma, 2021). Independent samples t - test was used to check for possible differences in the scale based on gender, the question "friend with special needs" and the question "relative with special needs". The One-Way ANOVA statistical test was used to check for possible differences in scale based on the age and educational level of the participants. It was followed percentiles procedure according to the editors of the ATDP-Form B psychometric instrument (Yuker et al. 1970). The editors concluded that where there should be emerged different norms for men and women, because their research resulted in

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statistical significant differences for men and women. This is interpreted as a more favorable attitude towards people with disabilities for women in relation to men. For that reason, they have calculated percentiles, that is numbers, recommended only, in order for each researcher to apply an assessment of the participants' grades and compute percentiles as norms.

### IV. RESULTS

The total score of the participants in the research (Table 2) was equal to 103.44 (Median = 104 and TA = 13.7), with a range from the lowest score 55.00 to the highest 140.00. Of the total sample, 34 (22.7%) individuals expressed a positive attitude towards disability based on the score obtained on the scale and 116 (77.3%) individuals expressed a score that is interpreted as a negative attitude. The overall reliability of the 30 questions on the scale was found to be equal to Cronbachs 'a = .73, a result that is consistent with the research of the creators of the scale (Yuker et al., 1970). In another study, in Greece, reliability was found to be equal to Cronbachs 'a = .71 (Kritsotakis et al., 2021).

Also, in the present study. the subjects of the sample scored higher with a score equal to 140. Respectively, in other surveys, the subjects of the sample scored scores ranging from the lowest score 75 to the highest score 143, also from 77 the lowest as 145 the highest and 75 and 143 respectively (Cervasio & Fatata-Hall, 2013). In another study, scores ranged from the lowest 65 to 144 highest (Abdi & Metcalf, 2020). A similar study showed the following results for the average score of 115.53 (with a lower score of 67.00 and a higher score of 162.00), 128.07 (with a lower score of 86.00 and a higher score of 161.00) and 116.17 (with 78.00 lowest and 158.00 highest) (White & Olson, 1998). Furthermore, a related research revealed a mean score of 79.92 (with minimum 43 and maximum 105) (Hall & Zweigenhaft, 2016).

Regarding the gender of the participants (Table 4), the average performance of men (M = 103.53, SD = 9.72) and the average performance of women (M = 103.41, SD = 14.84) presented no statistically significant differences (t = 0.055, df = 98.202, p > 0.05). Concerning the variable "friend with disabilities", the average of the people in the sample who have a friend with disabilities (M = 102.86, SD = 14.68) does not show a statistically significant difference from the average of people who stated that they do not have a friend with special needs (M = 104.01, SD = 12.94) (t = 0.0512, df = 147, p > 0.05). The average score of people with a disabled relative (M = 105.72, SD = 12.75) and the average score of people without a disabled relative (M = 102.27, SD = 14.13) do not appear to be statistically significant different (t = 1.413, df = 146, p > 0.05). In terms of date of birth, people born during the period 1950-1970 showed a higher score (M = 108.15, SD = 14.47), with a range from the lowest score of 87.00 to 138.00 the highest, compared to people born during the time period 1971-1990 (M = 102.5, SD = 16.74) and range from 55.00 for the lowest score to 140.00 for the highest, which showed a higher score than those born during the period 1991-2003 (M = 101.96, SD = 10.59), with a range from 76.00 or lower to 130.00 or higher, without these differences being statistically significant different based on the ANOVA analysis (F2,138 = 1.68, p > 0.05). The total average score for this variable is M = 103.03, with SD = 13.67. For all individuals in the sample, in terms of year of birth, the mean scores range from 55.00 the lowest score to 140.00 which is the highest score. The post test performed on the basis of LSD confirms the absence of differences. Also, the average performance of people with a second degree corresponds to an average (M = 109.15, SD = 12.83), with a range of 86.00, which is the lowest score and 132.00 which is the highest and is higher than the average performance of people with postgraduate studies (M = 102.7, SD = 15.10) and the average performance of the individuals in the sample with a doctorate (M = 100.27, SD = 15.42), with a lower limit of 67.00 and a higher grade of 127.00. In order to control the differences of the mean scores for the education level variable the analysis of variance was conducted that revealed no statistically significant differences (F2.85 = 2.370, p > 0.05). The total average score for this variable is M = 104.26, with SD = 14.73. For all individuals of the sample, up to the level of education, mean ranges from 55.00 the lowest score to 140.00 which is the highest score. The post control of the variables based on the LSD test did not show any additional statistically significant differences.

TABLE 2.ATDP (FORM B) – TOTAL MEAN SCORE

Participants N = 150	
Mean	103.44
Median	104.00
SD	13.7
Minimum	55.00
Maximum	140.00



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**TABLE 3. ATDP (FORM B) – PERCENTILES**

Form B	Percentiles	Scores
	99	138.98
	95	127.00
	90	120.00
	75	111.25
	50	104.00
	25	95.00
	10	86.00
N	150	

In the Table 3, calculations of the percentage position of the sample individuals revealed that 10% of the sample individuals show a score up to 86, 25% of the sample members reach a score of 95, 50% approach a score of up to 104, 75% of individuals score up to 111.25, 90% to 120, 95% to 127 and 99% to 138.98.

**TABLE 4. ATDP (FORM B) – MEANS SCORES AND STANDARD DEVIATION OF THE SAMPLE**

		Mean	SD	Minimum	Maximum
Gender	Men	103.53	9.72		
	Women	103.41	14.84		
Year of birth	1950-1970	108.15	14.47	87.00	138.00
	1971-1990	102.5	16.74	55.00	140.00
	1991-2003	101.96	10.59	76.00	130.00
Total				55.00	140.00
Level of education	Second degree	109.15	12.83	86.00	132.00
	Master degree	102.7	15.10	55.00	140.00
	PhD	100.27	15.42	67.00	127.00
Total				55.00	140.00
Friend with a disability	Yes	102.86	14.68		
	No	104.01	12.94		
Family or family person with a disability	Yes	105.72	12.75		
	No	102.27	14.13		

## V. DISCUSSION

Research participants showed a positive attitude towards people with disabilities, which is confirmed by the research of Devkota et al. (2017), but seems to present a weaker picture according to the creators of the scale (Yuker et al., 1970). In surveys conducted in Greece (Matziou et al., 2009; Kritsotakis et al., 2017), the participants showed a lower average score, compared to that of the individuals in the present study, which corresponded to a negative attitude. This finding shows that in Greece, the attitude of people towards people with disabilities presents an improving picture and a positive trend towards these people appears. However, the emotional state seems to be restrained, which indicates that prejudices and stereotypes about disability remain entrenched behaviors that are difficult to break down, while lack of knowledge and information frames the individual's reactions to people with disabilities. The finding that fewer people in the sample expressed a positive attitude confirms the effect that prejudices and stereotypes have on the general population. The participants also expressed a positive attitude in similar surveys. (Gosse & Sheppard, 1979; Abdi & Metcalf, 2020).

According to the scores in proportion to the percentage, it is showed the increasing tendency of the individuals in the sample to express a positive attitude towards their compatriots with disability, a finding that is an encouraging factor for the social acceptance and integration of people with disabilities into society.

Also important is the finding that the attitudes of men and women in research do not differ significantly (Santiago, Lee & Roper, 2016), a finding that is in line with a small amount of researches conducted by Yuker et al. (1970) and show a positive trend. Previous researches showed undetermined results to gender differences (Matziou et al., 2007). In the sample, there is no balanced representation of the two genders, which seems to affect the absence of effect of the variable (White & Olson, 1998; Seccombe, 2006; Grames & Leverentz, 2010). Conducting a similar research with a larger sample of men participants could probably alternate the results to a significant level (Hall & Zweigenhaft, 2016). Another study (Radlińska, Kozybska, & Karakiewicz, 2021) resulted that women possess more positive attitudes towards people with disabilities in comparison to men,

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in the cognitive and behavioral area, but in the emotional area women and men expressed similar attitudes practically. Emotions experienced by people and expressed towards people with disabilities are usually generalized in content but they are also related to situations of discomfort and anxiousness (Findler, Vilchinsky & Werner, 2007).

Also, it seems that a friendly relationship and communication with a person with disabilities does not affect the attitudes of people with disabilities, although people with a friendly relationship to a person with a disability express a slightly more positive trend. It seems that communication with a person with disabilities is not essential and it is possible to lack real experience. Socializing with a person who influences in a significant way due the role he possesses, suggests more positive directions (Shannon, Schoen & Tansey, 2009, Wang et al ., 2021). However, other research confirms the positive effect of communication with a person with a disability (Gosse & Sheppard, 1979). A similar finding emerges for the kind of friendship relationship with a person with a disability, where the attitudes of individuals are not significantly different, except that there is a slight variation in the attitude, in a positive direction, of individuals with a relative in the environment, that is in agreement with another study (Hall & Zweigenhaft, 2016). It is expected that the daily interaction with a person with a disability will form a positive attitude towards the disability, but this frequent interaction will lead to the emergence of stressors that affect the person's life, increased responsibilities or other situations that may affect the attitude (Perry et al., 2008). Overall, regarding the variable of communication with a person with disabilities, a assiduous control of the variable in terms of contact quality is required, otherwise the correlation ends up being negative (Wang et al., 2021). The year of birth did not appear to function differently (White & Olson, 1998), except that older individuals showed a more positive attitude towards people with disabilities. Conclusions about the relationship between disability and age attitudes are contradictory (Yuker, Block & Young, 1970). It seems that at older ages, people experience the feeling of generosity and at a later age they go through a period of reflection and flashback to the past and want to experience a sense of fullness and satisfaction from life (Dunkel & Harbke, 2017). Still, as the elderly are characterized by a strong concern for the end of life, this fact seems to justify the most favorable feelings towards disability (Fish, 1986). The desire of middle-aged and young people to experience feelings of fullness from life leads to feelings and behaviors that create the conditions for acceptance and supportive attitude towards people with disabilities, so that older people themselves feel integrated into society. through the actions they undertake. On the other hand, middle-aged people seem to be involved in many responsibilities of life, while young people are going through a period where they should be oriented towards professional and social goals, so that the attitudes they develop towards people with disabilities indicate a marginally positive mood. . These different age characteristics, personality traits and priorities of individuals are likely to justify the non-differentiating effect of age as a variable in the attitudes developed by adults. Still, the level of education did not have a significant effect on the attitudes of individuals, a finding that agrees with another study (White & Olson, 1998), where few individuals responded to the educational level, although the literature suggests that the educational level should lead to differentiation of attitudes. However, it was observed that people with a second degree develop a more positive attitude compared to people with a master's or doctorate. Once the basic studies are completed, there is little evidence on the relationship between attitudes towards people with disabilities and the educational level of adults (Yuker, Block & Young, 1970).

## **VI. CONCLUSIONS**

All people need to be aware of what it means to live with a disability, and how, by experiencing such a situation, one can achieve mental health and quality of life (Garland-Thomson, 2017). Research on the attitude domain has contributed to the production of many attitude scales (Findler, Vilchinsky & Werner, 2007). A psychometric tool like this can be used in comparative studies to explore differences and similarities that govern the attitudes of people with disabilities and people without disabilities, but also the degree of negative stereotypes towards people with disabilities (Yuker, Block, & Young, 1970). It is a scale that contributes to the manifestation of acceptance or rejection of people with disabilities (Lazar & Ernandes, 1972) and it is an appropriate one to measure attitudes towards persons with disabilities.

## **VII. IMPLICATIONS FOR FURTHER RESEARCH**

Studies related to attitudes towards disability showed that they contain a negative character (Grames & Leverentz, 2010). Contact with a person with a disability is an important factor in shaping attitudes and requires a special approach and study of this variable. It is proposed to interpret and manage this variable using qualitative study methods that facilitate the application of quantitative research methods and to determine how and to what extent the interaction with people with disabilities affects the attitudes of people with disabilities (Shannon , Schoen & Tansey, 2009). While each psychometric instrument for measuring attitudes toward disability measures different dimensions of attitudes, comparing the results of research using the ATDP scale and different scales will contribute to a comprehensive understanding of the concepts that scales measure (Yuker, Block & Young, 1970). The fact that bioethics has retroactively "discovered" disability should not discourage bioethicists from

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participating in and enhancing dialogue in this important area (Kuczewski, 2001). And this is because, for the legislative regulations and the legal approach to the issues, the philosophical assessment of the social problems should precede. It is of great importance to consider issues of normativity in disability studies, such as relationship between theories of ethics and empirical data, investigating normativity in a practical environment and study normative ethical questions (Van Der Weele, 2022). Lifelong learning educational activities are also suggested in order to limit stereotypes and prejudices and specialized education seminars comprising theory and practice (Tervo, 2004). These programs can aim to the study of the attitudes people with disabilities possess, including a direct communication with people with disabilities who have obtained their goals in life contributes to a favorable formation of attitudes towards them (Hall & Zweigenhaft, 2016). It is of great importance to study health professionals' attitudes towards people with disabilities because when they express negative attitudes and lack of sensitivity the situation is getting aggravated (Matziou et al., 2009).

### VIII. LIMITATIONS OF THE RESEARCH

This research is a descriptive study of individuals' attitudes towards disability (De, 2015). This means that although this psychometric tool has been tested for reliability and validity (White & Olson, 1998) it should be determined, by conducting research, whether the results can be generalized to respective populations and whether the attitudes expressed remain the same, through observation and exchange of views.

### REFERENCES

- 1) Abdi, R., & Metcalf, E. (2020). Exploring attitudes of medical students towards intellectual disabilities. *Advances in Mental Health and Intellectual Disabilities*, 14(5), 125-136.
- 2) Arsić, B., Todorov, S., Gajić, A., Bašić, A., Macešić-Petrović, D., Parezanović, R. Z., Nikoliz, J. (2021). The attitudes of students of humanities toward people with disability and inclusive education. *Research in Education and Rehabilitation*, 4(1), 53-67
- 3) Cervasio, K., & Fatata-Hall, K. (2013). Attitudes of nurses toward children with disabilities: the attitudes of nursing students toward children with disabilities: an experimental design. *Int J Phys Med Rehabil*, 1(5), 1-15.
- 4) De, M. (2015). Assessing Attitudes of Undergraduate College Students Towards Differently Abled Students. *The Beats of Natural Sciences*, 4(2), 1-7.
- 5) Devkota, H. R., Murray, E., Kett, M., & Groce, N. (2017). Healthcare provider's attitude towards disability and experience of women with disabilities in the use of maternal healthcare service in rural Nepal. *Reproductive health*, 14(1), 1-14.
- 6) Dunkel, C. S., & Harbke, C. (2017). A review of measures of Erikson's stages of psychosocial development: Evidence for a general factor. *Journal of Adult Development*, 24(1), 58-76.
- 7) Findler, L., Vilchinsky, N., & Werner, S. (2007). The multidimensional attitudes scale toward persons with disabilities (MAS) construction and validation. *Rehabilitation Counseling Bulletin*, 50(3), 166-176.
- 8) Fish, D. E. (1986). Disabled persons and death anxiety in counselor trainees. *Journal of Rehabilitation*, 52(1), 53-55.
- 9) Furnham, A., & Pendred, J. (1983). Attitudes towards the mentally and physically disabled. *British Journal of Medical Psychology*, 56(2), 179-187.
- 10) Garland-Thomson, R. (2017). Disability bioethics: From theory to practice. *Kennedy Institute of Ethics Journal*, 27(2), 323-339.
- 11) Gosse, V. F., & Sheppard, G. (1979). Attitudes Toward the Physically Disabled Persons: Do
- 12) Education and Personal Contact Make a Difference?. *Canadian Journal of Counselling and Psychotherapy*, 13(3), 131-135.
- 13) Games, M., & Leverentz, C. (2010). Attitudes toward persons with disabilities: A comparison of Chinese and American students. *UW-L Journal of Undergraduate Research*, 13, 1-6.
- 14) Gritti, P. (2017). The bio-psycho-social model forty years later: a critical review. *Journal of Psychosocial Systems*, 1(1), 36-41.
- 15) Hall, J., & Zweigenhaft, R. (2016). Changing attitudes about employing the disabled: What works and why. *Modern Psychological Studies*, 21(2), 9, 68-74.
- 16) Kuczewski, M. G. (2001). Disability: An agenda for bioethics. *American Journal of Bioethics*, 1(3), 36-44.
- 17) Kritsotakis, G., Galanis, P., Papastefanakis, E., Meidani, F., Philalithis, A. E., Kalokairinou, A., & Sourtzi, P. (2017). Attitudes towards people with physical or intellectual disabilities among nursing, social work and medical students. *Journal of Clinical Nursing*, 26(23-24), 4951-4963.

## Adult's Attitudes towards Disability in the Greek Community

- 18) Smith, B. J., Tang, K. C., & Nutbeam, D. (2006). WHO health promotion glossary: new terms. *Health promotion international*, 21(4), 340-345.
- 19) Matziou, V., Galanis, P., Tsoumakas, C., Gymnopoulou, E., Perdikaris, P., & Brokalaki, H. (2009). Attitudes of nurse professionals and nursing students towards children with disabilities. Do nurses really overcome children's physical and mental handicaps? *International nursing review*, 56(4), 456-460.
- 20) Newell, C. (2006). Disability, bioethics, and rejected knowledge. *The Journal of medicine and philosophy*, 31(3), 269-283.
- 21) Nemoto, T., & Beglar, D. (2014). Likert-scale questionnaires. In *JALT 2013 conference proceedings* (pp. 1-8). Tokyo: Jalt.
- 22) Patrick, G. D. (1987). Improving attitudes toward disabled persons. *Adapted Physical Activity Quarterly*, 4(4), 316-325.
- 23) Perry, D. C., & Apostol, R. A. (1986). Modifying attitudes of business leaders toward disabled persons. *Journal of Rehabilitation*, 52(4), 35.
- 24) Perry, T. L., Ivy, M., Conner, A., & Shelar, D. (2008). Recreation student attitudes towards persons with disabilities: considerations for future service delivery. *Journal of Hospitality, Leisure, Sports and Tourism Education (Pre-2012)*, 7(2), 4-14.
- 25) Polyzopoulou, K., Kokaridas, D., Patsiaouras, A., & Gari, A. (2014). Teacher's perceptions toward education of gifted children in Greek educational settings. *Journal of Physical Education and Sports*, 14 (2), 211-221. DOI: 10.7752/jpes.2014.02033
- 26) Radlińska, I., Kozybska, M., & Karakiewicz, B. (2021). Attitudes of Polish Medical and Health Sciences Students towards Persons with Physical Disabilities Using the MAS-PL Scale. *International Journal of Environmental Research and Public Health*, 18(15), 1-13.
- 27) Santiago, J. A., Lee, J., & Roper, E. A. (2016). Effects of service-learning on kinesiology students' attitudes toward children with disabilities. *Journal of Higher Education Outreach and Engagement*, 20(2), 109-126.
- 28) Seccombe, J. A. (2007). Attitudes towards disability in an undergraduate nursing curriculum: The effects of a curriculum change. *Nurse Education Today*, 27(5), 445-451.
- 29) Shannon, C. D., Schoen, B., & Tansey, T. N. (2009). The effect of contact, context, and social power on undergraduate attitudes toward persons with disabilities. *Journal of rehabilitation*, 75(4), 11-18.
- 30) Sharma, N., Yadav, V. P., & Sharma, A. (2021). Attitudes and empathy of youth towards physically disabled persons. *Heliyon*, 7(8), e07852.
- 31) Shiloh, S., Heruti, I., & Berkovitz, T. (2011). Attitudes toward people with disabilities caused by illness or injury: beyond physical impairment. *International Journal of Rehabilitation Research*, 34(4), 321-329.
- 32) Sivrikaya, Ö., & Kardaş, S. B. (2021). Comparison of the effects of physical education and sports course for the handicapped on the attitudes of sports science students towards the handicapped. *African Educational Research Journal*, 9(4), 877-883,
- 33) Speakman, H. G., & Hoffmann, C. M. (1979). The "fakeability" of the attitudes toward disabled persons scale: Form B. *Physical Therapy*, 59(7), 866-868.
- 34) Tarlo, R., Fyson, R., & Roberts, S. (2022). Ambivalence about disability: Why people with mild learning difficulties who are looking for employment may not identify as disabled. *Disability & Society*, 1-23.
- 35) Tervo, R. C., & Palmer, G. (2004). Health professional student attitudes towards people with disability. *Clinical rehabilitation*, 18(8), 908-915.
- 36) Tsakiridou, H., & Polyzopoulou, K. (2019). Inclusion in the Greek Secondary School: Students' Attitudes Concerning Their Peers With Special Educational Needs in the General Education. *Journal of Psychology*, 7(1), 84-97.
- 37) Yuker, H. E. (1994). Variables that influence attitudes toward persons with disabilities: Conclusions from the data. *Journal of Social Behavior and Personality*, 9(5), 3.
- 38) Yuker, H. E., Block, J., & Young, J. (1970). *The measurement of attitudes toward disabled persons*. New York: Ina Mend Institute At Human Resources Center.
- 39) Van Der Weele, S. (2022). 'Doing' normativity in disability studies: soft suggestions towards an empirical ethics of disability. *Disability & Society*, 1-23.
- 40) Wang, Z., Xu, X., Han, Q., Chen, Y., Jiang, J., & Ni, G. X. (2021). Factors associated with public attitudes towards persons with disabilities: a systematic review. *BMC Public Health*, 21(1), 1-15.
- 41) Wilczenski, F. L. (1991). Use of the "Attitudes Toward Mainstreaming Scale" with Undergraduate Education Students. Paper presented at the *Annual meeting of the New England Educational Research Organization*, April 1991, Portsmouth, NH. (ERIC Document Reproduction Service No. ED 332992).

## Adult's Attitudes towards Disability in the Greek Community

- 42) White, M. J., & Olson, R. S. (1998). Attitudes toward people with disabilities: A comparison of rehabilitation nurses, occupational therapists, and physical therapists. *Rehabilitation Nursing*, 23(3), 126-131.



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## Prediction of Drug-Induced Tdp Risks Using Machine Learning and Rabbit Ventricular Wedge Assay



Jaela Foster-Burns<sup>1</sup>, Nan Miles Xi<sup>2</sup>

<sup>1</sup>Department of Biology, Loyola University Chicago, Chicago, IL 60660, USA

<sup>2</sup> Department of Mathematics and Statistics, Loyola University Chicago, Chicago, IL 60660, USA

**ABSTRACT:** Torsades de pointes (TdP) is an irregular heart rhythm as a side effect of drugs and may cause sudden cardiac death. A machine learning model that can accurately identify drug TdP risk is necessary. This study uses multinomial logistic regression models to predict three-class drug TdP risks based on datasets generated from rabbit ventricular wedge assay experiments. The training-test split and five-fold cross-validation provide unbiased measurements for prediction accuracy. We utilize bootstrap to construct a 95% confidence interval for prediction accuracy. The model interpretation is further demonstrated by permutation predictor importance. Our study offers an interpretable modeling method suitable for drug TdP risk prediction. Our method can be easily generalized to broader applications of drug side effect assessment.

**KEYWORDS:** torsades de pointes; drug safety assessment; machine learning; multinomial logistic regression

### INTRODUCTION

Torsades de Pointes (TdP) is a fatal polymorphic ventricular tachycardia. It is distinguished by the elevated beating of the heart's lower chambers (ventricles) and QT prolongation<sup>1,2</sup>. The risk of TdP may be signified on an electrocardiogram through a display of oscillatory changes in amplitude of the QRS complexes around the isoelectric line. Experimental studies and literature indicate that pharmaceutical drugs known to treat cardiomyopathies (heart disease) fall into different risk levels of inducing TdP<sup>3</sup>. In 2005 The International Committee/Council for Harmonisation (ICH) established international regulatory guidelines, ICH S7B and ICH E14, for the pharmaceutical industry to analyze drug TdP risk<sup>4</sup>. Subsequently, in 2013 the US Food and Drug Administration (FDA) proposed the Comprehensive In Vitro Proarrhythmic Assay (CiPA) initiative for improved drug-induced TdP risk prediction<sup>5</sup>. A cumulation of these guidelines in combination with *in vitro* (in the test tube, not in the organism) protocols has been utilized to determine drug TdP risk within preclinical and clinical studies. These protocols use multielectrode array or voltage-sensing optical approaches, combined with logistical ordinal and multinomial linear regression models, to analyze electrophysiologic responses to drugs commonly linked to low, medium, or high TdP risk categories<sup>2,3</sup>.

The goals of this study surround the usage of data generated from *in vitro* preclinical studies to predict drug TdP risk, along with the examination of variables contributing to drug TdP risk. This study further examines the uncertainty of TdP drug risk prediction and identifies important variables in the prediction. To achieve these goals, a multinomial logistic regression model, training-test split, cross-validation, and permutation predictor importance are used in this study. The drug TdP risk prediction is a three-classification problem that can be modeled with multinomial random variables. The data for the model was acquired from the literature on a rabbit ventricular wedge experiment<sup>6</sup>.

The main result of this study indicates the risk classifications of 28 drugs known to induce TdP. The risk classifications are determined by *in vitro* preclinical studies and are mainly supported by ECG readings. The model places any drug into a low-, medium-, or high-risk category and reports on the accuracy of the risk prediction while giving prediction uncertainty and a 95% confidence interval. The significance of this study is that a model is trained to predict unknown data with extremely high accuracy while stating the most important predictor. This study also outlines tools to improve accuracy (cross-validation and bootstrap) or better the model.

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## DATASETS

This study utilizes data pulled from the literature on the utility of a normalized TdP score system in drug proarrhythmic potential<sup>6</sup>. The data in this literature originates from experimentation done on rabbit ventricular wedge assays (RVWAs). The experimentation consists of electrophysiological recordings conducted on surgically prepared rabbit left ventricular wedges and is further detailed in supported literature<sup>7</sup>. From experimentation, a transmural-pseudo-electrocardiogram (ECG) is recorded, allowing for the calculation of TdP scores for each drug and the development of TdP risk categories – low, medium, or high risk of TdP. This study uses the findings from the electrocardiogram recordings to generate 15 variables to build the model introduced (Table 1). Four replicates on each of the 28 drugs tested with RVWAs produce 112 observations in total for the model to be built upon (Table 2).

## METHODS

The model in this study is a multinomial logistic regression model<sup>8</sup>. It classifies any drug into one out of three risk categories. The three classifications are represented in a response variable  $Y$  and denoted by the letters  $L$ ,  $M$ , and  $H$ . The  $L$  denotes low risk of TdP, the  $M$  denotes medium risk of TdP, and the  $H$  denotes high risk of TdP. The response variable  $Y$  is dependent upon  $p$  predictors:  $X_1, X_2, \dots, X_p$ , used to model probability. In the multinomial logistic regression model, it is assumed that  $Y$  is a multinomial random variable, as shown in equation (1)

$$Y \sim \begin{cases} P(Y = L) = p_L \\ P(Y = M) = p_M \\ P(Y = H) = p_H = 1 - p_L - p_M \end{cases} \quad (1)$$

The probability of TdP risk can be modeled by following equations (2), (3), and (4)

$$p_L = P(Y = L) = \frac{e^{(\beta_{01} + \beta_{11}X_1 + \dots + \beta_{p1}X_p)}}{e^{(\beta_{01} + \beta_{11}X_1 + \dots + \beta_{p1}X_p)} + e^{(\beta_{02} + \beta_{12}X_1 + \dots + \beta_{p2}X_p)} + e^{(\beta_{03} + \beta_{13}X_1 + \dots + \beta_{p3}X_p)}} \quad (2)$$

$$p_M = P(Y = M) = \frac{e^{(\beta_{02} + \beta_{12}X_1 + \dots + \beta_{p2}X_p)}}{e^{(\beta_{01} + \beta_{11}X_1 + \dots + \beta_{p1}X_p)} + e^{(\beta_{02} + \beta_{12}X_1 + \dots + \beta_{p2}X_p)} + e^{(\beta_{03} + \beta_{13}X_1 + \dots + \beta_{p3}X_p)}} \quad (3)$$

$$p_H = P(Y = H) = 1 - p_L - p_M \quad (4)$$

where  $\beta$ s are model parameters. With  $p_L, p_M, p_H$ , the final three-class model output is obtained by (5)

$$Y = \begin{cases} L & \text{if } p_L = \max(p_L, p_M, p_H) \\ M & \text{if } p_M = \max(p_L, p_M, p_H) \\ H & \text{if } p_H = \max(p_L, p_M, p_H) \end{cases} \quad (5)$$

The maximum likelihood estimation is used to obtain the model parameters, in which the model parameters maximize the probability of observing data<sup>9</sup>. This produces TdP risk predictions for each observation according to a three-class system (low, medium, or high risk of TdP). The model gives prediction accuracy following the risk prediction. A straightforward accuracy measurement is the proportion of correct predictions (correct rate, from 0 to 1) indicated by (6)

$$\text{Prediction accuracy} = \frac{\sum_{i=1}^n I(y_i = \hat{y}_i)}{n} \quad (6)$$

where  $n$  is the data size,  $y_i$  and  $\hat{y}_i$  are true and model risk, respectively. The  $I()$  function is the identify function defined in (7)

$$I(X) = \begin{cases} 1 & \text{if } X = \text{True} \\ 0 & \text{if } X = \text{False} \end{cases} \quad (7)$$

In this study, the primary objective is to build a model that can make predictions on data it has never seen before. To objectively measure the model's prediction accuracy, the data is randomly split into a training set and a test set in a training-test split. The model is trained on the training set of data (80%) and makes predictions on the response variable in the test set (20%) (Figure 1). The training-test split allows the model training and prediction to be performed on two different sets. The accuracy calculated on the test set is an unbiased estimation of model prediction accuracy.

Although the accuracy estimation is objective on the test set, it contains two prominent drawbacks. First, the split is fixed, excluding randomness. Second, the test data is wasted in model training due to the reduction of effective sample size. This study uses cross-validation to solve these two problems. Cross-validation randomly splits the data into  $K$  equal-sized parts, trains the model on parts  $K - 1$ , and forces the model to predict the remainder (test part) of the data. This allows for repetition within the model or for every part of data to be treated as the test set. The final model prediction accuracy is obtained by averaging the accuracy of each part (Figure 2). We set  $K$  to 5, train the model on four equally sized groups, and predict one left-out group. We use the R programming language and RStudio integrated development environment (IDE) to implement computations in this study<sup>10,11</sup>.

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## RESULTS

The model provides a three-class prediction for each observation and total prediction accuracy. A model without any predictive power will randomly assign one of three classes, suggesting a 33% chance of correct class prediction. The model produced in this study increases prediction accuracy over the 33% baseline, shown by both training-test splits and cross-validation. The model prediction accuracy is 74% when evaluated by the training-test split. The model prediction accuracy is 80% when evaluated by the five-fold cross-validation. The 80% prediction accuracy generated suggests the model correctly predicted the TdP risk for 89 out of 112 observations, which indicates that the prediction accuracy is significantly increased by the model produced.

From the statistical perspective, the previous prediction result is a random variable. Its randomness originates from our data being a random sample from an unknown population (Figure 3). This randomness may never be eliminated because the population is not given. We need to obtain the prediction accuracy distribution to reveal the prediction uncertainty. To achieve this goal, we utilize the bootstrap resampling<sup>12</sup> to treat the current dataset as a population and sample with replacement from the dataset to imitate new samples. Each new bootstrap sample has the same sample size as the original data. Bootstrap provides a route to circumvent collecting different datasets by imitating the production of new samples from a population. For each training-test split in the cross-validation, there is a resample with replacement on the training set to generate a bootstrap training set. Then we predict the test set by the model trained on the bootstrap training set and save the prediction accuracy. We repeat this resampling process 1000 times and construct an empirical distribution for prediction accuracy across all test sets (Figure 4). The 95% confidence interval of prediction accuracy is (77%, 94%), which provides a range of values that contain the true prediction with up to a 95% probability. The range of this confidence interval is far greater than a 33% random guess.

The predictions obtained from the model are further dependent on individual predictors (variables). Permutation predictor importance tells which predictor contributes most to the complete prediction results<sup>13</sup>. We first train the model  $m$  on dataset  $D$  to obtain the prediction accuracy  $acc$ . Then each predictor  $j$  is randomly shuffled in the test set (left-out drug). The model  $m$  is applied on shuffled dataset  $D_s$  and we calculate its prediction accuracy. The importance of predictor  $j$  is calculated as the decrease of the prediction accuracy due to the random shuffling, as shown in Figure 5. Table 3 summarizes the top 5 most important variables. We normalize Table 3 by dividing the permutation predictor importance of the most important variable – ratio of the QTE interval. The other four most important variables are interval between the J point and the peak of T wave, interval between Q point and the end of T wave, interval between the J point and the peak of T wave, and ratio of TPE interval to QT interval.

## CONCLUSION

This study's results indicate that the model successfully uses data from *in vitro* preclinical studies to predict drug TdP risk. We train multinomial logistic regression on the isolated arterially perfused rabbit ventricular wedge preparation dataset. The variables found to be most influential by established literature are used in this study to generate a model to predict possible drug risk. Then an unbiased estimate of model performance is measured by training-test split and cross-validation. We also use bootstrap to calculate the model prediction uncertainty by reporting a 95% accuracy confidence interval. Finally, we compute the permutation predictor importance and interpret the model prediction. This study takes an exhaustive examination of drug TdP risk prediction; however, further analysis may be pursued. Potential future direction may include an in-depth review of important predictors. New *in vitro* preclinical studies may produce results different from ones previously generated with great regard to permutation predictor importance results. Understanding drug TdP risk with elevated prediction certainty may prove useful for drug regulation and further pharmaceutical research.

## ACKNOWLEDGEMENT

The authors would like to thank Dr. Gan-Xin Yan for his permission to use the wedge data from his lab.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

## TABLES AND FIGURES

Table 1. Definition of variables in the dataset.

Variable
TdP score proposed in the original study <sup>6</sup>



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Interval between the J point and the start of T wave (JT)
Interval between the J point and the peak of T wave (JTP)
Ratio of the JTP interval at concentration $\geq 0$ to concentration = 0
QS interval, measured at pace rate 2000
QS interval, measured at pace rate 500
Ratio of the QS interval at concentration $\geq 0$ to concentration = 0, measured at pace rate 500
Interval between Q point and the end of T wave (QTE)
Ratio of the QTE interval at concentration $\geq 0$ to concentration = 0
Ratio of QT interval to QS interval
Ratio of the interval between the peak and the end of T wave (TPE) to QT interval
Ratio of TPE interval <sup>14</sup> to QT interval
TPE Interval
Ratio of TPE interval at concentration $\geq 0$ to concentration = 0
Score as a function of EAD <sup>6</sup>

**Table 2. Drug list and associated risk.**

High TdP Risk (8)	Intermediate TdP Risk (11)	Low TdP Risk (9)
Azimilide, Bepridil Disopyramide, Dofetilide Ibutilide, Quinidine Sotalol, Vandetanib	Astemizole, Chlorpromazine Cisapride, Clarithromycin Clozapine, Domperidone, Droperidol, Ondansetron, Pimozide, Risperidone, Terfenadine	Diltiazem, Loratadine Ranolazine, Metoprolol Mexiletine, Nifedipine Nitrendpine, Tamoxifen Verapamil

**Table 3. The five variables with highest permutation predictor importance.**

Variable	Permutation predictor importance (normalized)
Ratio of the QTE interval at concentration $\geq 0$ to concentration = 0	1.00
Interval between the J point and the peak of T wave (JTP)	0.81
Interval between Q point and the end of T wave (QTE)	0.72
Interval between the J point and the start of T wave (JT)	0.63
Ratio of TPE interval to QT interval	0.63

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Figure 1. The measure of prediction accuracy by a training-test split.

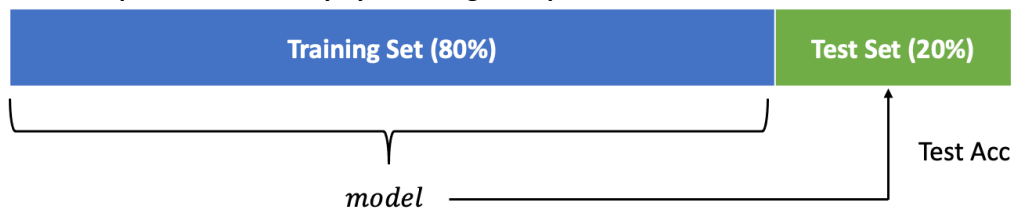


Figure 2. The measure of prediction accuracy (error) by 5-fold cross-validation.

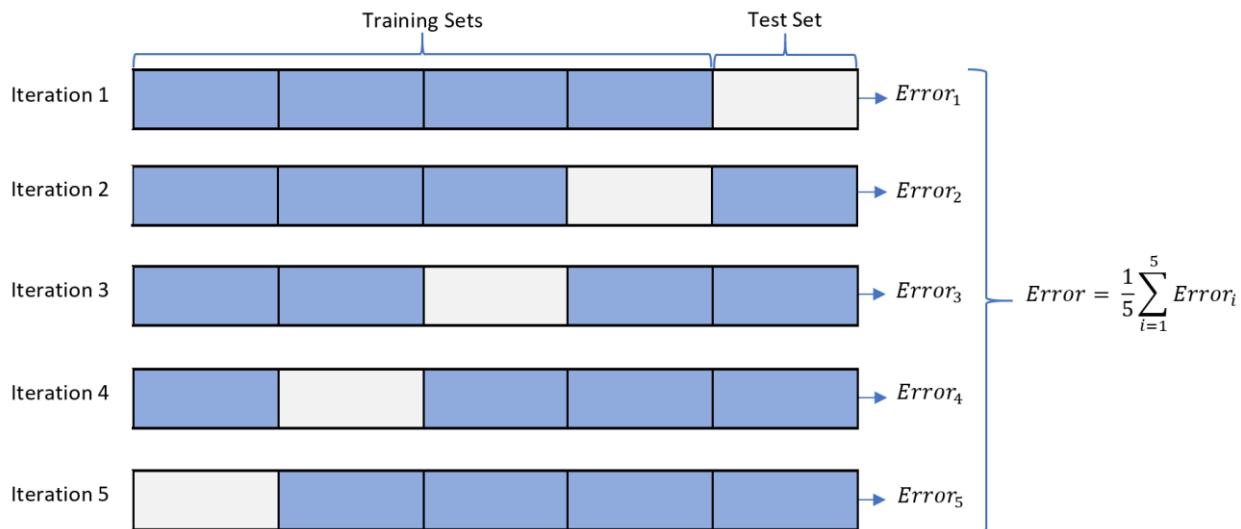


Figure 3. The demonstration of prediction randomness originating from a random sample.

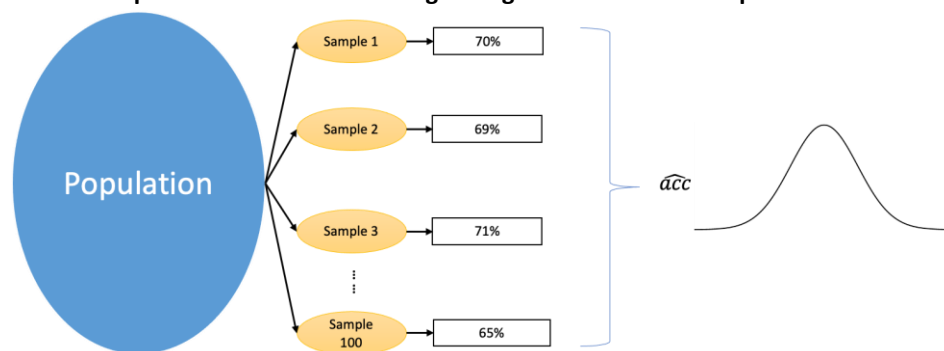


Figure 4. The empirical distribution of bootstrap prediction accuracy.

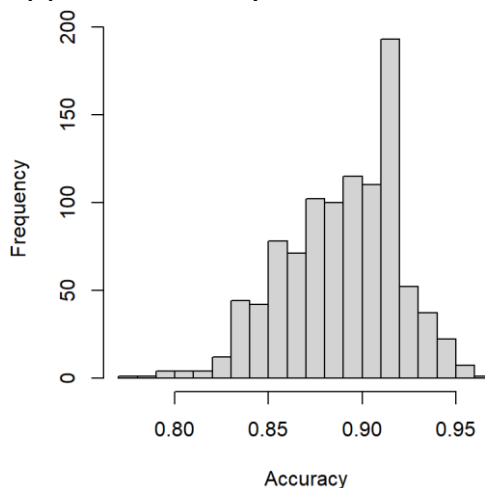
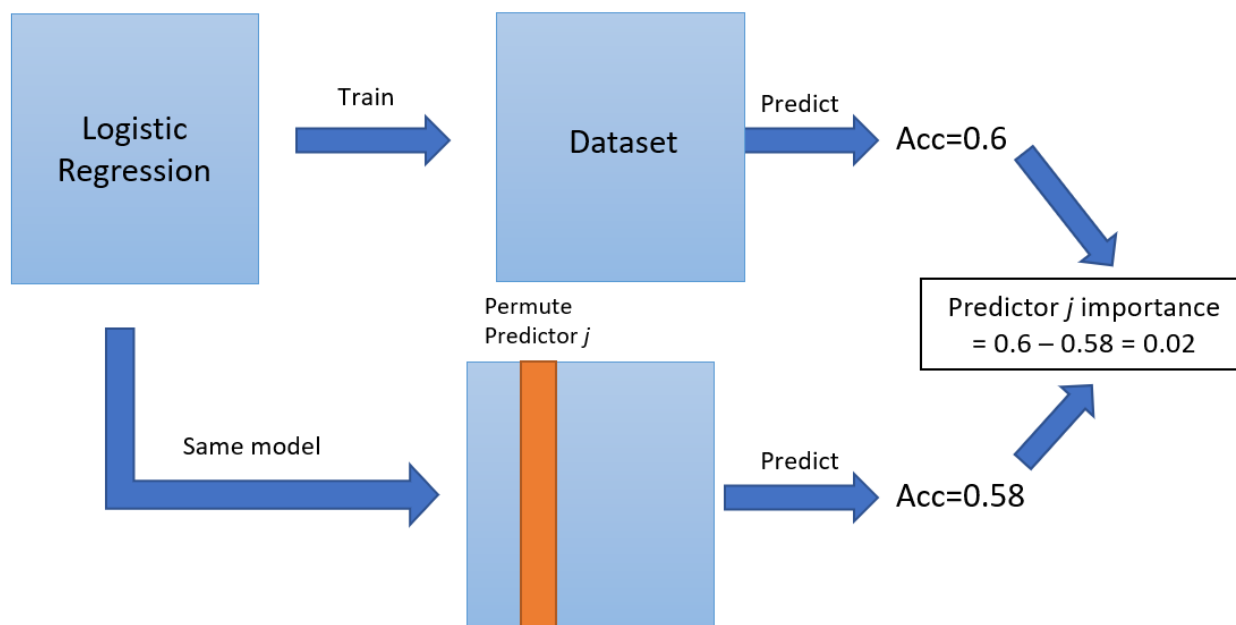


Figure 5. The calculation of permutation predictor importance.



## REFERENCES

- 1) Roden, D. M. Drug-Induced Prolongation of the QT Interval. *N. Engl. J. Med.* **350**, 1013–1022 (2004).
- 2) Xi, N. M., Hsu, Y.-Y., Dang, Q. & Huang, D. P. Statistical learning in preclinical drug proarrhythmic assessment. *J. Biopharm. Stat.* **32**, 450–473 (2022).
- 3) Blinova, K. *et al.* International multisite study of human-induced pluripotent stem cell-derived cardiomyocytes for drug proarrhythmic potential assessment. *Cell Rep.* **24**, 3582–3592 (2018).
- 4) Cavero, I. & Crumb, W. ICH S7B draft guideline on the non-clinical strategy for testing delayed cardiac repolarisation risk of drugs: a critical analysis. *Expert Opin. Drug Saf.* **4**, 509–530 (2005).
- 5) Colatsky, T. *et al.* The Comprehensive in Vitro Proarrhythmia Assay (CiPA) initiative - Update on progress. *J. Pharmacol. Toxicol. Methods* **81**, 15–20 (2016).
- 6) Liu, T. *et al.* Utility of Normalized TdP Score System in drug proarrhythmic potential assessment: A blinded in vitro study of CiPA drugs. *Clin. Pharmacol. Ther.* **109**, 1606–1617 (2021).
- 7) Joshi, A., Dimino, T., Vohra, Y., Cui, C. & Yan, G.-X. Preclinical strategies to assess QT liability and torsadogenic potential of new drugs: the role of experimental models. *J. Electrocardiol.* **37 Suppl**, 7–14 (2004).
- 8) James, G., Witten, D., Hastie, T. & Tibshirani, R. *An introduction to statistical learning.* (Springer, 2021).
- 9) *The elements of statistical learning: Data mining, inference, and prediction, second edition.* (Springer, 2009).
- 10) Core Team, R. & Others. R: a language and environment for statistical computing. *R Foundation for statistical computing, Vienna* (2013).
- 11) RStudio Team (2015) RStudio Integrated Development for R. <https://www.scirp.org › reference › ReferencesPapers><https://www.scirp.org › reference › ReferencesPapers>.
- 12) Efron, B. Bootstrap Methods: Another Look at the Jackknife. *aos* **7**, 1–26 (1979).
- 13) Breiman, L. Random Forests. *Mach. Learn.* **45**, 5–32 (2001).
- 14) Christophe, B. In silico study of transmural dispersion of repolarization in non-failing human ventricular myocytes: Contribution to cardiac safety pharmacology. *Br. J. Pharm. Res.* **7**, 88–101 (2015).



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## The Availability and Adequacy, and Level of Importance of the Facilities and Services Offered by Hotel Fragaria: An Input for Partnership Program



Rosario, Florida S.<sup>1</sup>, Bawang, Amelia G.<sup>2</sup>, Qunitos, Rochelle B.<sup>3</sup>, Flores, Rodeliza A.<sup>4</sup>

<sup>1</sup>Lyceum of the Philippines University, Manila

<sup>2,3,4</sup>Benguet State University, La Trinidad, Benguet

**ABSTRACT:** This study was conducted to examine, evaluate and standardize the facilities and service quality of Hotel Fragaria based on its accommodation classification to provide an avenue for the researchers to create a project proposal for an extension service and will be proposed as a related learning venue for Bachelor of Hospitality Management students' outcomes-based education program as an actual learning experience. The researchers employed both descriptive and inferential statistics in utilization in the analyses of the data. The descriptive part includes the computation of the mean to describe the level of availability and adequacy as well as the level of importance of the services and facilities of the five areas of Hotel Fragaria. The researchers made use of structured questionnaire based on the Department of Tourism National Accommodation Standards in data gathering for the in-house guests' respondents and convenience sampling was used in the data collection. The results of the study shows that "public areas" were rated the highest-level while "food and beverages" the lowest. However, regardless the observed differences, the ratings for all the listed facilities are descriptively interpreted as "available and adequate". In terms of the level of importance, all facilities are deemed "extremely important". The correlation between the level of availability and adequacy, and level of importance of such facilities and services. It can be observed that the correlation coefficient is significantly different from zero only for the case of the facilities "guestrooms" and "food and beverages." Specifically, the level of availability and adequacy is positively but weakly related to the level of importance under "guestrooms" and "food and beverages."

**KEYWORDS:** Level of Importance, Guest Satisfaction, Availability and Adequacy, Hotel Services, Hotel Facilities

### I. INTRODUCTION

The United Nation World Tourism Organization (2013) stated that the matter of the classification of tourism accommodations is particularly difficult for at least two reasons: First, due to the large diversity of types of tourism accommodations, a diversity that is constantly increasing; and second, due to the large diversity of classification systems that are themselves embedded in highly different cultural and economic context.

In addition, hotel classification systems are widely used in the accommodation sector as a means of providing an indicator to both consumers and intermediaries on the standards to be found at individual establishments. This is particularly important in a sector where the product (i.e. the accommodation) is bought / listed sight-unseen (i.e. consumers/intermediaries are not able to see or test the product offering before the purchase / listing is made). Moreover, hotel classifications can provide useful marketing platforms for individual hotels and for destinations wishing to promote the quality of their offer.

Nevertheless, establishing a classification system for tourism accommodation is a complex undertaking due to the diversity of both accommodation types and of the cultural, environmental and economic contexts in which the systems are embedded.

The National Accommodation Standards of Hotels set by the Department of Tourism classified the five levels of accommodation standards ranging from one to five stars applicable to hotels, resorts and apartment hotels. To obtain higher stars, progressively higher service and facility quality, facility condition and improved business practices like environmental management.

Presently in the Philippines, hotel standardization and classification is done through the process of accreditation. Hotels undergo the process of accreditation conducted by the Department of Tourism. The goal is to primarily check if it would pass the

## **The Availability and Adequacy, and Level of Importance of the Facilities and Services Offered by Hotel Fragaria: An Input for Partnership Program**

required standards for hotel operations. The hotel standards may fall into security, hygiene, ease and expediency for hotel guests. A certificate will be issued as a proof that the property was able to meet the minimum standards and recognized by the Department of tourism.

The mandate under the Philippine Tourism Act of 2011 is to develop and implement minimum quality standards to regulate tourism activities and services countrywide and to implement criteria for classification and standardization of tourism facilities and services.

Historically, Benguet is the roof of Northern Luzon. It straddles on the Cordillera mountain ranges. Mt. Pulag, second highest mountain in the Philippines, and Halsema Highway, the highest mountain highway system in the country, are located in Benguet. Today it holds claim as the "Salad Bowl of the Philippines" because of the huge production of upland vegetables. Benguet continues to expand its commerce and industry giving emphasis to tourism. It is the most developed and fastest growing economy among the provinces of Cordillera. This owes mainly to its proximity to Baguio City and its role as seat of provincial government, educational center and trading hub of the region's vegetable industry. It currently focuses on tourism development to make it worthy of its role the tourism gateway to the Cordillera (DOT-Benguet 2016).

Hotel Fragaria was built in 2002 to cater to all guests or tourists of different classifications like business travelers, walk-ins, family, and group. It is a four (4) storey building and has 26 rooms that has standard bed with built-in cable television, and restroom inside the room, however the remaining two rooms offers matrimonial bed, with built-in cable television, and restroom inside the room. In addition, it has two function halls that can accommodate 80-100 guests approximately. With its the goal to provide quality services to clients/guests it is expected that the service quality of the hotel meets the guest's needs and expectations. It is important that the hotel comply with the local standards especially in the areas of safety, sanitation, and hygiene practices.

Thus, studies have to be conducted by the proponents to examine, evaluate and standardize the facilities and service quality of Hotel Fragaria based on its accommodation classification. This will also provide an avenue for the researchers to create a project proposal for an extension service and will be proposed as a related learning venue for Bachelor of Hospitality Management students' outcomes-based education program as an actual learning experience.

### **REVIEW OF LITERATURE**

According to the United Nation World Tourism Organization (2015) a Hotel classification is the ranking of hotels, usually by using nomenclature such as stars (or diamonds), with one star denoting basic facilities and standards of comfort and five stars denoting luxury in facilities and services. The purpose is to inform intending guests in advance on what can be expected in order to reduce the gap between expected and experienced facilities and service delivery. The terms 'grading', 'rating', 'classification' and 'star rating' are used to refer to the same concept, i.e. to rank hotels by their facilities and standards.

The present economic environment is marked by the deep world crisis on one hand and by the increased concern within the tourism organizations to find solutions that could sustain the economic efficiency and limit the negative effects on the other hand. Tourists' adjustment to the new economic conditions has triggered a higher interest in obtaining the best quality-price balance for the purchased tourist services, and particularly for hotel facilities. The quality of guest services offered by each supplier is the result of joining two components: quantity, which is rather of material nature as it is represented by equipment and facilities and quality, which is mainly behavioristic.

Moreover, according to Ondiek, 2015, classification is a systematic assessment of the quality standards and provision of arrange facilities and amenities in assigning symbols. It is important to observe that the diverseness of the hospitality industry also affects the classification of hotel quality. We can actually find many programmes, classifications and seals of quality promoted by public authorities and private companies that create confusion in the consumer perceptions of hotel quality. Moreover, new electronic distribution channels and their ratings are becoming a new way to gather information about a hotel and its quality. Secondly, a point that can cause complications is that different countries and regions can choose differing approaches depending on the features of the classification (number of levels, symbols used, etc.) and the nature of the programme for public and private.

In line with this, standardization is a formulation, publication, and implementation of guidelines, rules, and specifications for common and repeated use, aimed at achieving optimum degree of order or uniformity in a given, discipline or filed. Standard is specific to a product or service and occupation or qualification. Thus, standards are set of specifications or descriptions of the desired state a quality or required quality level. A good example is the standard of guestroom of standard operating procedure of handling guest arrival or check-in.

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Historically, Lau et al. (2005) mentioned that the hotel classification systems were formed to ensure safe and reliable lodging and food for travelers at a time when very few such trustworthy establishments existed. The broad objectives of quality systems or standardization systems are essentially to promote quality awareness and improve performance practices and capabilities; to serve as a working tool for managing performance, planning, training and assessment; and to facilitate communication and share best practice information about successful quality strategies and benefits.

Nebes, et.al (2011) stated that several hospitality associations representing the industry support a standardized classification system even though they find it difficult to accept standards created by any non-hotelier's entity and believing that only hoteliers can understand the needs of their guests. In some countries, the national tourism boards have classifications of their own, but these differ from country to country and region to region. There is a clear need in the hospitality industry to create a universal system that is consistent and transparent.

There exists a multitude of types of official hotel classification systems across the globe, varying in terms of criteria, management and monitoring, but all essentially serving the same primary and crucial purpose of providing information on a product which is often purchased/listed sight unseen. This multiplicity of systems can nevertheless be a challenge for consumers, accommodation providers, and implementing agencies the BSU.

### **OBJECTIVES:**

This study is to determine the availability and adequacy, and level of importance of the facilities and services offered by Hotel Fragaria.

1. Determine Hotel Fragaria's availability and adequacy of services in the following areas using the Department of Tourism's (DOT) National Accommodation Standard:

- A. Front Office (Arrival and Departure)
  - A.1. Building Appeal
  - A.2. Entrance/Exit and Parking
  - A.3. Security/Desk/Area
  - A.4. Reception Area
  - A.5. Check-in Process
- B. Guestrooms
  - B.1. Room Size (according to its classification)
  - B.2. Bed and Mattress Quality
  - B.3. Bedding and Linen Quality
  - B.4. Bedroom Lighting
  - B.5. Bedroom Amenities and Accessories
- C. Bathroom
  - C.1. Bath and shower with functioning hot and cold water
  - C.2. Bathroom basin
  - C.3. Bathroom shower curtain
  - C.4. Bathroom tiled of quality granite marble
  - C.5. Vanity mirror
  - C.6. Quality toilet bowl and seat cover
  - C.7. Available towels of good quality
  - C.8. Available toilet amenities
- D. Food and Beverage
  - D.1. Available restaurant or coffee shop
- E. Public Areas
  - E.1. Function rooms
  - E.2. Public toilet with wash area
  - E.3. Emergency and Fire exit evacuation
  - E.4. Business center (Photocopier, souvenir shop)

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2. Determine Hotel Fragaria's services' level of importance in the following areas using the Department of Tourism's (DOT) National Accommodation Standard:

- A. Front Office (Arrival and Departure)
  - A.1. Building Appeal
  - A.2. Entrance/Exit and Parking
  - A.3. Security/Desk/Area
  - A.4. Reception Area
  - A.5. Check-in Process
- B. Guestrooms
  - B.1. Room Size (according to its classification)
  - B.2. Bed and Mattress Quality
  - B.3. Bedding and Linen Quality
  - B.4. Bedroom Lighting
  - B.5. Bedroom Amenities and Accessories
- C. Bathroom
  - C.1. Bath and shower with functioning hot and cold water
  - C.2. Bathroom basin
  - C.3. Bathroom shower curtain
  - C.4. Bathroom tiled of quality granite marble
  - C.5. Vanity mirror
  - C.6. Quality toilet bowl and seat cover
  - C.7. Available towels of good quality
  - C.8. Available toilet amenities
- D. Food and Beverage
  - D.1. Available restaurant or coffee shop
- E. Public Areas
  - E.1. Function rooms
  - E.2. Public toilet with wash area
  - E.3. Emergency and Fire exit evacuation
  - E.4. Business center (Photocopier, souvenir shop)

3. Identify the significant relationship between the availability and adequacy of Hotel Fragaria's Services' and level of importance.

### **METHODOLOGY**

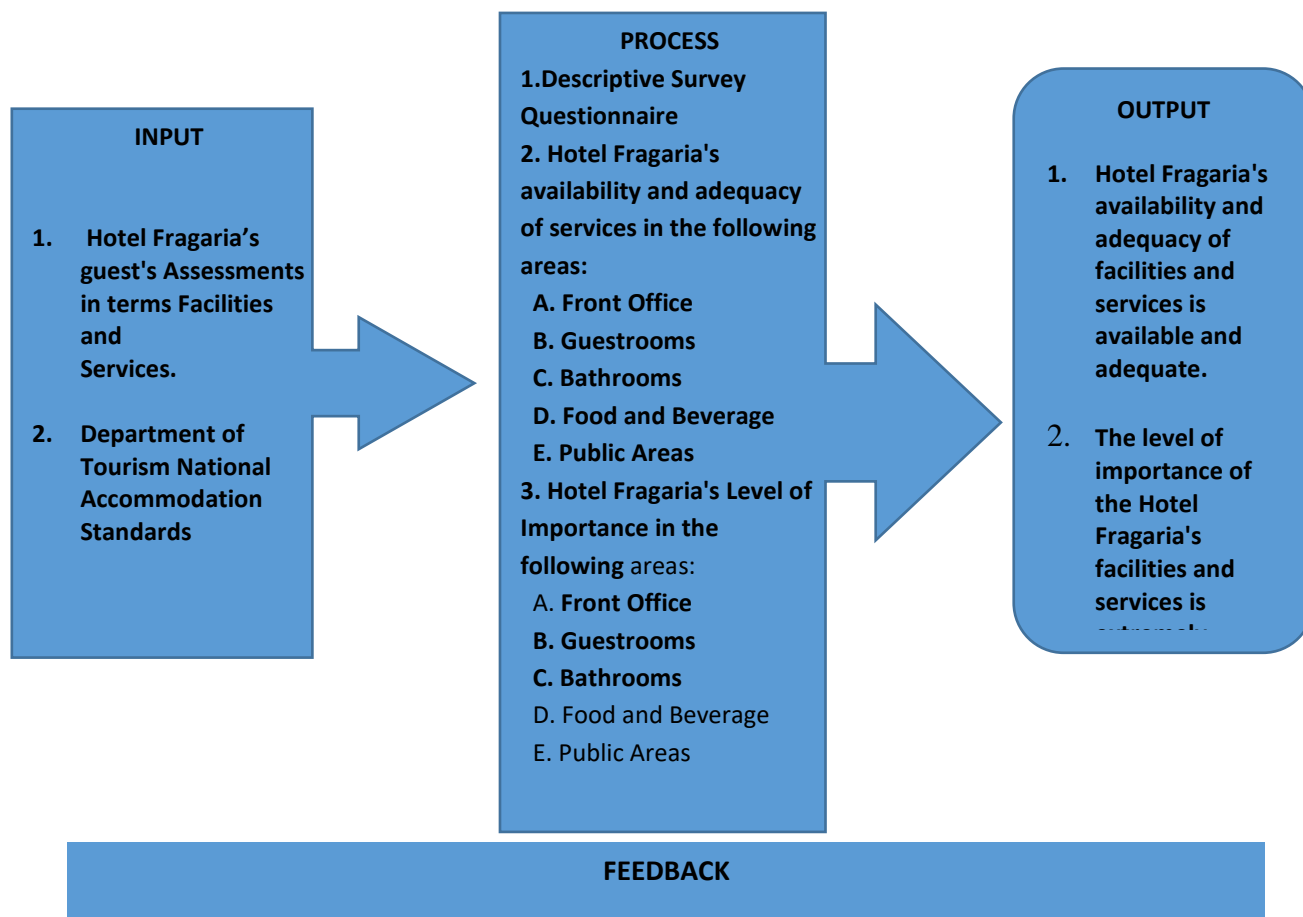
#### **Research Design**

This presents the methods that were used in this study together with procedures employed in the construction and validation of the questionnaire. The researches employed both descriptive and inferential statistics in utilization in the analyses of the data. The descriptive part includes the computation of the mean to describe the level of availability and adequacy as well as the level of importance of the services and facilities of the five areas of Hotel Fragaria. The questionnaire was formulated based on the Department of Tourism (DOT) National Accommodation Standard tool for the in-house respondents' as basis for improving the facilities and services.

### **CONCEPTUAL FRAMEWORK**

The following concepts and their context were considered in formulating the research paradigm for this study. The relationship of the input-process-output considered by this study is illustrated in Figure 1.

**The Availability and Adequacy, and Level of Importance of the Facilities and Services Offered by Hotel Fragaria: An Input for Partnership Program**



**Figure 1. Paradigm of the Study**

**DATA COLLECTION INSTRUMENTS**

The researchers made use of structured-questionnaire based on the Department of Tourism National Accommodation Standards in data gathering for the in-house guests’ respondents. The questionnaire was divided into two parts. Part one consisted of the guided response type particularly the recall type. It supplied the following information about their demographic profile: age, height, weight, civil status, gender, ethnicity and occupation. The respondents were given instructions to write/use a check mark on their appropriate answer.

The second part of the questionnaire was divided into two parts. The first part consisted the availability and adequacy of facilities and services, and the second part is the level of importance of the facilities and services. The respondents were given instructions to write the rating equivalent to the availability and adequacy, and level of importance of facilities and services offered by Hotel Fragaria.

**The following rating scale was used for the Availability and Adequacy**

Rating Scale	Description
1	Not Available
2	Available and Fairly Adequate
3	Available and Adequate
4	Available and Very Adequate

**The following rating scale will be used for the Level of Importance:**

Rating Scale	Description
1	Not Important
2	Slightly Importance
3	Moderately Important



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4	Very Important
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### Data Collection Procedure

The two questionnaires were constructed based on the Department of Tourism National Accommodation Standards and were designed to help the researchers determine whether the facilities and services offered by Hotel Fragaria's qualifies as a major criterion in standardizing its facilities and services. The researchers personally administered the questionnaire to the respondents to ensure that the instructions for responding to the questionnaire are made clear.

The data gathered were sorted, tallied and tabulated by sets and variables related to the specific problems of the study. Convenience sampling was used in the data collection. Convenience sampling is also known as *availability sampling*, it is a specific type of non-probability *sampling* method that relies on data collection from population members who are conveniently available to participate in study and proximity to the researcher/s.

### TREATMENT OF DATA

The data on the questionnaire were subjected to statistical treatment using the Pearson Product Moment Correlation Coefficient (Pearson's  $r$ ) to measure the strength of the relationship between the variables. The inferential portion however is the testing of the hypothesis that the correlation coefficient is not significantly different from zero.

The formula used is as follows:

The mean  $\bar{x}$  is given by

$$\bar{x} = \frac{\sum_i^n x_i}{n} \text{ where}$$

$x_i$ :  $i^{\text{th}}$  observation  
 $n$ : sample size.

Pearson's  $r$  on the other hand is computed using the formula

$$r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{n}}{\sqrt{(\sum Y^2 - \frac{(\sum Y)^2}{n})(\sum X^2 - \frac{(\sum X)^2}{n})}}$$

Where:

$n$ : Number of cases

$X$ : Average Mathematics grades of the respondents

$Y$ : Level of problem-solving success of the respondents

$\sum X$ : Summation of the average Mathematics grades

$\sum Y$ : Summation of the level of problem-solving success

$\sum x^2$ : Summation of the squares of average Mathematics grades

$\sum Y^2$ : Summation of the squares of the level of problem-solving success

$(\sum X)^2$ : Squared summation of the average Mathematics grades

$(\sum Y)^2$ : Squared summation of the level of problem-solving success

The significance of the correlation coefficient was tested using t-test at 5% level of significance. The formula for t-test is given by:

$$r = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Where:

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$r$ : Pearson Product Moment Correlation Coefficient

$n$ : number of cases

The strength of the relationship is based on the following ranges of the correlation coefficient:

Ranges of $r$	Degree/Strength of Relationship
1	Perfect Relationship
0.80 to 0.99	Very Strong/ Very High
0.60 to 0.79	Strong/High
0.40 to 0.59	Moderate/ Substantial
0.20 to 0.39	Weak/Small
0.01 to 0.19	Almost negligible/Very Weak
0	No correlation

The responses of the respondents were similarly processed in order to establish the availability and adequacy, and level of importance of the facilities and services offered by Hotel Framagia.

### DISCUSSION OF RESULTS

This chapter of the study presents the pertinent data relative to the specific problems of the study. There are 50 in-house guests' respondents in answering the questionnaire.

#### Front Office

**Table 1. Front Office level of availability and adequacy, and level of importance of the facilities and services offered by the Hotel Framagia's, as well as the correlation between these levels**

CRITERIA	MEAN LEVEL OF AVAILABILITY AND ADEQUACY			MEAN LEVEL OF IMPORTANCE			PEARSON'S $r$		P-VALUE
	DE	RANK		DE	RANK		DE		
Building Appearance	3.09	AA	3	3.71	EI	3	0.16 <sup>ns</sup>	VW	0.26
Building Design and Construction Quality	2.96	AA	5	3.68	EI	6	0.12 <sup>ns</sup>	VW	0.41
Building Condition	2.76	AA	8	3.74	EI	2	0.18 <sup>ns</sup>	VW	0.20
Entrance/Exit and Parking	2.95	AA	6	3.66	EI	7	0.04 <sup>ns</sup>	VW	0.77
Security Desk/Area	3.39	AA	1	3.77	EI	1	0.22 <sup>ns</sup>	W	0.12
Reception Area	3.07	AA	4	3.69	EI	5	0.08 <sup>ns</sup>	VW	0.57
Check-In Process	2.92	AA	7	3.64	EI	8	0.20 <sup>ns</sup>	W	0.17
Check-Out Process	3.24	AA	2	3.70	EI	4	0.18 <sup>ns</sup>	VW	0.22
FRONT OFFICE	3.05	AA		3.70	EI		-0.18 <sup>ns</sup>	VW	0.21

Legend

	Level of Availability and Adequacy	Level of Importance	Ranges of $r$	Strength of Relationship
1.00-1.49	Not Available (NA)	Not Important (NI)	1.00	Perfect Relationship (P)
1.50-2.49	Available and Fairly Adequate (AFA)	Slightly Important (SI)	0.80 to 0.99	Very Strong (VS)
2.50-3.49	Available and Adequate (AA)	Moderately Important (MI)	0.60 to 0.79	Strong (S)
3.50-4.00	Available and Very Adequate (AVA)	Extremely Important (EI)	0.40 to 0.59	Moderate (M)
ns	Not significant		0.20 to 0.39	Weak (W)
*	Significant		0.01 to 0.19	Very Weak (VW)
**	Highly significant		0.00	No correlation (NC)

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Presented in table 1 are the results for the front office. All criteria are rated “available and adequate” and “extremely important.” Of the listed criteria, “security/desk area” and “check-out processes” garnered the highest mean level for availability and adequacy while “building conditions” the lowest. Similarly, “security/desk area” and “building conditions” were graded the most important while “check-in processes” the least. Since the p-values are all greater than 0.05, this indicate that the correlation coefficients are all not significantly different from zero.

### Guestrooms

**Table 2. Guestroom level of availability and adequacy, and level of importance of the facilities and services offered by the Hotel Fragaria, as well as the correlation between these levels**

CRITERIA	MEAN LEVEL OF AVAILABILITY AND ADEQUACY	DE	RANK	MEAN LEVEL OF IMPORTANCE	DE	RANK	PEARSON'S r	DE	P-VALUE
Room Size	3.20	AA	1	3.74	EI	1.5	0.15 <sup>ns</sup>	VW	0.29
Bed Mattress Quality	3.05	AA	2	3.72	EI	3	0.23 <sup>ns</sup>	W	0.11
Bedding and Linen Quality	2.86	AA	3	3.74	EI	1.5	0.18 <sup>ns</sup>	VW	0.22
Bedroom Lighting	2.80	AA	5	3.69	EI	4	0.31*	W	0.03
Bedroom Furniture	2.82	AA	4	3.65	EI	6	0.38**	W	0.01
Bedroom Amenities and Accessories	2.50	AA	6	3.68	EI	5	0.15 <sup>ns</sup>	VW	0.30
OVERALL	2.87	AA		3.77	EI		0.31*	W	0.03

#### Legend

	Level of Availability and Adequacy	Level of Importance	Ranges of r	Strength of Relationship
1.00-	Not Available (NA)	Not Important (NI)	1.00	Perfect Relationship (P)
1.49	Available and Fairly Adequate (AFA)	Slightly Important (SI)	0.80 to 0.99	Very Strong (VS)
1.50-		Moderately Important (MI)	0.60 to 0.79	Strong (S)
2.49	Available and Adequate (AA)		0.40 to 0.59	Moderate (M)
2.50-	Available and Very Adequate (AVA)	Extremely Important (EI)	0.20 to 0.39	Weak (W)
3.49			0.01 to 0.19	Very Weak (VW)
3.50-	Not significant		0.00	No correlation (NC)
4.00	Significant			
ns	Highly significant			
*				
**				

Table 2 on the other hand displays the respondents’ rating on the different dimensions of the guestrooms. Evidently, all criteria are “available and adequate” and are “extremely important.” Moreover, the correlation coefficient is significantly different from zero under “bedroom lighting” and is highly significant under “bedroom furniture.” These coefficients are both positive and weak suggesting that a slight change on the level of availability and adequacy results to an occasional change in the level of importance in vice versa.

### Bathrooms

## The Availability and Adequacy, and Level of Importance of the Facilities and Services Offered by Hotel Fragaria: An Input for Partnership Program

Table 3. Bathroom level of availability and adequacy, and level of importance of the facilities and services offered by the Hotel Fragaria, as well as the correlation between these levels

CRITERIA	MEAN LEVEL OF AVAILABILITY AND ADEQUACY			MEAN LEVEL OF IMPORTANCE			PEARSON'S r	DE	P-VALUE
	DE	RANK		DE	RANK				
Bath and Shower with Functioning Hot and Cold Water	2.82	AA	5	3.78	EI	1	0.05 <sup>ns</sup>	VW	0.73
Bathroom Basin	2.80	AA	6.5	3.62	EI	7.5	0.14 <sup>ns</sup>	VW	0.34
Bathroom Shower Curtain	2.84	AA	4	3.70	EI	3	0.11 <sup>ns</sup>	VW	0.43
Bathroom tiled with Quality Granite or Marble	2.96	AA	2	3.68	EI	4.5	0.38 <sup>**</sup>	W	0.01
Vanity Mirror	2.80	AA	6.5	3.66	EI	6	0.46 <sup>**</sup>	M	0.00
Quality Toilet Bowl with Seat and Cover	3.00	AA	1	3.72	EI	2	0.16 <sup>ns</sup>	VW	0.26
Available Towels of Good Quality	2.86	AA	3	3.68	EI	4.5	0.14 <sup>ns</sup>	VW	0.33
Available Toilet Amenities	2.54	AA	8	3.62	EI	7.5	0.08 <sup>ns</sup>	VW	0.57
OVERALL	2.83	AA		3.68	EI		0.13 <sup>ns</sup>	VW	0.37

### Legend

	Level of Availability and Adequacy	Level of Importance	Ranges of r	Strength of Relationship
1.00-1.49	Not Available (NA)	Not Important (NI)	1.00	Perfect Relationship (P)
1.50-2.49	Available and Fairly Adequate (AFA)	Slightly Important (SI)	0.80 to 0.99	Very Strong (VS)
2.50-3.49	Available and Adequate (AA)	Moderately Important (MI)	0.60 to 0.79	Strong (S)
3.50-4.00	Available and Very Adequate (AVA)	Extremely Important (EI)	0.40 to 0.59	Moderate (M)
ns	Not significant		0.20 to 0.39	Weak (W)
*	Significant		0.01 to 0.19	Very Weak (VW)
**	Highly significant		0.00	No correlation (NC)

Similar results on the level of availability and adequacy, and level of importance of the bathroom facilities and services are observed. Furthermore, the two variables had their highest and significant correlation under "vanity mirror" and "tiling" while not significantly different from zero elsewhere. These results are given in table 3.

### Food and Beverage

Table 4. Food and Beverage level of availability and adequacy, and level of importance of the facilities and services offered by the Hotel Fragaria, as well as the correlation between these levels

CRITERIA	MEAN LEVEL OF AVAILABILITY AND ADEQUACY			MEAN LEVEL OF IMPORTANCE			PEARSON'S r	DE	P-VALUE
	DE	RANK		DE	RANK				
Available restaurant or coffee shop	2.58	AA		3.60	EI		0.33 <sup>*</sup>	W	0.02
OVERALL	2.58	AA		3.60	EI		0.33 <sup>*</sup>	W	0.02

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Legend				
	Level of Availability and Adequacy	Level of Importance	Ranges of r	Strength of Relationship
1.00-1.49	Not Available (NA)	Not Important (NI)	1.00	Perfect Relationship (P)
1.50-2.49	Available and Fairly Adequate (AFA)	Slightly Important (SI)	0.80 to 0.99	Very Strong (VS)
2.50-3.49	Available and Adequate (AA)	Moderately Important (MI)	0.60 to 0.79	Strong (S)
3.50-4.00	Available and Very Adequate (AVA)	Extremely Important (EI)	0.40 to 0.59	Moderate (M)
ns	Not significant		0.20 to 0.39	Weak (W)
*	Significant		0.01 to 0.19	Very Weak (VW)
**	Highly significant		0.00	No correlation (NC)

Table 4 presented the level of availability, adequacy, and importance of the facilities under “food and beverage.” Results reveal that the availability of restaurant and coffee shop is adequate and available, and it is extremely important.

### Public Area

**Table 5. Public area level of availability and adequacy, and level of importance of the facilities and services offered by the Hotel Fragaria, as well as the correlation between these levels**

CRITERIA	MEAN LEVEL OF AVAILABILITY AND ADEQUACY			MEAN LEVEL OF IMPORTANCE			PEARSON'S r	DE	P-VALUE
	DE	RANK		DE	RANK				
Function Rooms	3.06	AA	3	3.80	EI	3	0.21 <sup>ns</sup>	W	0.15
Public Toilet with Wash Area	3.28	AA	1	3.86	EI	2	0.38 <sup>**</sup>	W	0.01
Emergency and Fire Exit Evacuation	3.24	AA	2	3.92	EI	1	0.10 <sup>ns</sup>	VW	0.51
Business Centers	2.64	AA	4	3.72	EI	4	0.28 <sup>*</sup>	W	0.05
OVERALL	3.06	AA		3.83	EI		0.18 <sup>ns</sup>	VW	0.22

Legend				
	Level of Availability and Adequacy	Level of Importance	Ranges of r	Strength of Relationship
1.00-1.49	Not Available (NA)	Not Important (NI)	1.00	Perfect Relationship (P)
1.50-2.49	Available and Fairly Adequate (AFA)	Slightly Important (SI)	0.80 to 0.99	Very Strong (VS)
2.50-3.49	Available and Adequate (AA)	Moderately Important (MI)	0.60 to 0.79	Strong (S)
3.50-4.00	Available and Very Adequate (AVA)	Extremely Important (EI)	0.40 to 0.59	Moderate (M)
ns	Not significant		0.20 to 0.39	Weak (W)
*	Significant		0.01 to 0.19	Very Weak (VW)
**	Highly significant		0.00	No correlation (NC)

Table 5 is concerned with the level of availability, adequacy, and importance of the facilities under “public area.” Results reveal that “public toilets” and “emergency and fire exists” are the most available, adequate, and important while “function rooms” and “business centers” the least. Moreover, a significant and positive but weak correlation is observed under “public toilets” and “emergency and fire exist.”

### CONCLUSION

Based on the foregoing it can be concluded that most of the guests' respondents presents the mean level of availability and adequacy of the identified facilities and services offered by the Hotel Fragaria. Results reveal that “public areas” were rated the highest-level while “food and beverages” the lowest. However, regardless the observed differences, the ratings for all the listed

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facilities are descriptively interpreted as “available and adequate” since the mean is within the interval “2.50-3.49”. In terms of the level of importance, all facilities are deemed “extremely important” as indicated by their corresponding mean all greater than 3.50.

The correlation between the level of availability and adequacy, and level of importance of such facilities and services. It can be observed that the correlation coefficient is significantly different from zero only for the case of the facilities “guestrooms” and “food and beverages.” Specifically, the level of availability and adequacy is positively but weakly related to the level of importance under “guestrooms” and “food and beverages.”

This further means that whenever there is an increase/decrease in the level of availability and adequacy, a slight or occasional increase/decrease is observed in the level of importance in vice versa.

### RECOMMENDATIONS

The researchers deemed it proper to recommend the following:

1. Provide a visible design and layout of the frontage and public area that includes function hall and parking area.
2. Provide room service for in-house guests
3. To standardize the facilities and services of Hotel Fragaria based on its classification.
4. Create Standard Operating Procedures for Hotel Fragaria facilities and services for standardization based on the Department of Tourism National Accommodation Standards.
5. This might be an additional reference to the future researchers that might be conducted related to this topic.

### ACKNOWLEDGMENT

The researchers would like to express their gratitude and sincere acknowledgement for the priceless contributions of the people involved in the conduct of this study.

The research committees of the Office of Research and Extension for their ideas, suggestions, and recommendations for the refinement of the study. The employees of Hotel Fragaria for helping the researchers in distributing the questionnaires with the guests and to the respondents for allowing them to conduct short interviews and answering the questionnaires despite their busy schedules.

Above all, the Supreme, and Almighty God, for being the source of everything in their endeavour, blessings, and accomplishments, and for giving them the ultimate strength, guidance and love to finish this study. The researchers give back all the honor and glory to Him.

### REFERENCES

1. Adepoju, D. 2014. Standardization and Classification in the Lagos Hospitality Industry.
2. A, A. 2006. Automobile Association. Retrieved 10 18, 2007, from: [www.theaa.com staticdocs/pdf/travelandleisure/hotels/quality\\_standards\\_for\\_hotels.pdf](http://www.theaa.com/staticdocs/pdf/travelandleisure/hotels/quality_standards_for_hotels.pdf).
3. Bushwell, W. 2003. Service quality in Leisure and Tourism. Cambridge, USA:CABI publishing.
4. Chevalier, J. 2004. The Social Analysis System. Carlton University, Ottawa,Canada.
5. Chon, K. S. K. & Sparrowe, R. T. 2000. Hospitality an Introduction 2<sup>nd</sup> edition.USA: Delmar Thomson Learning.
6. Department of Tourism National Accommodation Standards
7. Fors, R.C., Sturman, M. C., and Heaten C.P. 2012. Total Quality Management for Hospitality and Tourism.Cengage Learning Asia Pte.Ltd.
8. Kiplagat, W, Makindi, S. and Obate, G. 2015. An Analysis of Hotel rating and Its Implications on Financial Turnover of rated Hotels in Kenya.International Journal of Environment, Vol. 5.
9. Kunzany N. and Chaisawat, M. 2011. Guidelines for Standardization and Classification of Hotels in Bhutan. Journal of Tourism Hospitality and Culture Arts Vol. 3, Issue 2.
10. Ondiek, W. 2015. Standardization and Classification: A Tool for Enhancing Destination Competitiveness and Sustainability. Standards, Workforce Development & Training Accreditation Management
11. <http://www2.unwto.org/agora/about-hotel-classification-systems>
12. [https://static.hosteltur.com/web/uploads/2015/03/OMT\\_clasificaciyn\\_hotelera\\_4y5estrellas.pdf](https://static.hosteltur.com/web/uploads/2015/03/OMT_clasificaciyn_hotelera_4y5estrellas.pdf)  
<https://core.ac.uk/download/pdf/6283818.pdf>

## Tourism and Social Development Strategy in Algeria after the CoronaPandemic- The Case of El Tarf City



Houria BENHAMZA

Chadli Ben Djedid University – El Tarf

**ABSTRACT:** This article deals with the tourism development strategy and the Corona crisis, and what this pandemic has left on jobs, to social and hotel services in Algeria, especially in El Tarf, and the disruption of many projects with a local development endeavor, which necessitated the adoption of a new strategy by travel and tourism agencies to cover the deficit and to face the crisis, And that is by its orientation towards exploiting digital technology, virtual space, tourism media and encouraging local tourism as an alternative to facing this crisis after the Corona epidemic.

**KEY WORDS:** Tourism; Tourism agencies; Development; Tourism culture; Corona pandemic.

### 1. INTRODUCTION

Tourism is one of the most important bases of economic development, as many countries have recognized that tourism is an export industry that contributes to sustainable development in the face of current economic shifts and increased global competitiveness.

The obstacles facing Algeria's tourism sector, which suffers from a narrow view of society and its great exclusion as well as to the absence of social tourism culture with the crisis of the phase that accompanied the Corona pandemic spread and its consequences for economic and tourism activity. Then, ideas began to develop tourism awareness and developing tourism culture in order to become an effective economic sector that contributes to attract hard currency from other than hydrocarbons, expanding tourism investment and building performance and human efficiency in tourism, but that was accompanied by a significant decline in light of the Corona crisis. Therefore, the promotion for local tourism was a strategic dimension for the development of local tourism and for overcoming difficulties and financial inability.

Through this overview of the importance of the activation of tourism culture in Algeria and its role in achieving development, in the content of this article, we will make a sociological analysis of the reality of the tourism sector and its relationship to local development in the light of the Corona epidemic. By answering the following main question: **What is the impact of Corona pandemic on tourism activity and development in Algeria, especially in El Tarf?**

The subject of our research includes the following elements:

1. The importance of social tourism for development.
2. Tourism culture and the role of tourism media.
3. The role of the tourism sector in achieving development in Algeria.
4. The effects of the Corona pandemic on the tourism sector in Algeria (El Tarf).
5. Tourism development strategy after the Corona pandemic.

### 2. THEORETICAL FRAMEWORK OF THE RESEARCH

#### 2.1 Definition of tourism:

Tourism is defined as hitting the ground, i.e. moving and walking from one location to another in a particular country, territory or around the world. As well as, the World Tourism Organization also defines tourists as all people who are in a place for 24 hours with a view to obtaining entertainment, including holidays, sports and relaxation.

Tourism is a phenomenon of human activity that is long known as temporary population transfer. Some people have their residence or home moving to other place or countries for non-residential purposes, but for recreation and commerce. In addition, it is a group of businesses and functions that serve tourists and contribute to the provision of accommodation, transportation and recreational sites, and tourism as a means of marketing (Bouamoucha, 2020).

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Therefore, tourism has several meanings that can be illustrated in two important points:

- First: tourism benefits the movement of a person from his/her country of origin to another one asking for something.
- Second: it benefits temporary movement, not migration, and therefore they have specified the length of the tourist's stay as more than 24 hours and less than 12 months.

### 2.2 Tourism development:

There are various concepts concerning tourism development in which it reflects the goal of achieving balanced increase in tourism resources or of increasing productivity in the tourism sector through optimal use of tourism productive resources. Some authors have defined it as the expansion of facilities and services base in order to meet the tourists' needs. Others focus on the offer side.

"Tourism development must not be limited to the development of offer only by building hotels and tourism villages spread over different areas, but the meaning of tourism development must be extended to the development of both offer and demand in order to satisfy the tourists desires and reach national, sectoral and regional objectives that have been already pre-established as a benchmark for measuring the degree of required tourism development " (Al-Adjimi, 1992).

In addition, " Tourism development takes the form of integrated industrialization, which means the establishment and construction of tourist centers that include the various services that a tourist needs in the course of its stay and the appropriate format of financial capabilities of the different categories of tourists " (Hasanine, 2006).

From the previous definitions, we conclude that tourism development remains essentially an integral part of economic and social development.

### 2.3 Tourism media:

It is a recent use term, especially for many media professionals and researchers. As well as, it is defined as : " All objectives, non-personalized and informal media efforts to improve the vision of tourism that attend for the preparation and transmission of a message or a set of messages aimed at creating a tourist awareness or developing the tourist image of a state or region in particular markets and audiences by using media to attract the interest of prospective tourists in such markets, whether in the country or abroad and led them to conduct into tourism " ( El Harbi & Al-Sehli, 2011).

Another definition emphasizes that tourism media includes both formal governmental and informal mass media that influence the values and trends of citizens and customers towards the tourism sector, it means : " addressing the public whether in the country or abroad with a substantive and mental approach , using attraction and excitement factors of tourism grants with a view to persuade the public, raising interest in tourism and its benefits for the individual and the state, as well as encouraging him to figure out tourism attractions, awareness-raising and good treatment of tourist" ( Al-Sehli, 2011).

### 2.4 Corona epidemic:

Corona or "Covid-19" is a pandemic and infectious disease caused by the SARS Virus from dangerous viral strain. It was discovered in Wuhan, China at the end of 2019 when The Health Organization warned of its spread in the world and its risks to human health and to the economy. The consequences of this pandemic emerged in a fast pace around the world. In 2020, infections reached more than 4 million cases and thousands of deaths with the appearance of variants (Delta, Alpha and Omicron) which made the epidemic difficult to control. (WHO, 2020)

This is according to warnings issued by the World Health Organization between 2020/2021.

## 3. FACTORS CONTROLLING TOURISM DEVELOPMENT

Tourism varies according to the diversity of human desires and different trends. These types recreational tourism, cultural tourism, sports, religious, social tourism, etc....

Tourism in this diversity is a link of interest to many researchers in clarifying its importance, economic and cultural dimensions; it is an effective means of cultural and social friction among people. Besides, it is a flexible source of income in the hard currency of developing countries in order to improve their national income and the development of other factors, especially in the light of economic shifts.

Moreover, tourism is a key challenge to the development aspirations of many tourism countries. Hence, this imposes economic openness on these countries to domestic private and foreign investment and advancing the international partnership process. Tourist spending generates income for travel and tourism agencies as well as creates jobs, thus increasing employment and national income. In addition to that, social tourism contributes to the construction of new hotels and provides comfort, mobility and entertainment services coastal features.

Statistics show that many states have been able to cover their balance of income and trade with tourism revenue during the



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period of economic crises previously known to the world. For instance: "Spain's revenue in 1963 amounted to \$704.6 million, an increase of \$202.8 million over 1962, 48.8%. The average number of tourists to Spain in 1951 and 1958 was 18%, which rose to 24.6% between 1958 and 1962. So, Spain's tourism income was sufficient to cover the trade deficit, with a surplus of about \$44 million" (Hatem, 1993).

Among the major factors contributing to tourism development are the following (Zitoun, 1999):

- **Factors due to tourist:** it is the sum of desires and ideas that belong to the tourist her/himself in which they prompts him to visit a particular country or region that is linked to the interaction of culture, personal composition, religious conviction and belief with news and propaganda about the tourist country.
- **External factors affecting the tourist:** the geographical location of the tourist country, being close or distant from the tourist-exporting country, as well as the tourist stability, economic and social situation of the tourist country.
- **Factors associated with the tourist country:** these includes tourist trips prices, existing facilities, accommodation, means of transport and the extent to which travel programs are organized as well as to the effectiveness of tourism advertising.
- **Market factors:** tourism, like other economic sector is affected by the law of offer and demand and the issue of competition for tourism and race to attract the greatest possible number of tourists.
- **Factors related to the role of advertising media:** this is illustrated by the effectiveness of the advertising on which travel agencies and tourism companies rely on through presenting invitations and posters.

### 4. TOURISM AWARENESS AND IMPORTANCE FOR TOURISM DEVELOPMENT

The role of media in general is evident in its various sectors by achieving public convergence around ideas, goals and programs for change and social development. This can be through education as a core function of the media. Media rises to the role of partner in development and comprehensive sustainable development process. The great role of media in the field of education and culture has made it possible to figure out educational media and its modern tools in the educational process in mass culture (Saeed, 2008).

Tourism media is a set of aspects of activity carried out by media organizations to form a tourist knowledge base for the public to influence their attitudes and ideas. It may then enhance its behavior towards tourism to attract as many tourists as possible both inside and outside the country through various media tools. " Tourism media is a necessary feature of the tourism industry in which it plays a major role in this field through multimedia such as : radio, audio, press, exhibition, films, print...There is an urgent need for its effective role in the process of tourism development" (Ghamraoui, 2012).

Therefore, tourist media functions include:

- ✓ Supporting tourism and improving national income.
- ✓ Achieving a dynamic increase in sales and tourist demand on local products.
- ✓ Reaching out to investors and finance centers for tourism projects and saving in marketing costs.
- ✓ Convince clients to inquire about services and try to improve them.
- ✓ Competitive function, which is better served or good than other foreign goods.
- ✓ Preservation and dissemination of cultural gains and legacies.

If the media has an important role in the development of the tourism sector, the formation of tourism awareness depends on the media and its functions. So: "Creating a tourism awareness and culture is the key area of tourism development and that information is actually able to create a tourism awareness and culture, especially since it is supposed to find those principles for tourism's recovery. The primary public information function is to form a public opinion capable of guiding and changing the tourism image because tourism must be a community responsibility not assigned to the Ministry and all bodies involved in the development and improvement of society in tourism planning" (Ghamraoui, 2012).

Thus, Tourism may contribute to the development of the State economy and to the improvement of social services in which this requires a number of proceedings which are summarized as follows:

- ✓ The presence of centers at tourist sites to regulate the movement of tourists and provide them with the necessary information.
- ✓ Provision of visitor centers that require comprehensive location information with the necessary guidance on how to handle the site.
- ✓ Laws and regulations must be in place to ensure that tourist arrivals are controlled and provided with services, information, security and protection without damaging the environment.
- ✓ The need for solid management of natural and human resources in the region that can sustain them.

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- ✓ Awareness-raising and environmental education by sensitizing local population about the importance of the environment and its preservation.
- ✓ Determining the absorptive capacity of the tourist area, so as to determine the numbers of tourists arriving in the tourist area without congestion and overcrowding in order not to affect the natural and social environment on the one hand and tourists on the other to be amazed with an attractive environment that provides them with all the services and recreational activities.

Through the above, tourism awareness and culture must be disseminated through various means and institutions, media, educational clubs and institutions, etc... all that in order to form a generation that preserves its tourism gains and secures its economy and wealth. Also, it is able to overcome difficulties and crises, especially in the light of epidemics, including the economic damage the world is suffering today due to the Corona pandemic.

### 5. THE REALITY OF TOURISM DEVELOPMENT IN ALGERIA DURING THE CORONA PANDEMIC:

Tourism is a vital sector that provides income to the State and contributes to the economic development. However, the problems facing this type of tourism hamper its role and development effectiveness. Like any other activity in life, tourism is exposed to various risks and crises of varying severity, causes and consequences from one country to another. Among the major risks and crises facing the tourism sector are the following:

- ✓ The dangers of the corona pandemic and its spread in the world.
- ✓ Risks of environmental pollution and imbalance.
- ✓ Poor base processing of tourism – oriented structures.
- ✓ Differences between developed and developing countries, particularly in the field of production and technology.
- ✓ Competition for foreign investment under unfair terms for developing countries.
- ✓ Competition, requirements for achieving comprehensive quality standards and unequal opportunities between the North and the South.

One of the most important risks that we will address in this research paper is the repercussions of the spread of Corona in the world and the effects of this epidemic of social crises on the global economy and national income, by disrupting projects significantly, especially after low oil revenues and low economic growth, including on tourism revenues.

- ✓ Tourism stopped by more than 80 to 90%.
- ✓ Suspension of projects for the completion of hotels.
- ✓ Disruption of employment opportunities (loss of 100.8 million jobs) in the world.
- ✓ Flights stopped and the closure of tourist agencies.
- ✓ Reduced international arrivals due to the prohibition of movement, quarantine and trips of all kinds.

In Algeria, the situation is similar, where the decline in oil revenues reflected a 21.2 % decline in fiscal revenues, with a barrel of oil less than \$30. There is twice the contribution of the tourism sector to the GNP, which does not exceed 1.8%. As well as, employment represents little but no authorized employment, especially in the private sector or in semi-tourist jobs such as restaurant and cafe workers. There is an absence of tourism recreational activity, the large deficit and limited availability of infrastructure and hotels with the lack of competition (both in the private and public sectors).

In the face of this deficit and the crisis health situation in Algeria, the few existing tourism activities have been affected by the closure of the entire headquarters and tourism agencies, i.e. by 90% to 3000 tourist agencies across the country.

Currently, the government and trade unions in the tourism and transport sector apply urgent solutions, including:

- ✓ Increase financial support and strengthen preventive and health systems, such as vaccination, and the need for a health passport for vaccination during transportation and travel.
- ✓ Postponement of payment of bank loans by hotels and tourist agencies.
- ✓ Launch incentive programs to reduce internal agency losses (by encouraging domestic trips to shopping centers, health spas, desert and mountain areas, etc.)
- ✓ Adopting virtual tourism to publicize market and advertise to Algerian tourist destinations, especially through websites and pages.
- ✓ Promoting local tourism through organized activities and local investment in order to encourage private and local enterprises (trade events, exhibitions, seminars and conferences, etc.).

Today, the state has devoted considerable attention to the tourism sector, given both economic and social importance, drawing up a legislative text defining how to develop the tourism sector, protect interests and create special laws for tourist expansion areas. Moreover, The State has also adopted privatization of the sector by issuing an appeal to investors dealing with

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the National Tourism Development Agency, which is responsible for the operation of some 174 tourist expansion areas, re-equipping and restoring hotels, and taking care of their services, including several tourism projects in the province of El Tarf, especially in the city of El Kala.

### **6. THE EFFECTS OF THE PANDEMIC ON THE TOURISM SECTOR IN ALGERIA (EL KALA AS A MODEL)**

#### **6.1 Touristic monuments in Algeria**

Despite the growing importance of the tourism sector in many countries around the world, Algeria is not yet up to the intended level to achieve its objectives. Its achievements remain very limited compared to neighboring countries despite that Algeria have impressive regions and coastal strip extending over a distance of 1200 km. Besides, the diversity of the climate that makes tourism in Algeria continue throughout the year, as well as the vast desert that is one of the world's most beautiful deserts, in addition to the multiplicity of monuments and traditions. All of this is considered a tourist reserve that extends across the whole country such as: The Tassili, Hoggar, Castle of Beni Hamad, Tipaza's and Cherechel monuments and El Casbah in Algiers. Also, the varied arts and customs through traditional industries, without forgetting the mineral spas spread eastwards, as well as the areas that need little attention, so that Algeria becomes a global tourist pole.

Algeria has great tourism potential, but the lack of interest in it during its development course at an earlier stage has prevented it from being exploited and recognized locally and internationally. The diversity of terrain from the coastline towards the inland highlands and into the vast desert, with different tourist attractions in each region, three types of tourism should be distinguished in Algeria: Coastal tourism, Mountain tourism and desert tourism. (Karziz, 1999)

#### **6.2 Historical Overview of the City of El Kala (Geography and Civilization):**

The city of El Kala is a stimulating model for tourism development, as it is considered one of the coastal cities with a wide movement towards tourism development, a special interest in expanding hotel institutions in this region and allocating a huge budget for the restructuring of the hotel sector by providing the infrastructure of appropriate roads, environmental and coastal interface, etc. Awareness of the importance of tourism and its role in the development of the national economy is an issue.

The ancient city of El Kala was called « Toneza », a subdivision of the Roman city of "Hippo". Historians have agreed that it is a Phoenician designation which it has been a fortress to defend the area and a commercial maritime center since the Numidian period, situated on a privileged waterfront which has made it a defensive and commercial location along the seacoast and an excellent centre for commercial and military activity (Khaldoun, 1996).

The port represents a 600m deep and 150m wide bay of more than 6 hectares built since the colonial era. In 1875, Moshe who was then in charge for mapping the Algerian coast, submitted a report to the Minister of the Navy indicating the importance of the port of El Kala. An amount of 470000 French francs was allocated to the completion of this fortress, as it was the closest area to the border of the second French colony, Tunisia (Khaldoun, 1996).

#### **6.3 Social tourism requirements and the extent of their application in the City of El Kala:**

The interest in the tourism sector in Algeria came some time ago, as the state carried out a comprehensive scientific and statistical study of the tourist reality, in what is known as the tourist market. And interest in tourism investment, so the state was tasked with restructuring the city, since tourism today is an integrated industry characterized by the breadth of its activities and the multiplicity of its types, and what distinguishes it also is that it is considered an economic activity that affects many development issues, the most important of which is economic development.

Providing the requirements of the tourist offer and the level of tourism services, as well as the cultural and security level, freedom of trade in services and various policies related to economic activities (Saidi, 2013).

The tourism strategy of El Kala is embodied through its intensive development work and its objectives to attract tourists and to the current crises and difficulties and focus on the following elements:

- Transportation of all kinds to facilitate inbound and outbound movement, especially towards the beaches.
- Expansion of accommodation and hotels services that attract tourists, especially in terms of hospitality, food and residence.
- Advertisements to attract tourists through agencies, online and other modern means, to spread the image of the city and the level of services available in the tourism sector.
- Concern to security and entertainment through concerts and festivals, especially during the season of frequent tourist trips (Coral Festival).

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- A program to intensify hygiene campaigns in view of the small size of the city and the increasing number of arrivals in summer.
- Involve the major local and foreign investors to create a tourist market while providing facilities on contracting and operating in this sector.

The previous Business Plan for the Tourism Development Orientation Program set out the material objectives of the first phase (2008/2015), aimed at meeting international and national demand that will increase the number of tourists to 2.5 million (Saidi, 2013).

Tourism and travel agencies also contribute directly to the domestic product in particular by stimulating domestic and foreign tourism, offering several services: Omrah throughout the seasons, pilgrimages, airplane tickets and hotel reservations across the country and all over the world, train tickets, national and international tourist trips, Visa, home rental, tourist vehicles and other services (dtaftarf.com).

It is noticeable that the province has 19 accredited tourism and travel agencies, including 14 principle agencies and 5 branches which are distributed across 6 municipalities: 9 in the municipality of El Tarf (including: El Morjane Tour, DIDA Travel Agency, Al Abbed Travel and Tourism, Coquillage...) Also, 2 in the municipality of El Kala, 1 in the municipality of Ain Assel, 4 in the municipality of Drean, 1 in the municipality of Ben M'hidi and 2 in the municipality of El Besbes.

Accredited tourism and travel agencies can use tour guides to organize trips and accompany tourists on visits to museums, historical monuments and various archaeological sites in the province of El Tarf, thus providing jobs and contributing to local income, stimulating traditional industry and expanding trade in the province.

### 7. TOURISM DEVELOPMENT STRATEGY AFTER THE CORONA PANDEMIC

In view of the pandemic, tourism agencies in the province of El Tarf have relied on virtual tourism by developing technical services and technology for media publicity to disseminate the tourism service, especially local ones (on Facebook pages). Accordingly, the service relies on a group of media professionals who communicate with each other and attend meetings and webinars via electronic devices to record major tourism events and its activities in the province in various tourism agencies.

It has been said that virtual tourist routes can be considered as an alternative to visit tourist sites. Hence, the marketing of virtual tourism routes is leveraging global market share as well as adding high comparative and competitive advantage by using these technologies and reducing costs. In addition to that, the protection and preservation of historical site sand of architectural and artistic works of human heritage (Mohamadi, 2021).

Tourism in El Tarf was considered to be the main engine of development in the region (according to the Directorate of Tourism in El Tarf) by sending many projects which has already been offered but were not set off for reasons that related to this pandemic and its repercussions. Most of the projects have been stopped by the suspension of trips and the disruption of the relocation of the companies that were scheduled to restore the important hotels and tourist stations in El Kala.

- The land border with the neighbor Tunisia has been closed, thus disrupting the arrivals to and from Tunisia.
- Suspend all flights, both from inside and outside the country.
- The quarantine that was in the summer of 2020 during 3 months was fully implemented.
- Income for tourism agencies has decreased to -75% in 2020 compared to 2018.
- Employment was disrupted as a significant number of tour guides were laid off.
- Some restaurants and shops are closed due to lack of funding and financial support.

Updating the web pages and websites related to tourism by introducing the region and its new capabilities and achievements, and interacting with the customer and the tourist directly, identifying the requirements of individuals and providing the necessary information about the places of entertainment and the natural, archaeological and historical places. And work to provide safety and educate the Algerian citizen in the sense of responsibility towards the protection and preservation of the environment. Orienting tourists towards accommodation centers, hotels, restaurants, parks, beaches and the area's environmental characteristics and sites by providing pages and publications via the Internet, as well as developing the urban structure with all services such as transportation, hospitals, hotels, restaurants, etc... to achieve tourism development and develop interest in local tourism and make the best use of it.

The tourism sector is one of the goals of sustainable development and a basic strategy for the state in light of the current economic transformations, especially as a method for local development and for building a post-oil economy, as it contributes to improving the balance of payments, raising the domestic product, creating jobs and reducing the unemployment rate. Regions, equality in income distribution and compensation for the economic deficit recorded in light of the spread of the Corona virus, where a decrease in GDP and a deficit in the balance of payments were recorded, as previously explained.

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Based on several indicators, Algeria suffers from a significant weakness in the field of tourism, although it sits and includes many tourist components, archaeological and natural sites, and has a diverse tourist heritage. As a post-epidemic strategy, the state should be interested in forming frameworks in the field of hotel and tourism, giving attention to digital development and paying attention to developing the sector and providing it with networks and special pages for tourism guidance, as it contributes to the growth of this sector and increases investments and tourist flows towards Algeria. Also, plans to build future tourism by choosing competencies in line with the nature of the national tourism market, and taking global experiences, especially with regard to solutions that can overcome the negative effects of the Corona epidemic.

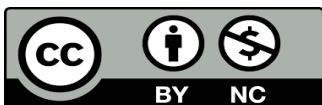
### 7. CONCLUSION:

The tourism sector and tourism institutions operate in an atmosphere of cultural diversity and technological change, and it is the sector most affected by crises in the world, especially the crisis of the Corona epidemic, so it is exposed to many risks and difficulties that must be faced with a scientific plan and preserve the elements of demand and available tourism supply as well as contribute positively to solving These problems are commensurate with the type of problem or the nature of the crisis and the introduction of global experiences.

As a result, some recommendations can be proposed: working on the embodiment of an integrated strategy by 2424 to advance the tourism sector and tourism development, while contributing to the actual implementation of projects, advancing the telecommunications sector with technological progress and digitization, forming qualified human competencies, programming many scientific forums and forums and disseminating them on the widest scale to adopt new ideas To develop the tourism sector after the Corona pandemic.

### REFERENCES

- 1) Al Adjimi, D, N. (1992). Environmental Dimensions of Development. Arab Institution Planning, Kuwait.
- 2) Bouamoucha, H. (2020). The Role of the Tourism Sector in Financing the National Economy to Achieve Sustainable Development : Case study of Algeria. The Journal of Social Sciences. University of Farhet Abbes, 29-30.
- 3) El Harbi,H, R & Al-Sahli, S, S. (2011). Tourist Media, Concepts and Applications (1st ed.). Ousama publishing and distribution house. JordanEgypt: Center for Administration.
- 4) Ghamraoui, R, A. (2012). Information and Tourism Development. Knowledge House, Cairo University, 33-34.
- 5) Hassanine, J, H. (2006). Studies in Tourism Development. University house, Egypt, p.9
- 6) Hatem, M, A. (1993). Social Tourism. National Printing and Publishing House, Egypt, p.8
- 7) Karziz, M. (1999). The Reality of Tourism in Algeria and its Role in Community Financing for Development Projects. International Forum: Community Governance and Financing in the Light of Economic Transformation, Batna University.
- 8) Khaldoun, A. (1996). El Kala between the Sea and the Lakes (Part1). Guelma Province Press, 4-5.
- 9) Mohamadi, F. (2021). Virtual Tourism as a Strategic Alternative to Traditional Tourism in the Light of Corona Pandemic Crisi. Maalem Journal for Media and Communication Studies, 3(2), p.101
- 10) Saeed, S, J. (2008). Mass Communication Psychology: Modern Book Scientist. Dar Djedara World Book House, Jordan, 63-64.
- 11) Saidi, Y. (2013). The Contribution of the Tourism Sector to Economic Development: Case of Algeria, 36, p.111
- 12) Tourism Activities in El Tarf , Directorate of Tourism and Handcrafts in El Tarf, detailed website: <http://dtatftarf.com – agencies> (Consulted on: 12/11/2021)
- 13) World Health Organisation, Corona Virus Disease Statistics, detailed website: <https://who.int> (consulted on: 25/10/2021)
- 14) World Tourism Organisation, The Outbreak of the Corona Virus on International Tourism, detailed website: <https://bit/3enj2> (consulted on: 17/11/2021)
- 15) Zitoun, M.(1999). Studies in Tourism Statistics. National Printing and Publishing House, Egypt, p.27.



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## Lipid Profile in Metabolic Syndrome Associated with Diabetes, Hypertension, Chronic Kidney Disease and Apparent Health



Ogbu, Innocent S.I; Ph.D<sup>1,6</sup>, Ogbu Chinemerem C.; B.MLS<sup>2</sup>, Ndukwe, Mbrey; MSc<sup>3</sup>, Agunwah, Elizabeth; MSc<sup>4</sup>, Eze, Clementina MSc<sup>5</sup>, Okeke, Nduka J; FMC.Path<sup>6</sup>

<sup>1,2,3</sup>Department of Medical Laboratory Science, Evangel University. Akaeze. Ebonyi State. Nigeria.

<sup>4</sup>Department of Nursing Sciences. Evangel University. Akaeze. Ebonyi State, Nigeria.

<sup>5</sup>School of Basic Midwifery, Alex Ekwueme Federal Teaching Hospital, Abakaliki. Ebonyi State.

<sup>1,6</sup>Department of Chemical Pathology. Faculty of Clinical Medicine. Ebonyi State University. Abakaliki, Ebonyi State. Nigeria.

### ABSTRACT:

**Background:** There is dyslipidaemia in metabolic syndrome (MetS). Lipid profiles in MetS associated with different health conditions may not be obvious. This study investigated lipid profiles in MetS associated with type 2 diabetes (DM-MetS), hypertension (HBP-MetS), chronic kidney disease (CKD-MetS) and apparent health (AH-MetS).

**Methods:** 540 patients were recruited for this study; 183 T2D, 136 HBP, 84 CKD patients and 137 AH subjects. They were outpatients and workers in the University of Nigeria Teaching Hospital Enugu. Nigeria. FPG, TC, HDL-C, TG as well as anthropometric measurements were determined using standard methods. Data analyses were done using GraphPad Prism version 2 statistical programme. MetS was diagnosed using NCEP-ATP 111 criteria

**Results:** Study showed 135 DM, 64 HBP, 31 CKD and 52 AH subjects had MetS, (prevalence rates: 36.9 %, 14.7 %, 18.4 %, and 37.9 % respectively). Only 38% MetS subjects had hypertriglyceridaemia while 66% with hypertriglyceridaemia had MetS. Corresponding figures for low HDLC were 40, and 77%. CKD-MetS had higher mean value of TG and TC than others; ( $2.65 \pm 0.16$  mmol/l;  $F = 11.4$ ;  $P = 0.0001$ ;  $6.07 \pm 0.02$  mmol/l;  $p = 0.001$ ). Variations in TC were observed across groups, ( $p = 0.0001$ ). HDL-C was highest in AH-MetS, ( $1.51 \pm 0.07$  mmol/l) and differed with mean value of DM-MetS, ( $1.23 \pm 0.04$  mmol/l,  $p = 0.01$ ) only. Following the pattern of TC, LDLC was lowest among DM-MetS, ( $2.75 \pm 0.06$  mmol/l) and highest among CKD-MetS, ( $3.65 \pm 0.28$  mmol/l,  $p = 0.001$ ) with variations across groups, ( $F = 6.35$ ;  $p = 0.0004$ ).

**Conclusion:** Dyslipidemia profile varied with associated disorders. Presence of MetS is not a strong factor for development of lipid disorders in the study population.

**KEYWORDS:** metabolic syndrome, diabetes, chronic kidney disease, hypertension, lipid profile

### INTRODUCTION

The insulin resistance/metabolic syndrome (MetS) is characterized by the variable coexistence of hyperinsulinaemia, obesity, dyslipidaemia, and hypertension.[1, 2] Workers in the diabetes field have named the syndrome 'insulin resistance syndrome' in keeping with their view that the underlying factor of the syndrome is insulin resistance while obesity is an exacerbating factor [3, 4], (DeFronzo and Ferrannini, 1991; Balkau and Charles, 1999). MetS is comprised of a combination of risk factors for coronary heart disease, as well as for diabetes, fatty liver, and includes dyslipidaemia of the high-triglyceride-low high density lipoprotein cholesterol type and central obesity[5-7] [3, 4, 5]. Alone each component of the cluster conveys increased cardiovascular risk, but in combination, they become much more powerful [8], (Kaplan, 1989). The combination of cardiovascular risk factors and diabetes elevates risk more than the accumulation of risk factors without diabetes (Stamler *et al*, 1993) [9]. The metabolic syndrome with normal glucose tolerance identifies the subject as a member of a group at a very high risk of future diabetes [10], (WHO, 1999). The metabolic syndrome develops slowly over time, often over a course of 20 years or more. Individuals over the age of 35 years have one in three chances of having the syndrome without knowing it[11] (Mykkanen *et al*, 1993). This is because its signs and symptoms which include weight gain; rising blood pressure, blood lipids and blood glucose, and feeling of sluggishness are also

## Lipid Profile in Metabolic Syndrome Associated with Diabetes, Hypertension, Chronic Kidney Disease and Apparent Health.

accepted signs of aging. The syndrome shares common features with type 2 diabetes, Cushing's syndrome and growth hormone deficiency [12-13], ( Alexander *et al*, 2003; Summer and Nelson, 2005).

Health conditions associated with MetS include diabetes, hypertension and chronic kidney disease and it also occurs in apparently healthy individuals. Lipid disorders are major diagnostic feature of MetS. However, lipid profile in different health conditions associated with MetS is not yet well understood especially among blacks. This is necessary in view of the "TG paradox" seen in blacks whereby normal triglyceride values were recorded in the presence of insulin resistance [14]<sup>[6]</sup>. Applying the same criteria in the treatment of lipid disorders in MetS associated with different health conditions may be misleading if there are differences. Several studies of different ethnic groups suggest different patterns of clustering of the metabolic disorders in metabolic syndrome [15-18], (Meigs *et al*, 1997; Gray *et al*, 1998; Chen *et al*, 1999; Sakkinen *et al*, 2000). In this study, lipid profiles in MetS associated with DM, HBP, CKD and AH were examined.

### MATERIALS AND METHODS

The study was a cross-sectional study done between March and August. A total of 540 patients were recruited for this study. This was made up of 183 type 2 diabetics, 136 hypertensives, 84 renal failure patients and 137 apparently healthy subjects recruited from the immediate community including Hospital staff. The patients were all registered in the clinics of the University of Nigeria Teaching Hospital, Enugu. Patients visiting the clinics for the first time, those aged less than 35 years and those who had broken their fast at the time of sample collection were left out. Left out also were those on lipid lowering drugs and pregnant and lactating mothers. The apparently healthy subjects were men and women of age 35 years and above who at the time of sample collection were not registered in any clinic for treatment or receiving any medication. They have not had any major illness in the last six months and were not complaining of any discomfort that might be suspected to be illness at the time of sample collection. The lower age limit was chosen to coincide with the age above which the metabolic syndrome is most prevalent [19], (Mykkanen *et al*, 1993).

Ethical approval was obtained from the Hospital Ethic Committee of the University of Nigeria teaching Hospital and written informed consent was obtained in each case before sample collection.

Fasting blood samples, (3ml), were collected from subjects between 8 and 11 am each day using standard methods [20]<sup>7</sup> and allowed to clot at room temperature. The sample was spun and sera harvested and used for the determination of triglyceride, (TG), total cholesterol, (TC), and high density lipoprotein cholesterol, (HDL). Low density and very low density cholesterol values were calculated using Friedwald formula [21]<sup>[8]</sup>. The method of Buccolo and David [22]<sup>[9]</sup> was used in assay of TG, HDLC by the method of Allain *et al* [23]<sup>[10]</sup> and TC by the cholesterol oxidase method. Cromatest<sup>R</sup> Mono-reagent kits were used for the biochemical determinations.

Analyses of data were done with GraphPad prism version 2 statistical programme. MetS was diagnosed according to the NCEP-ATP 111 criteria [24]<sup>[11]</sup>.

### RESULTS

The study showed 135 (men 68, women 67) DM, 64 (men 26, women 38), HBP, 31 (men 20, women 11), CKD, and 52 (men 15, women 37), AH subjects had the MetS giving prevalence rates of 36.9 % (32.4, 42.9), 14.7 % (12.1, 17.1), 18.4 % (23.2, 13.4) and 37.9 % (22.0, 53.6) respectively. 38% of the subjects with the MetS had hypertriglyceridaemia while 66% of the subjects with hypertriglyceridaemia had the MetS. Corresponding figures for total hypercholesterolaemia and low HDLC were 5.0, 40, and 24 and 77% respectively.

Lipid profile of subjects with the MetS associated with DM, HBP, CKD and AH varied considerably and significantly (Table 1). CKD subjects had significantly higher mean value of TG than other subjects ( $2.65 \pm 0.16$  mmol/l;  $F = 11.4$ ;  $P = 0.0001$ ) while those of the other subjects did not differ significantly from each other, ( $p > 0.05$ ). The concentration of TC was lowest among the MetS subjects with DM, ( $4.4 \pm 0.11$  mmol/l) and highest among those with CKD, ( $6.07 \pm 0.02$  mmol/l;  $p = 0.001$ ). Significant variations were observed across the groups, ( $p = 0.0001$ ). HDL-C was highest in the AH-MetS subjects ( $1.51 \pm 0.07$  mmol/l) and differed significantly with mean value from DM-MetS subjects,  $1.23 \pm 0.04$  mmol/l, ( $p = 0.01$ ) but not with those of CKD-MetS and HBP-MetS subjects. Following the pattern of TC, LDLC was lowest among the DM-MetS subjects, ( $2.75 \pm 0.06$  mmol/l) and highest among the CKD-MetS subjects, ( $3.65 \pm 0.28$  mmol/l,  $p = 0.001$ ) with significant variations across the groups, ( $F = 6.35$ ;  $p = 0.0004$ ). VLDLC pattern followed that of TG; CKD-MetS subjects had higher values than others ( $1.11$  mmol/l;  $F = 11.78$ ;  $p = 0.0001$ ) followed by AH-MetS, DM-MetS and HBP-MetS ( $p = 0.001$ ). Among the male subjects, (Table 2), TG, followed the pattern in the general population. Significant difference in TC was recorded only between DM-MetS, ( $4.74 \pm 0.10$  mmol/l) and CKD-MetS, ( $5.78 \pm 0.16$  mmol/l)

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subjects, ( $p = .01$ ). HDLC was highest in the apparently healthy subjects but no significant difference was recorded among the groups, ( $p > 0.05$ ). No significant difference was recorded for LDLC between the groups while VLDLC showed considerable significant differences between only CKD-MetS and the other groups, ( $F = 18.60$ ;  $p = 0.0001$ ).

Among the female subjects, (Table 3), no significant difference in TG was recorded among the groups, ( $F = 2.68$ ,  $p > 0.05$ ). TC showed significant differences between the values for CKD-MetS, ( $7.10 \pm 0.26$  mmol/l) and the other groups, ( $4.97 \pm 0.09$ ,  $5.24 \pm 0.21$ ,  $5.10 \pm 0.27$  mmol/l respectively) only. HDLC varied only between HBP-MetS and AH-MetS subjects with apparently healthy subjects showing higher values, ( $1.55 \pm 0.10$  mmol/l) than the hypertension subjects, ( $1.21 \pm 0.05$  mmol/l;  $p = 0.01$ ). LDLC in line with the pattern recorded for TC in addition to that between HBP-MetS, ( $3.13 \pm 0.15$  mmol/l) and apparent health, ( $2.90 \pm 0.17$  mmol/l) ( $p = 0.01$ ). VLDLC showed no significant variations.

### DISCUSSIONS

Dyslipidaemia in MetS varied appreciably with associated disorders. Among the criteria in the definition of metabolic syndrome is dyslipidaemia of the high triglyceride, low high density lipoprotein type. This combination is the hallmark of the metabolic syndrome and risk factor for ischaemic heart disease [25]<sup>[12]</sup>. With hyperinsulinaemia, hepatic output of triglyceride-rich very low density lipoprotein, (VLDL) increases. Cholesterol ester transfer protein, (CETP), transfers cholesterol from high density lipoprotein (HDL) in exchange for triglycerides. As a result, the concentration of HDL-C falls while that of triglycerides increases. In addition, there is a shift in the LDL particle diameter to smaller and denser LDL-cholesterol fractions termed 'pattern B particles', which are the most potent and damaging kind. They adhere to and penetrate the vascular wall more easily, exert a pro-coagulant effect by causing increased production of PAI-1 and are oxidized more easily [26,27]<sup>[13,14]</sup>. Oxidized LDL particle combine with macrophages to form foam cells and build atheromatous plaques. Dyslipidaemia is most severe in CKD-MetS and involves mainly TG and TC which values were significantly higher in CKD-MetS than in other combinations. The increase in lipids in CKD-MetS could be because in renal failure, low molecular weight proteins are lost. The body responds by increasing the production of higher molecular weight proteins that include mainly VLDL and LDL. These contain mainly TG and cholesterol and their values are raised in CKD-MetS more than in other conditions. HDLC correlates inversely with the TG and this is said to be highly atherogenic [28]<sup>[15]</sup>. Low HDL-C levels and high triglyceride levels are an independent risk factor for cardiovascular disease [29]<sup>[16]</sup>. Cholesterol ester transfer protein, (CEPT), transfers cholesterol from HDL to VLDL in exchange for TG. Hence serum TG increases while HDLC decreases.

Hyperlipidaemia of the high TG-low HDLC type is the hallmark of MetS and it predisposes to ischaemic heart disease [30, 31]<sup>[12, 17]</sup>. Changes in triglycerides and HDL-C play an important role in the development of MetS, insulin resistance, and are major mediators in the atherogenic process. In addition, studies have identified the lipid profile as an insulin resistance and cardiovascular risk marker [32 -34]<sup>[18-20]</sup>. It is difficult to evaluate the predictor potential of raised TG and low HDLC in MetS. This is due to the fact that the cutoff points for these parameters in MetS lie within their reference ranges; that is to say that values within the reference range could still predict MetS in an individual. In this study only 38% of the subjects with the MetS had hypertriglyceridaemia while 66% of the subjects with hypertriglyceridaemia had the MetS. Corresponding figures for total hypercholesterolaemia and low HDLC were 5.0, 40, and 24 and 77% respectively. It would appear that the development of the MetS is not a strong factor for the development of lipid disorders in the study population. The reverse, however, appear more likely. This agrees with the view that hypertriglyceridaemia causes the misdiagnosis of MetS in blacks [35 -37]<sup>[21-23]</sup>. Previous studies have also recorded that only a fraction of blacks with metabolic syndrome ever meet the TG threshold [14, 34,38]<sup>[6, 24 -,25]</sup>

Insulin resistance appears to be the primary mediator of metabolic syndrome and T2D and it is also seen in hypertension. Lower values for TG were recorded for DM-MetS, HBP-MetS subjects than for AH-MetS subjects. Dyslipidaemia in MetS was more severe in men than women. The variation in TG was less pronounced in women than men and vice versa for TC. Since apparently healthy subject also have the MetS, the syndrome may not be a consequence of the metabolic disorders associated with it but rather their causative factor. The individual components of the MetS produce adverse clinical consequences leading to organ damage. For example, adipose tissue dysfunction lead to release of pro-inflammatory cytokines that promote insulin resistance. Insulin resistance is a causative factor of several metabolic disorders.

### CONCLUSION

Dyslipidemia profile varied with associated disorders. Presence of MetS is not a strong factor for development of lipid disorders in the study population. Subjects with dyslipidaemia and/or these complications, especially CKD, should also be screened and treated for dyslipidaemia to prevent enhanced cardiovascular events.



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### AUTHORS' CONTRIBUTIONS

ISIO designed the study and drafted the manuscript. BNE, CO, NM participated in the sample collection and analysis; EC and AE participated in the identification of subjects and sample collection. BNE, ENI and ON reviewed the manuscript. All authors read and approved the final version of the manuscript.

### REFERENCES

- 1) Reilly MP, Rader DJ. *The metabolic syndrome: more than the sum of its parts?*
- 2) *Circulation* 2003; 108:1546–51.
- 3) Ayyobi AF, Brunzell JD. Lipoprotein distribution in the metabolic syndrome, type 2 diabetes mellitus, and familial combined hyperlipidemia. *Am J Cardiol* 2003; 92:27–33J.
- 4) De-Fronzo, R.A; Frrrannim, E; (1991). Insulin resistance: a multifaceted syndrome responsible for NIDDM, obesity, hypertension, dyslipidaemia and atherosclerotic cardiovascular disease. *Diabetes Care* 14 (3): 173 – 174.
- 5) Balkau, B; Charles, M.A; (1999). Comments on the provisional report from the WHO Consultation. European Group for the Study of Insulin Resistance, (EGIR). *Diab Med* 16(3): 442 – 443.
- 6) National Cholesterol Education Programme. 3<sup>rd</sup> Report of the NCEP on Detection and treatment of high blood Cholesterol in Adults (Adult Treatment Panel 111): final report. *Circulation* 2002; 106: 3143 -3421.
- 7) Flegal, K.M; Caroll, M.D; Ogden, C.L; Johnson, C.L. Prevalence and trend in obesity among US adults 1999-2000. *JAMA* (2002); 288: 1723 – 1727.
- 8) Alexander, C.M; Landsman, T.B; Teutsh, S.M; Haffner, S.M.; National Cholesterol Education Programme, (NCEP) – defined metabolic syndrome, diabetes and prevalence of coronary heart disease among National Health and Nutrition Examination Survey, (NHANES) 111 participants age 50 years and older. *Diabetes* (2003); 52 (8): 1210 – 1214.
- 9) Kaplan, N.M; (1989). The deadly quartet: upper body adiposity, glucose intolerance, hypertriglyceridaemia and hypertension. *Arch Intern Med* 149: 1514 – 1520.
- 10) Stamler, J; Stamler, A; Neaon, J.D; (1993). Blood pressure, systolic and diastolic and cardiovascular risk; US Population Data. *Arch Intern Med* 153: 598 – 615.
- 11) World Health Organization (1999). Definition, diagnosis and classification of diabetes mellitus. Geneva, WHO department of Non-Communicable disease Surveillance
- 12) Mykkanen, L; Kuusisto, J; Pyoralas, K; Laakso, M; (1993). Cardiovascular risk factors as predictors of type 2 (non-insulin dependent) diabetes mellitus in the elderly subjects. *Diabetologia* 36: 553 – 559.
- 13) Alexander, C.M; Landsman, T.B; Teutsh, S.M; Haffner, S.M; (2003). National Cholesterol Education Programme, (NCEP) – defined metabolic syndrome, diabetes and prevalence of coronary heart disease among National Health and Nutrition Examination Survey, (NHANES) 111 participants age 50 years and older. *Diabetes* 52 (8): 1210 – 1214.
- 14) Summer, S.A; & Nelson, D.H; (2005). A role for sphingolipids in producing the common features of type 2 diabetes, metabolic syndrome X and Cushing's syndrome. *Diabetes* 53(30): 591- 602.
- 15) Sophia S.K, Yu, Darleen C Casttilo, Amber B Courville, Anne E Summer. The Triglyceride Paradox in people of African descent. *Metab Syndr Relat Disord.* (2012);10(2): 77 – 82
- 16) Meigs, J.B; D'Agostino, R.B.S; Wilson, P.W; Gupples, L.A; Nathan, D.M; Singer, D.E; (1977). Risk variable clustering in the insulin resistance syndrome: the Framingham Offspring Study. *Diabetes* 46 (10): 1594 – 1600.
- 17) Gray, R.S; Fabsitz, R.R; Cowan, L.D; Lee, E.T; Howard, B.V; Savage, P.J; (1998). Risk factor clustering in the insulin resistance syndrome: The Strong Heart Study. *Am J Epidemiol* 148:869 – 878.
- 18) Chen, W; Srinivasan, S.R; Elkasabany, A; Berenson, G.S; (1999). Cardiovascular risk factor clustering features of insulin resistance syndrome, (Syndrome X) in a biracial (blck-white) population of children, adolescents and young adults: The Bogahisa Heart Study. *Am J Epidemiol* 150: 667 – 674.
- 19) Sakkinen, PA, Wahl, P, Cushman, M, Lewis, MR, Tracy, RP, (2001). Clustering of procoagulation, inflammation and fibrinolysis variables with metabolic factor in insulin resistance syndrome. *Am J Epidemiol* 152: 897 – 907.
- 20) Mykkanen, L; Kuusisto, J; Pyoralas, K; Laakso, M; (1993). Cardiovascular risk factors as predictors of type 2 (non-insulin dependent) diabetes mellitus in the elderly subjects. *Diabetologia* 36: 553 – 559.
- 21) Dacie, J.V; Lewis, S.M; (1975). Practical Haematology. 5<sup>th</sup> Edition ELBS and Churchill Livingstone. P. 1-20
- 22) Friedewald, W.T; Levy, R. I; Fredrickson, D.S. Estimation of the concentration of low density lipoprotein cholesterol without the use of the preparatory ultracentrifuge. *Clin Chem* . (1972);18: 499-502

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- 23) Buccolo, G; David, H. Quatitative determination of serum triglycerides by the use of enzymes. *Clin Chem* (1973); 19(4): 476 – 482.
- 24) .Allain, C.C; Poon, L.S; Clau, C.G.S; Richmond, W; Fu, P.D. Enzymatic determination of total cholesterol. *Clin Chem* (1974); 20(3): 470 – 475.
- 25) National Cholesterol Education Programme (NCEP).Expert Panel on Detection, Evaluation and Treatment of High Blood Cholesterol in adults, (Adult Treatment Panel 111) final report. *Circulation* (2002); 106 (25): 3143 – 3421.
- 26) Dows, J.R. Clerafeld, M. Weiss, S. Whitney, E. Shapiro, D.R. Beere, P.A. Langendorf, A. Stein,
- 27) Libby, P. Current concepts of the pathogenesis of the acute coronary syndrome. *Circulation* (2001); 104 (3): 365 – 372.
- 28) Krentz, A.J. Lipoprotien abnormalities and their consequences for patients with type 2 diabetes. *Diab Obes Metab* (2003); 5: 519 – 527.
- 29) Choi SH and Ginsberg HN. Increased very low density lipoprotein (VLDL) secretion, hepatic steatosis, and insulin resistance. *Trends in Endocrinol Metab.* 22:353-363
- 30) Pedroza-Tobias, A., Trejo-Valdivia, B., Sanchez-Romero, L.M. *et al.* Classification of metabolic syndrome according to lipid alterations: analysis from the Mexican National Health and Nutrition Survey 2006. *BMC Public Health* (2014); 14, 1056
- 31) Jeppesen, J; Hein, H.O; Saudicani, P; Cyntelberg, F. High triglyceride and low high density lipoprotein cholesterol and blood pressure and risk of ischaemic heart disease. *Hypertension* (2000); 36: 226 – 229.
- 32) Mazza A, Tikhonoff V, Schiavon L, Casiglia E: Triglycerides + high-density-lipoprotein-cholesterol dyslipidaemia, a coronary risk factor in elderly women: the CARdiovascular Study in the ELderly. *Intern Med J.* (2005); 35 (10): 604-610.
- 33) McLaughlin T, Reaven G, Abbasi F, Lamendola C, Saad M, Waters D, Simon J, Krauss RM: Is there a simple Way to identify insulin-resistant individuals at increased risk of cardiovascular disease?. *Am J Cardiol.* (2005); 96: 399-404
- 34) McLaughlin T, Abbasi F, Cheal K, Chu J, Lamendola C, Reaven G: Use of metabolic markers to identify overweight individuals who are insulin resistant. *Ann Intern Med.* (2003); 139 (10): 802-809.
- 35) Giannini E. Testa R. The metabolic syndrome: All criteria are equal, but some criteria are more equal than others. *Arch Intern Med.* 2003; 163:2787–2788.
- 36) Osei K. Metabolic syndrome in blacks: Are the criteria right? *Curr Diab Rep.* 2010; 10:199–208.
- 37) Sumner AE. Zhou J. Doumatey A, et al. Low HDL-cholesterol with normal triglyceride levels is the most common lipid pattern in West Africans and African Americans with metabolic syndrome: Implications for cardiovascular disease prevention. *CVD Prev Control.* 2010; 5:75–80.
- 38) Ervin RB. Prevalence of metabolic syndrome among adults 20 years of age and over, by sex, age, race and ethnicity, and body mass index: United States, 2003–2006. *Natl Health Stat Report.* 2009:1–7.
- 39) Park YW. Zhu S. Palaniappan L, et al. The metabolic syndrome: prevalence and associated risk factor findings in the US population from the Third National Health and Nutrition Examination Survey, 1988–1994. *Arch Intern Med.* 2003; 163:427–436.

**Table 1. Showing the values (mmol/l), (Mean ± SEM) of the lipid profiles of MS subjects with DM, (DM-MS), hypertension, (HBP-MS), chronic kidney disease, (CKD-MS) and apparent health, (AH-MS).**

	DM-MS (n= 135)	HBP-MS (n= 64)	CKD-MS (n= 31)	AH-MS (n= 52)	F; p-values.
Triglycerides(TG)	1.87 ± 0.04	2.01 ± 0.05	2.65 ± 0.16	2.04 ± 0.06	11.4; 0.0001
Total Cholesterol (TC)	4.44 ± 0.11	5.09 ± 0.16	6.07 ± 0.22	5.16 ± 0.18	15.15; 0.0001
HDLC	1.23 ± 0.04	1.30 ± 0.05	1.23 ± 0.05	1.51 ± 0.07	4.79; 0.0029
LDLC	2.75 ± 0.06	3.09 ± 0.15	3.65 ± 0.28	2.86 ± 0.18	6.35; 0.0004
VLDLC	0.88 ± 0.02	0.83 ± 0.15	1.11 ± 0.05	0.93 ± 0.03	11.78; 0.0001

**Table 2. Showing the values (mmol/l), (Mean ± SEM) of the lipid profiles of male MS subjects with DM, (DM-MS), hypertension, (HBP-MS), chronic kidney disease, (CKD-MS) and apparent health, (AH-MS).**

	DM-MS (n= 68)	HBP-MS (n= 26)	CKD-MS (n= 20)	AH-MS (n= 15)	F; p-values.
Triglycerides(TG)	1.76 ± 0.04	1.77 ± 0.06	2.31 ± 0.10	1.72 ± 0.05	17.8; 0.0001
Total Cholesterol TC	4.74 ± 0.10	4.72 ± 0.16	5.78 ± 0.16	5.22 ± 0.11	2.75; 0.029

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HDLC	1.18 ± 0.05	1.42 ± 0.09	1.29 ± 0.08	1.44 ± 0.99	2.59; 0.056
LDLC	2.96 ± 0.22	2.64 ± 0.14	3.15 ± 0.21	2.91 ± 0.12	0.41; 0.747
VLDLC	0.79 ± 0.02	0.830± 0.03	1.07 ±0.06	0.77 ± 0.02	18.6; 0.0001

**Table 3. Showing the values (mmol/l), (Mean ± SEM) of the lipid profiles of female MS subjects with DM, (DM-MS), hypertension, (HBP-MS), chronic kidney disease, (CKD-MS) and apparent health, (AH-MS).**

	DM-MS (n= 67)	HBP-MS (n= 38)	CKD-MS (n= 11)	AH-MS (n= 37)	F; p-values.
Triglycerides(TG)	1.87 ± 0.07	1.69 ± 0.07	1.77 ± 0.06	1.82 ± 0.06	2.68; 0.0491
Total Cholesterol TC	4.97 ± 0.09	5.24 ± 0.21	7.10 ± 0.26	5.10 ± 0.27	11.79; 0.0001
HDLC	1.26 ± 0.05	1.21 ± 0.05	1.25 ± 0.04	1.55 ± 0.10	4.13; 0.0078
LDLC	2.64 ± 0.09	3.13 ± 0.15	3.80 ± 0.16	2.90 ± 0.17	15.96; 0.0001
VLDLC	0.88 ± 0.02	0.75 ± 0.03	0.80 ±0.02	0.83 ± 0.02	2.648; 0.5450



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## Maintaining the State Cadastera of the Territories on the Base of Remote Sensing Materials



Olimjon R. Allanazarov<sup>1</sup>, Sanjar I. Khikmatullaev<sup>2</sup>

<sup>1</sup> Associate Professor, PhD, Tashkent State Technical University.

<sup>2</sup> Lecturer, National Research University "TIIAME".

**ABSTRACT:** This article presents the stages of creating topographical bases for maintaining state cadastres in the Tashkent region, taking space photos, taking aerial photos, performing geospatial linking, vectoring, and creating electronic digital maps. At the same time, scientific research such as filling the attributes of electronic digital cards and comparative analysis of space photo download sources has been reflected.

**KEYWORDS:** State cadastres, geodatabase, thematic layers, geoinformation systems, aerial photographs, satellite, space, drone, airplane, spectrum, Landsat 8, orthophotoplane.

### INTRODUCTION

Currently, remote sensing is carried out using aerial methods using aircraft and satellites. Also, in remote sensing, not only photographic films, but also digital cameras, scanners, videos, radar and thermal sensors are used. In the past, remote sensing was limited to the use of the visible part of the electromagnetic spectrum, the part of the spectrum that is invisible to the human eye can now be used with the help of spectral filters, photo films and other types of sensors. Also, the view of the earth was applied to practice and to solve life problems, for example, we can cite air reconnaissance during World War II. Aerial photographs provided the opportunity to observe the location of the enemy's army quickly and more safely than observation from the ground. Aerial photographs allowed military maps and information about strategic locations to be updated quickly and with relative accuracy.

Remote sensing is a complex of disciplines that includes aerial, space photography, image processing and interpretation, photogrammetry, structural metrics, as well as space geography and monitoring. The main area of interaction is the creation of topographic and thematic maps.

Nowadays, remote sensing is carried out from the air by airplanes and with the help of satellites. Digital cameras, scanners, video images, radar and thermal sensors are also used in remote sensing. Remote sensing is a field that requires fast, accurate and new data collection and is widely used in environmental management.

In addition, satellite technologies and the creation of multi-spectral sensors have further expanded the possibilities in this field, with the help of these technologies, it is possible to obtain information about the environment in very large areas of the earth, which is not visible to the human eye.

### RESEARCH METHODOLOGY

Nowadays, remote sensing is widely used in environmental management, an area where fast, accurate and new data collection is required. Satellite technologies and the creation of multi-spectral sensors have further expanded the possibilities, with the help of these technologies it is possible to obtain information about the environment from very large areas of the earth that are invisible to the human eye. In their scientific research, the researchers conducted studies on the creation of cadastral maps of state cadastral objects and the formation of a geodatabase based on remote sensing materials.

Zero meridian starting from London) and correspond to 10N, 11N, 12N and 13N (N-North (North)) zones of the Republic of Uzbekistan (Fig. 1).

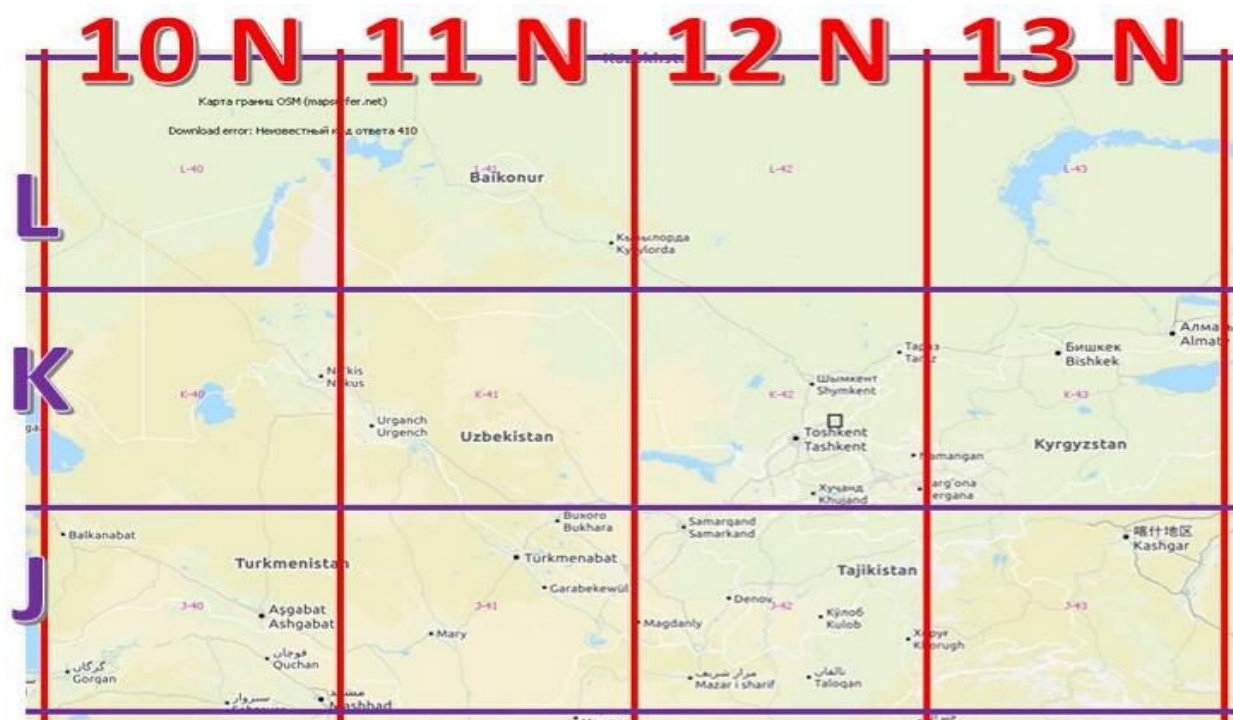


Figure 1. Classification of the Republic of Uzbekistan by geographical zones

Zones accept values in a rectangular coordinate system and generally form a zoned coordinate system. In addition, in the process of graphing, lines J, K and L correspond to the territory of the Republic of Uzbekistan. Choosing a zone and coordinate system is important when creating a geodatabase. When creating "Class set" it was required to select the area where the research was conducted and to define the zone accordingly.

This article focused on creating cadastral maps of state cadastral objects and forming a geodatabase based on remote sensing materials. In the study of cadastral objects, photos taken from various satellite ships were used.

In order to systematically maintain the state cadastre of the regions, an independent researcher has developed recommendations for the formation of the existing 21 state cadastres in a step-by-step cross-section of scales, in which, initially, it is envisaged to form a general situation of all state cadastres at the state level at a scale of 1:100,000, and at the second stage, 1 per region A scheme for the formation of a geodatabase on a scale of 1:10,000 and a scale of 1:2,000 at the district level was developed (Fig.2).

On the basis of this scheme, during the formation of cadastral objects at different scales, purposeful service filtration is established. For example, a specified task level was shown to perform query analytics in interactive service delivery to the government. **Analysis and results.** The method of sensing from space means scanning the earth in spectrum rays from 3 types to 11 types with the help of spaceships (sputnik). Aerial sensing means scanning the earth in spectrum rays from 3 types to 11 types with the help of remotely controlled devices (drones), airplanes and balloons (Fig. 2).

According to the analysis presented in Figure 1, the researchers analyzed the spatial data obtained from space and air, and carried out scientific research on qualitative and quantitative indicators. The focus of the study was the comparison of the image taken by the spacecraft with the image taken by the drone, and the result shown in Figure 2 was reflected. The height of the devices is averaged.

Researchers have improved the methods of creating cadastral maps based on raster data with 3 types of spectrum rays obtained by space probe method.

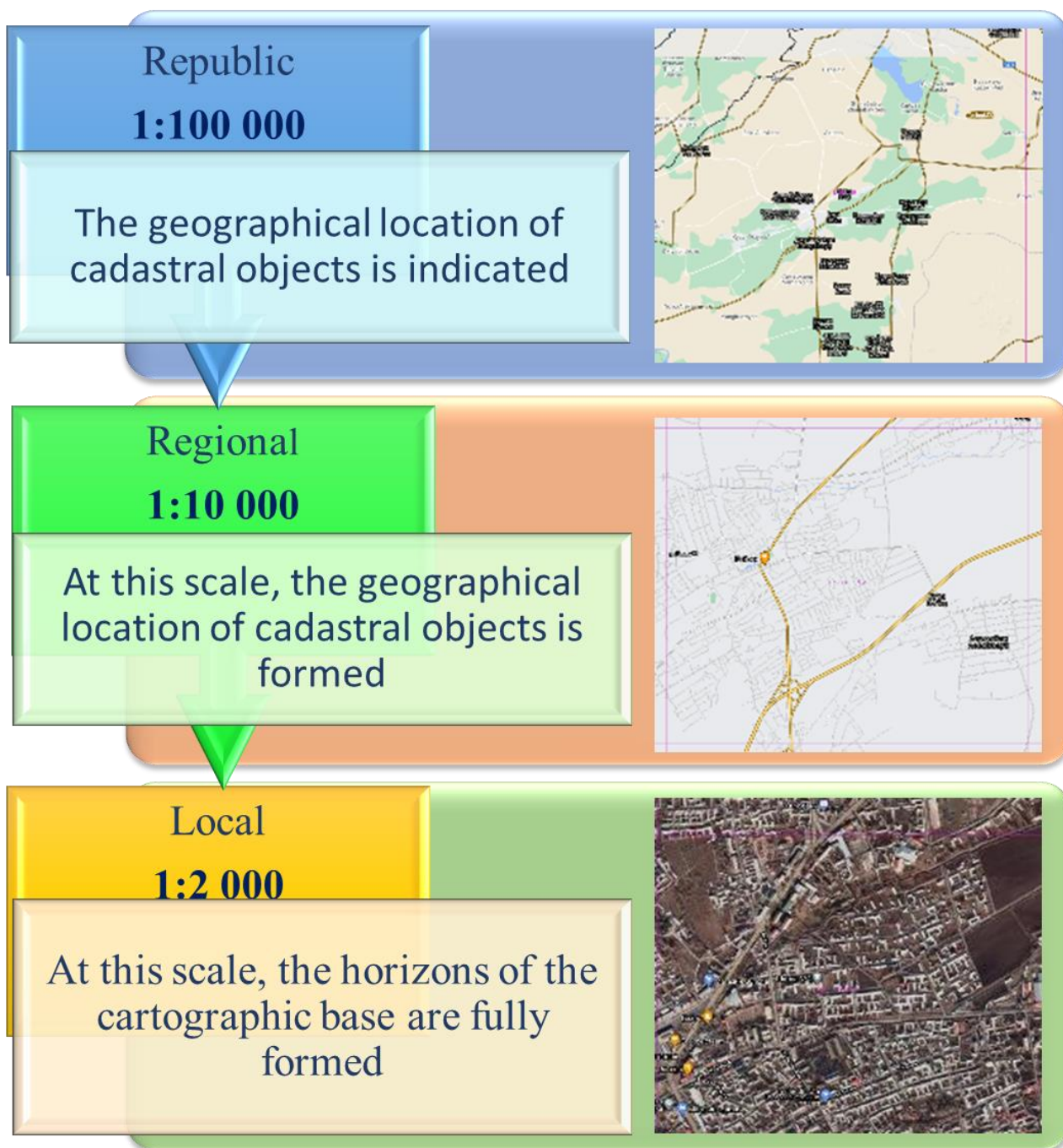


Figure 2. Scheme of formation of geodatabase at different scales

### CONCLUSIONS AND SUGGESTIONS

In order to systematically maintain the state cadastre of the regions, the researchers developed recommendations for the formation of the existing 20 state cadastres in a step-by-step section of scales. :2000 scale geodatabase formation scheme was developed (Fig. 3).

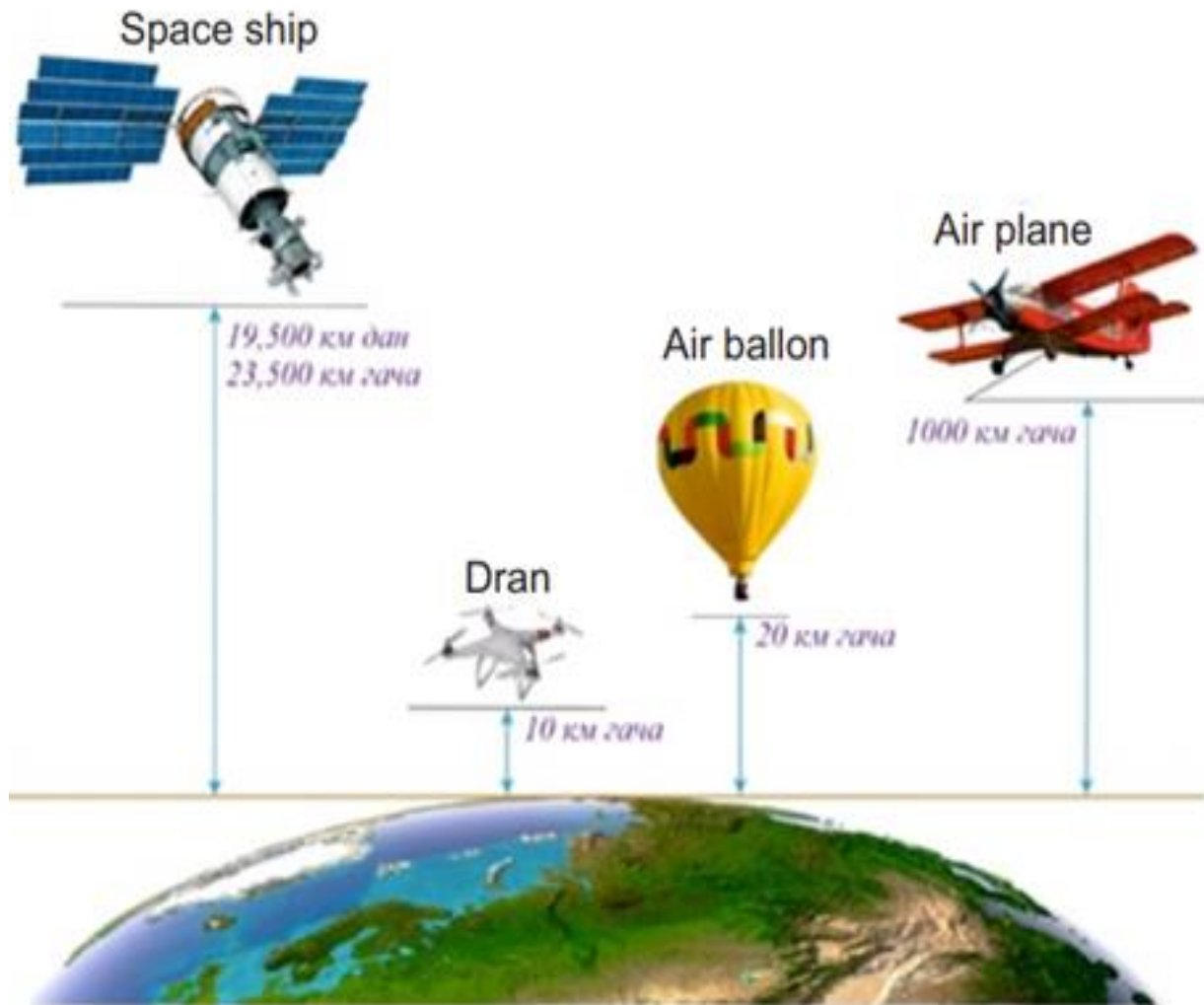


Figure 3. Interval distances in remote sensing of the earth

According to the scientific research carried out by the researchers, it was found that geographic visualization works are being carried out with the help of "SAS Planeta" program in the maintenance and formation of state cadastres of the regions. In addition, as a result of research, it became clear that "SAS Planeta" program was used by system organizations since 2012, and "Google Earth" program was used before that. "SAS Planeta" software was analyzed in comparison with "Google Earth" software. According to the results of the analysis, it is possible to geospatially link the space images by manually entering the coordinate values and downloading a small piece of the territory, allowing remote study of the territory using space photographs in the Google Earth program. In addition, Google Earth is the only software capable of visualizing space photos with archival data from years ago (Fig.4).



Figure 4. Spatial data analysis from space and air

This option is not available in the "SAS Planeta" program. But it provides the opportunity to fully download the research area and geospatially link the space photos based on an automated system. For this reason, "SAS Planeta" software has been approved and introduced by production organizations. Table 1 shows the analytical data on the comparative comparison of the software.

Table 1

No	Criteria	Google Earth (1)	SAS Planet (2)	Choice
1	Download the program	from the Internet	from the Internet	1 and 2
2	Using the program	Free	Free	1 and 2
3	Download scale	By working window extent	According to the specified threshold	2
4	Learning over the years	Available	Not available	1
5	Get coordinate values	Available	Available	1 and 2
6	Define the territory as a whole	Not available	Available	2
7	Download area rounding	Not available	Available	2
8	Geospatial linking of cosmography	Not available	Available	2
9	Cost of using space data	1	22	2
	<b>Total:</b>	<b>Google Earth</b>		<b>4 (1)</b>
		<b>SAS Planet</b>		<b>8 (2)</b>



## Maintaining the State Cadastera of the Territories on the Base of Remote Sensing Materials

Planet program is considered the most effective method in maintaining the state cadastre of territories. Therefore, this software is widely used by relevant official organizations for creating and forming cadastral maps of medium and small scale in the geodatabase. As an innovation by the researchers, he applied his recommendations to production organizations on the formation of large-scale cadastral maps in the geodatabase.

### REFERENCES

- 1) Abdullayev T.M., Inamov A.N. Diagnosis of spatial photo errors in geophysical connection // Uzbekistan the ground magazine. Tashkent 2020, issue 1, p. 23-26
- 2) Andy Mitchell. GIS analysis. - ESRI (California) 2005 - 238 p
- 3) Allanazarov O.R. Geographical information systems (GIS): classes, types and contact objects state in the cadastre apply roads // Geographical in studies cartographic of the methods use. - T., 2011. 73-76 p
- 4) Allanazarov O.R., Safarov E.Yu., Prenov Sh.M. About application of geoinformation in the education system and communication objects of the state cadastre // International journal of innovations in engineering research technology (IJERT) ISSN: 2394-3696, India, 2018, 18-21 p.
- 5) Inamov A.N., Mirjalolov N.T. GeoGIS program using artificial to the companion connection and GPS recordings execution // Nauchnyy journal, Internauka #14(48) - Moscow 2018. 63-65 p.
- 6) Narbaev, S., Abdurahmanov, S., Allanazarov, O., Talgatova, A., Aslanov, I. Modernization of telecommunication networks on the basis of studying demographic processes using GIS. E3S Web of Conferences, 2021, 263, 04055.
- 7) Inamov A.N., Mirjalolov N.T. Electronic digital cards make up styles improvement // Scientific journal, Internauka №15(49) - Moscow 2018. 87-88 p.
- 8) Islamov He.P., Inamov A.N. NSS receivers from modern GPS receivers' advantages and possibilities // Nauchnyy journal, Internauka No. 3(9) - Moscow 2018. 241-264 p.
- 9) S.Abdurakhmanov, M.Nazarov, O.Allanazarov, M.Yakubov, N.Shamsieva. Review of methodological issues of application of geographic information systems in service maps and their compilation, E3S Web of Conferences. E3S Web Conf. Volume 284, 2021.



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## The Issue of Ethnic Formation of the Population of the Southern Regions of Uzbekistan in the Works of B.Kh.Karmisheva



**Amirbek Tagbayev**

Researcher, Tashkent State University of Oriental Studies, Uzbekistan

**ABSTRACT:** It is known that the territory of Uzbekistan is a developed region, preserving its autochthonous basis as a result of long-lasting historical and ethnic processes. The socio-cultural basis of the Uzbek people formed in this ancient region was created in the distant past and has followed its own historical path. Undoubtedly, the formation of the Uzbek nation did not take place within the framework of one country or a small region, but within the framework of the vast space in which the Uzbek people historically formed and developed - the Central Asian region.

**KEYWORDS:** natural-geographic, ethnic dialogue, toponyms, oronyms, hydronyms and anthroponyms, Kungiro, Mangit, Kipchak.

### INTRODUCTION

In the XIX-early XX centuries, the Uzbek nation was divided into separate regions with large states - Bukhara Emirate, Khiva and Ko'kan Khanates, but the political boundaries between them were divided by the Uzbek people. Historically, it has not been able to have a serious impact on mutual ethnic-cultural relations [1. 56]. However, ethnic processes took place in different historical and ethnographic regions in a unique way under the influence of natural-geographic, socio-economic, ethno-cultural factors. In the XIX-early XX centuries, the ethnic and cultural boundaries in South Uzbekistan (Surkhan-Sherabad Valley), which is historically located within the framework of Uzbek, Tajik, Turkmen and Afghan ethnic dialogue, are two (multiple) changing and permeable having character [1. 61]. This process was considered above on the example of the population's ethnic composition, anthropological, linguistic characteristics, the uniqueness of ethnic history, and economic and cultural traditions. Also, the field-ethnographic materials, the author's personal observations and the comparative analysis of the existing scientific materials in the ethnological aspect showed that the diversity of the ethnic composition of the population, the clear differentiation of the ethnic components, the preservation of various ethnonyms, dialects and dialects in the early 19th-20th centuries were characteristic has been [1. 61]

Based on the features of the available ethnographic materials, the local-ethnographic groups in the Surkhan-Sherabad valley, as well as the ethnicity of all sub-ethnic components found among the Uzbek population, are uniquely settled in other historical-cultural regions of Uzbekistan, ethnic-cultural identity and is directly related to the descriptive characteristics of ethnic units and their formation processes [2].

### THE MAIN FINDINGS AND RESULTS

The phenomenon of geneology and seed breeding, which is one of the ethnic characteristics of the Uzbek people, and the analysis of its genesis and historical dynamics in a comparative aspect shows that it was formed on the basis of the order of division into clans preserved on the basis of patriarchal seed breeding in Turkic peoples. This situation is explained by the fact that many Turkic peoples - Kazakhs, Kyrgyz Karakalpaks, Turkmens and Bashkirs, as well as ethnic and ethnographic groups with their own ethnonyms within the Uzbek people, were formed in the form of pure ethnic or ethno-political associations, and also they It is manifested in the common name of the ethnoses.

The procedure for dividing the population of the studied region, which has a complex and diverse ethnic composition, into ancient local-territorial ethnic units, clans (generation, clan) that are not divided into clans on a general basis we can distinguish sub-ethnic components that have preserved and differ to a certain extent from the settled population with their economic and cultural characteristics.

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Examples of local-territorial units in the Surkhan-Sherabad Valley are Boysun, Machai, Kharduri, Vakhshivori, Sinachi, Ushori, Darbandi, Sairobi, Pashkhurti, Vandobi, which do not have their own ethnic name [2. 7], but are called by the name of the region where they live. In these ethno-local units, the phenomenon of linguistic bilingualism is often observed, that is, they speak both Uzbek and Tajik languages. Having their own geneonyms, they are formed in the form of internal divisions based only on toponyms, oronyms, hydronyms and anthroponyms, and are not based on the blood-breeding system. According to economic and cultural characteristics, agriculture and handicrafts occupy a leading place in their economy [1. 30-31]. Also, ethno-social units with a sedentary lifestyle - chigatays and households - have their own ethnic stereotypes. The ethnonym Chigatoy is used in the sense of the general name of the settled Uzbek and Tajik-speaking population of the region. At this point, it should be noted that Sart is synonymous with ethnonym in a certain sense, and it is one of the ethnic characteristics of the population of the region. Khojas also speak the Qarluq dialect of Uzbek and in some villages Uzbek and Tajik. Endogamous marriage prevails in family-marital relations. They are also divided into internal anthroponymic clans. In historical and ethnographic studies, they are recorded as a social stratum of the population [1. 35-36].

In the ethno-cultural environment of South Uzbekistan, the ethnic components that have preserved their order of division into clans and regions stand out. They are sub-ethnic groups with Qarluq, Oghuz and Kipchak components. These sub-ethnic components differ from each other due to their language, anthropological appearance, the uniqueness of their historical fate, the Turkic core of their origin, but they were part of different ethno-political associations in different historical periods.

Among the sub-ethnic groups with the Qarluq component, we can mention such sub-ethnic groups as Qarluqs, Khalajs, Chigils, Tukhsi, Yagmos, Argins, Arlots, Barlos and Jaloyir. It is known that in the early period they were engaged in animal husbandry and had a semi-nomadic lifestyle [1. 33-50]. But over time, they began to settle down, and agriculture began to take the leading place in their lifestyle. Their settlement in the later periods was caused by such factors as the short-season nature of the pastures limiting their practice of animal husbandry and, on the contrary, the productivity of irrigated agriculture. Also, the process of settlement of some of the herders living in the area directly adjacent to the villages inhabited by the settled population has accelerated [1. 219].

These sub-ethnic groups remained in the form of large or small ethnic structures until the beginning of the 20th century. Some of them left their names in toponymy, while others mixed with neighboring ethnic groups or moved to new places. For example, you can see that many settlements are named after ethnic groups. For example, Qarluq (village in Surkhandarya), Turkqishloq (Andijan), Dormon (Tashkent region) and others, sub-ethnic groups with a Kipchak component of the Uzbek people are ethnic units that began to settle in the Transoxiana regions from Dashti Kipchak at the beginning of the 16th century. They are a sub-ethnic group that has maintained a semi-sedentary lifestyle for a long time and carried out animal husbandry and agriculture together.

It is known that the uniqueness of this layer is that the Mongoloid characters are very noticeable in the racial structure, the language has a strong "jokhchilar" dialect and they call themselves "Uzbek". This layer consists of various large and small ethnic groups: Kungirots, Mangit, Kipchak, Naiman, Kenagas, Sarai, Khitan, Min, Yuz, Kirq, Katagan, etc. In these ethnic groups, the double ethnonym system, such as Uzbek-Kungirots, Uzbek-Kipchak, Uzbek-Katagon, is often used. Therefore, compared to other sub-ethnic groups, they call themselves by the Uzbek title, and this name serves as a factor that unites them both politically and socially [3].

Also, the main part of the ethnic components known in the historical sources of the 14th-19th centuries came to Transoxiana during the Shaibani Khan period. Many of them were not only part of the current Uzbek people, but also part of the Kazakh, Kyrgyz, and Karakalpaks. Many ethnic groups and their subdivisions were part of several Central Asian nations at the same time. Therefore, it is possible to notice the centuries-old kinship of the Uzbek, Kazakh, Kyrgyz and Karakalpak peoples without any difficulty [3. 10-11].

The Kongirots living in Surkhandarya and Kashkadarya oasis call themselves Uzbeks, those in Karagan (eastern Kazakhstan) call themselves Kazakh, and those in the Kongirots district of Karakalpakstan call themselves Karakalpak. Kangli, Mangit and Kenegas were also part of Uzbek, Kazakh, Kyrgyz and Karakalpaks. The Qatagons living in many districts of Uzbekistan and Northern Afghanistan call themselves Uzbeks, while the Qatagons living in the northern part of Issyk-Kul (Kyrgyzstan) call themselves Kyrgyz, and Kazakhs are a branch of the Kazakh clan. The repressors who is part of consider themselves Kazakhs. So, it is known from ethnographic materials that most of the sub-ethnic groups with Kipchak component have been absorbed into the modern Kazakh, Kyrgyz and Karakalpak peoples to varying degrees, and their ethnic characteristics have been studied in a comparative-historical aspect [3. 12-13].

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In the ethnic groups belonging to the above-mentioned ethnic strata, the dual ethnonym system, such as Uzbek-Kungiro, Uzbek-Kipchak, is often used. Therefore, compared to other sub-ethnic groups, they call themselves by the Uzbek title, and this name serves as a factor that unites them both politically and socially.

In many scientific literatures, the sub-ethnic groups bearing the name of this Uzbek title are considered as political associations. However, it should be noted that together with the political factor, the ethnic factor is also a decisive link. For example, we can see that the common aspects of their lifestyle, language, culture, and the closeness of their religious views were the factors that united them ethnically. Although these sub-ethnic groups had some differences with their unique household lifestyle, customs and linguistic features in the early 19th - 20th centuries, they kept the signs that prove that they are a single Uzbek people and called themselves the Uzbek name those named with

To add to the thoughts of B. Kh. Karmisheva, socio-economic changes took place in Central Asia in the 1st millennium BC. The development of productive forces, the emergence of cities and fortresses, the construction of large irrigation and defense structures indicate that a unique systematic view of urban processes is forming in this area. The ancestors of today's Uzbeks, Tajiks, and partially Turkmens who lived in ancient Bactria and Khorezm, formed in the III-II centuries BC, mainly spoke the eastern branch of Iranian languages and partially Turkicized Sak or Scythian languages. Until recently, there was no unified opinion in science on the issues of the formation period, place and history of the Central Asian race between two rivers, characteristic of the Uzbek people [4. 70]. One group of scientists believed that this race was formed 6-8 thousand years ago, the second group of experts said that it was formed 3 thousand years ago, and the third group of scientists believed that it was formed in the 16th century.

As a result of anthropological research, the authors proved that the formation of the race between the two rivers, based on rich anthropological data, began 2200-2300 years ago [4. 65]. A number of important periods in the formation of the Uzbek people have been listed in a number of scientific works. Among these, the Achaemenids, Alexander the Great, the Arab caliphate, and the Mongol invasion are mentioned. In fact, these invasions naturally had an impact on the culture, language, and lifestyle of the peoples of Central Asia, including Uzbekistan. However, it should be noted that these marches had very little impact on the eternal and ethnic history of local peoples.

From the anthropological point of view, they could not and could not fundamentally change the blood or genetics of the local people. Because aliens can never be superior to the local population, but they have become part of a large number of the local population, and the local population, in particular, in the territory of Uzbekistan, in all historical periods (according to special anthropological studies, the local people are superior to the alien population has always been superior.

The history of ethnic formation of the Uzbek people is mainly divided into three historical periods:

*The first period* includes the period from the first millennium BC to the VIII century AD. Mil. Avv. In the III-II centuries, the anthropological image of the modern Uzbek people began to form in the steppe regions of Central Asia. This is the opinion that has been widespread in science until recently, that is, the Central Asian race between the two rivers, characteristic of the Uzbeks, was first formed and spread along the banks of the Volga River and in the Urals as part of the Sarmatian tribes, or that a race was formed around Lake Baikal and became local demands to give up the thoughts that he spread his race to the population.

According to the research, it was found that the lifestyle of our ancestors, who were engaged in settlement and nomadism in Khorezm, Bactria, Sugdiyona, Parkana, Tokharistan, and Choch regions, were closely related to each other. The Massagets, who have lived in these regions for centuries, form the basis (ethnogenesis) of the Uzbek people. The conducted research shows that the anthropological appearance of the Uzbeks began to form at the end of the 1st millennium BC in the districts of the middle basin of the Syr Darya, i.e. Tashkent oasis, Fergana valley, partly in Khorezm, and in the Shymkent region, Yettisuv region of southern Kazakhstan was determined [4. 56-59].

In the III-II centuries BC, this population entered the central and southern regions of Central Asia in several directions. The results of this anthropological research correspond to the period of the migration of peoples known in written sources to the south and the collapse of the Greco-Bactrian state and the establishment of the Great Kushan Empire. The origins of Uzbeks belong to the ancient peoples of Sugd, Khorezm, Bactria, Parkana (Fergana) and Shosh, who were known as Sakas, Massagets, and Tokhars in ancient history and migrated to Central Asia and its surroundings in ancient time go back. At that time, they were called Sugdians, Khorezmians, Bactrians, Parkanians, and Tashkentians by the name of the place where they lived [5].

In the formation of Uzbek and Tajik as a nation, a number of Turkic-speaking peoples who moved between Jayhun and Sayhun in the late 1st millennium BC and early centuries AD and Persian-speaking people who moved from the south of Jayhun tribes, as well as the Chionite Kidarites and Hephtalites, who moved here from the north in the IV-V centuries, and finally, the Turkic-speaking people of the Western Turkic Khanate, who established their rule in Central Asia, play a major role.

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The second important period in the ethnic formation of the Uzbek people is the 9th-12th centuries. During this period, in Central Asia, including Uzbekistan, the appearance typical of modern Uzbeks was the main part of the local population. Previously, this process was connected only with the ethnic processes of the 11th and 12th centuries. It is considered appropriate to study the materials of this period found in the following years into two historical periods, i.e. IX-X and XI-XII centuries. In the 9th century, in the territory of Uzbekistan, according to the results of research, there were drastic changes in the anthropological appearance of the population. These changes were also observed as a result of archaeological excavations. The period of formation of Uzbeks as a nation was traced in science to the XI-XII centuries. The results of the research are the basis for saying that this process belongs to the 9th-10th centuries. The ethnic composition of Uzbeks enriched and improved in the 9th-12th centuries. At the end of the 10th century - the beginning of the 11th century, a number of people who moved to Transoxiana from Altai, Yettisuv and Eastern Turkestan together with the Karakhanids influenced the ethnic improvement of the population. During the Karakhanid era, the Qarluq-Chigil dialect, which is the basis of the Uzbek language, developed and rose to the level of written literature, and this dialect became the common language of the Uzbek people [1].

During the XVI-XVII centuries, the ethnic formation of Uzbeks continued, and they kept their clan-tribal names until the beginning of our century. They differed not only in terms of ethnicity, but also in terms of lifestyle and social structure. Some Uzbek tribes lived in a semi-settled state, preserving the nomadic economy and life traditions that did not transition to settled agriculture. They are also very different in terms of their language (dialect).

But Turkestan and the Uzbek khanates are beginning to be drawn into the vortex of world capitalist relations due to the Russian colonialism. During this period, the national awakening gradually began to sprout. A national bourgeoisie will emerge. Through their ideologues, the Jadids, they begin a serious struggle for national pride and feelings, traditional lifestyle and cultural development. The colonial policy of the Russian authorities is an obstacle to this process and limits the social performance of the Uzbek people on the world scale. The artificial division of the entire Central Asia into Turkestan Governorate, Khiva Khanate and Bukhara Emirate during the Russian colonial period was a serious obstacle to the national unity of the local people, including the Uzbeks [6].

### CONCLUSION

The nation, which is the highest wealth of society, contains eternal values and powerful potential. It serves as a very powerful factor for revealing potential, development and progress of our society. Human potential is the most active, most creative factor, which ensured the country's continuous progress through reforms and fundamental changes. In such processes, the true loyalty of each member of society to his homeland and its bright future, high political consciousness and completion of his task at the level of modern requirements, spiritual maturity and moral integrity are extremely important and decisive.

Thus, the ethnogenesis and ethnic history of the Uzbeks, who have lived in the southern regions of the region of Uzbekistan in the guise of the local indigenous population of Uzbekistan, are all ancient clans, tribes, peoples who lived between the Amudarya and Syrdarya and in those times are inextricably linked with past ethnic and cultural processes.

### REFERENCES

- 1) Karmysheva B.Kh. Essays on the ethnic history of the southern regions of Tajikistan and Uzbekistan. - M., 1976. - p. 56
- 2) Uzbek-Lokais of Southern Tajikistan. – Dushanbe, 1954. – p. 6
- 3) Karmysheva B.Kh. Dwellings of the Uzbeks of the Karluk tribes in the southern regions of Tajikistan and Uzbekistan // IOON AN of the Tajik SSR. - Dushanbe. 1956. Issue 10-11. – pp. 9-10
- 4) Doniyorov A.Kh. Ethnography, ethnogenesis and ethnic history of the peoples of Central Asia (Textbook). - Tashkent, 2011. – p. 70.
- 5) Jabbarov I.M. Ethnography of the Uzbek people. - Tashkent: Teacher, 1994. - p. 311.
- 6) Karmysheva B.Kh. Uzbeks-Lokais of South Tajikistan. TIIAE AN Tadjh.SSR. - Stalinabad. 1954. T.XXVIII. Issue 1. - p. 97 - 127.
- 7) Karmysheva B.Kh. "On the issue of ornaments from bird feathers among the peoples of Central Asia and Kazakhstan" // Ethnic history and traditional culture of the peoples of Central Asia and Kazakhstan. – Nukus, 1989.
- 8) Karmysheva B.Kh. Types of cattle breeding in the southern regions of Uzbekistan and Tajikistan (late XIX - early XX century) //SE. 1969. No. 3.
- 9) Odilov, B., & Karimov, N. Archaeological Research is an Important Source in the Study of Traditional Economic Activities of the Uzbek People (On the Example of Some Researchers of the Twentieth Century).

## The Issue of Ethnic Formation of the Population of the Southern Regions of Uzbekistan in the Works of B.Kh.Karmisheva

- 10) Karmysheva B.Kh. Uzbeks // Races and peoples. Yearbook "Modern Ethnic and Racial Problems". - M., 1984. Issue. fourteen.
- 11) Odilov, B. A., & Karimov, N. R. (2020). Analysis of Targeted Research in 20-30 Years of the XX Century. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(6), 8887-8893.
- 12) Karmysheva B.Kh. Uzbeks-Lokais of South Tajikistan. TIIE AN Tadjh.SSR. - Stalinabad. 1954.
- 13) Doniyorov, A. K. (2020). Problems of Ethnogenesis and Ethnic History of Uzbek People at the Current Stage. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(6), 8968-8974.
- 14) Khudoyberdiyevich, D. A. (2018). On general methodological, ethnopolitical and ethnocultural aspects of "Diaspora issues"(To the theoretical formulation of the problem and the ways of its practical solution). *ACADEMICIA: An International Multidisciplinary Research Journal*, 8(11), 68-74.
- 15) Khudoyberdiyevich, D. A., & Rakhmonqulovich, K. N. (2020). An incomparable book of a great scholar. *Bulletin Social-Economic and Humanitarian Research*, (6 (8)), 63-71.
- 16) Doniyorov, A. Kh. (1997). History of the development of ethnographic knowledge in Uzbekistan: (second half of the 19th century - 30s of the 20th century).



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## Measuring the Technical Efficiency of the Tunisian Collective Passenger Transport Companies Using Two-Stage DEA Model



Foued ALOULOU<sup>1</sup>, Imen GHANNOUCHI<sup>2</sup>

<sup>1</sup>Professor - researcher in transportation economics, Dept. economy Faculty of Economic sciences and management, Sousse University, Erriadh City-BP 4023.

<sup>2</sup>PhD student at the Faculty of Economic sciences and management, Sousse University, Researcher in transportation economics.

**ABSTRACT:** The aim of this study is to assess the level of technical efficiency and scale of Tunisian VCT companies, to determine the endogenous and exogenous factors that may explain their inefficiency and to analyze their economic implications on the performance of the sector.

Our approach is based on a two-stage DEA model. In the first stage, we used the classical DEA model in its two versions CRS and VRS under input orientation, to calculate the technical efficiency and scale score of each company throughout the study period. In the second step, these efficiency scores will be regressed on non-discretionary variables using a Tobit model. These models were applied to a sample of 117 observations consisting of panel data on the 13 public passenger transit companies covering the single urban network, over a period of 9 years from 2009 to 2017.

The results show considerable levels of total technical inefficiency in several companies. Only three firms are considered efficient. They reveal opportunities for improvement by decreasing the number of staff, the average age of buses, the occupancy rate and by adjusting the size and configuration of the network. The pure technical efficiency scores are higher and consistent. It indicates that the TCV industry has an increasing returns to scale, as well the existence of a mismatch problem between the company size and the managed traffic. Hence the need to merge small-sized business to achieve minimum efficiency.

Furthermore, this inefficiency can be explained by other exogenous factors that characterize the technical, demographic and economic environment in which the companies operate. This efficiency is all the higher as the population served is dense, the road network is well maintained, the motorization rate is low, the lines are of short or medium distances and the share of students is low.

**KEYWORDS:** technical efficiency, non-parametric DEA method, collective passenger transport, Tunisian public transport system, hydronic output, Tobit regression.

**JEL classification :** C14 ; D24 ; L91.

### INTRODUCTION

The evaluation of efficiency in the collective passenger transport sector has been the subject of several recent scientific publications while using a variety of methods for measuring and estimating efficiency scores. These studies seek to detect the main factors explaining performance gaps between collective passenger transport companies (CPT) and to orient the decisions of these companies and of the public authorities concerned towards best practices aimed at improving the efficiency of failing companies, and to strengthen the role of CPT in the implementation of a sustainable development strategy.

Transport experts have shown that the CPT by bus or metro or tram is the most sustainable way to minimize the negative externalities of private transport by private car and to achieve cost saving both in terms of fuel consumption as well as congestion, as the emission of CO<sub>2</sub> (Berechman, 1993).

However, in most countries over the world, this sector suffers from many financial and structural problems which threaten its efficiency and limit its opportunities for expansion and improvement. They reduced its attractiveness, destroyed its brand image as well the loss of its market share in favor of the private car (De Borger et al, 2002).

Therefore, a special attention must be given to this sector in order to better strengthen its efficiency and competitiveness, maintain its position on the market and to provide a public service essential to the mobility and urban accessibility of citizens.

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To achieve these objectives, it is first necessary to detect the different sources of the failure and identify the best operating practices in the public transport.

The efficiency study of this sector is thus necessary to provide the decision-makers with a dashboard for rational decision-making in terms of both resources allocation, network configuration and governance of CPT companies.

Economically speaking, this efficiency reflects the company's ability to fully use its inputs to produce the maximum of output at the lowest cost, or also to provide a certain level of output while minimizing its inputs (Atkinson and Cornwell, 1994).

Several approaches and models have been developed and exploited to evaluate the efficiency, whose most used are the parametric approaches exploiting the SFA method (Stochastic Frontier Analysis) and the nonparametric approach using the DEA method (Data Envelopment Analysis). These approaches seek to determine the production (or cost) efficiency frontier either through an econometric regression of a functional relationship between outputs and inputs or a linear programming of these variables.

The production frontier traces the maximum level of production that a firm can produce using the best technical production combinations. It reflects rational production behavior that seeks to avoid waste and to ensure best practices in the use of resources. A firm is efficient if it is on that production frontier.

In this sense, the efficiency measurement is based on a benchmarking between the firm's position and its production frontier. The efficiency score of a firm is calculated according to the difference between the level of the production achieved and that corresponding to the production efficiency frontier.

The application of these two parametric and non-parametric approaches to the public passenger transport sector has been the subject of several studies. However, the results obtained remain strongly influenced by the type of the used approach and model and the choice of the retained output and input variables (Kerstens, 1996). For the same sample of CPT firms, the studies developed yielded different results.

This nuance of the results lies particularly in the complexity of the transport industry's production and the multiplication of internal and external factors which can influence the level of efficiency. Several explanatory factors have been identified and analyzed, whether relating to the technical production process of the company studied or to its economic, institutional and demographic environment, which can influence both its demand and its production conditions.

In addition, several output indicators were used to assess the level of production of these transport companies without having any consensus. In fact, the CPT Company is a multi-product, networked industry, producing services of variable quality which are distinguished either by the line, the configuration of the network, the operated mode, the commercial speed, etc. It offers physical quantities of transport and distance units but also qualities evaluated by time, frequency, availability, accessibility, etc. This variability in output makes any aggregation of production in a single criterion inadequate with the industrial reality of the sector. Transport output must reflect the heterogeneous nature of the transport service, rather than its network nature. Some authors have proposed the solution to disaggregate this measure by integrating in to a hedonic output the network characteristics and the quality of the transport service in order to heterogenize the supply of the transport company (Jara Diaz, 1982; Spady and Freidlander, 1978).

In addition, most studies have focused on the allocative sources of inefficiency while ignoring those relating to the business environment. Some studies (Boame, 2004; Margari et al, 2007; Sampaio et al, 2008; García Sánchez, 2009; Zhu et al, 2016, etc.) have clearly shown the great contribution of structural, transactional, economic, geographic and institutional factors, in explaining the differences in efficiency between companies.

These factors are generally outside the scope of the company that it cannot influence, but it undergoes the consequences of their changes. They can affect both the company's market potential and its supply conditions.

In fact, the company is not an autonomous entity where its efficiency depends only on the technical mechanisms of its production. It belongs to a politico-economic environment which influences its decisions and contributes in one way or another to determining its effectiveness (Margari et al, 2007).

In this article, based on this hedonic measurement of output transport and the two stages of the non-parametric DEA approach, we shall first measure the efficiency score of 13 Tunisian companies of CPT, all throughout the period 2009-2017. Then, we shall make a simple econometric regression taking as endogenous variable the efficiency score calculated by the DEA method and the explanatory variables, the indicators describing the environment surrounding the company. This regression known as the Tobit regression is particularly relevant when the endogenous variable is bounded between zero and one (Tobin, 1958).

This study will be articulated as follows: in a first section, we will proceed to a review of the literature dealing with this subject. Second, we turn to detail the DEA method which is the subject of our study. Then, we will state the empirical part of the work which consists first to measure the technical efficiency of the bus CPT system in Tunisia, on the other hand to analyze the



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estimation results and to explain the efficiency differences between the companies in our sample via a Tobit regression. Finally, we will end this article with a conclusion.

Several studies have been conducted to analyze the efficiency of public passenger transport services, particularly using non-parametric methods.

The very first studies limited their analyzes to measure the technical and scale efficiency scores, accusing ineffectiveness only of allocative and scale sources. These studies used different forms of data (temporal or cross-sectional or panel data) by combining conventional inputs (capital, labor and energy) to transform them into a generally single output evaluated from a supply perspective, measured by the number of seat kilometers or bus-kilometers offered. From demand perspective, it is measured by income or the number of passenger-kilometers transported (Chu et al, 1992; Nolan, 1996; Kerstens, 1996; Viton, 1997; Karlaftis, 2004, etc.).

The recent trend in this work is to analyze the impact of the economic, institutional, geographic, etc. environment, where the company reigns, over its performance. The main aim of these studies is to identify the main explanatory factors for the efficiency gap recorded between firms and to examine how these factors affect efficiency results. According to several studies, this external environment to the company positively and / or negatively affects the performance of the sector and largely explains the differences in efficiency between companies (Boame, 2004; Margari et al, 2007; Sampaio et al , 2008; García Sánchez, 2009; Zhu et al, 2016, etc.)

## 1. Literature Review

These studies used developed forms of the non-parametric DEA approach to integrate these environmental variables and test their effects on the efficiency of CPT companies. Among these forms are the two-stage DEA and the three-stage DEA, etc. Where Tobit regression has been widely applied to the efficiency scores calculated by the DEA method. These studies differ in terms of their study sample, the output and input variables of CPT companies, the performance criteria used and the data analysis methodology. Kerstens (1996) demonstrated that the results on efficiency measuring of public transport systems differ considerably depending on the estimation methodology and outputs specification used. Boame (2004) analyzed the technical efficiency of 30 urban transit companies in Canada, over the period (1990 - 1998) using the two-stage DEA Bootstrap method. In the first step, he calculated the efficiency score of all these decision units by combining 3 inputs (number of buses, fuel consumption and total hours worked) with a single output evaluated as revenue per vehicle - kilometers. The results show that the average efficiency of Canadian transportation systems is around 78% and that 56% of transit systems show increasing returns to scale.

In the second step, these calculated efficiency scores were regressed by a Tobit model based on a number of factors that may influence efficiency other than inputs. Four explanatory variables were retained in the model, such as average speed, average age of the fleet, peak traffic share and a time trend. It showed that average speed and time trend negatively affect efficiency while peak traffic share and the average age of the fleet negatively affect it.

In the Italian context, Margari et al. (2007) studied the impact of contract type on operator performance by adopting the three-step DEA method to overcome the deterministic gap in the DEA method. Applied on 42 Italian CPT companies between 1983 and 1999, this model combined a supply-oriented output measured by the number of seat-kilometers offered and four input variables (number of drivers, number of sedentary staff, amount of fuel consumed and cost of materials), to calculate and compare the efficiency scores between the companies studied. The authors concluded that the level of efficiency of these companies is both high and comparable and that companies providing urban traffic are more efficient than those specializing in interurban transport. In addition, the study tested three exogenous sources of efficiency such as regulatory practices measured by a dummy variable which takes 1 if the contract is at a fixed price and 0 otherwise, the technical operating conditions expressed by average commercial speed and average age of the fleet, potential demand represented by population density and technical progress illustrated by the time trend.

Finally, they re-executed the DEA process on the quantities of inputs purged of both exogenous effects and statistical noise. They found that the establishment of a governance regime based on a fixed price contract improves the efficiency score and reduces waste in the use of resources.

In order to highlight the characteristics of an efficient CPT system, Sampaio et al (2008) used the DEA method to compare the technical efficiency levels of 19 CPT companies 12 of which were European and 7 Brazilian. They used 3 input variables such as labor, capital evaluated by the number of vehicles and fuel and a single output variable evaluated by the number of passengers transported. They showed that only one Brazilian company and nine European companies are efficient. Subsequently, these efficiency scores were analyzed according to the governance modality and the pricing structure adopted by each company. They

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explained efficiency both through a process of partnership and equal sharing of decision-making power between governments, user associations and local communities, and through the application of a flexible pricing structure offering users several types of tickets that meet the interests of passengers.

Odeck (2008) tried to test the impact of CPT companies' mergers on both their efficiency score and their total factor productivity using the DEA method and the Malmquist productivity index. His study covered 17 passenger transport systems in Norway during the period 1995-2002. The study period was broken down into two phases, before and after merger. He used a single output variable evaluated in Seats-Kilometers offered and 3 input variables such as capital, labor and energy. The results show a potential for improvement in the efficiency and productivity of companies regardless of the analysis phase (pre or post-merger). Similarly, merger operations have improved this efficiency.

García Sánchez (2009) carried out an analysis of the efficiency of public bus transport in Spain using data envelopment analysis. He tried to compare the efficiency of 24 public transport systems according to 4 output conceptions defined respectively from a demand perspective, a supply perspective, a service quality perspective and a combinatorial perspective by aggregating the first three dimensions using the principal component analysis method to obtain a more global output indicator. The results obtained showed that the average levels of pure technical efficiency and scale are respectively 94.91 and 52.02%, that most of the technical inefficiency is in the form of scale inefficiency and that these results differ according to the optics used to identify output.

Furthermore, to identify the elements of heterogeneity in the environment in which the firms studied reign, he applied a Tobit regression. Seven environmental variables were selected such as population density, rent per capita, number of private vehicles, commercial speed, length of the bus network, a dummy variable illustrating the existence or not of other transport alternatives and a ratio indicating the share of peak hours. He noted that all of these variables had a negative effect on technical efficiency, except the number of private vehicles variable, whose effect was marginal and insignificant. It also found that the ownership system of the CPT company (public or private) had no effect on the efficiency score.

Hirschhausen and Cullmann (2010) analyzed the technical efficiency of 179 CPT companies in Germany over the period 1990-2004, using the DEA and Bootstrapping methods to test the robustness of the estimates. They showed that the average technical efficiency of German bus companies is relatively low and that the efficiency score increases with the size of the firm. Small firms are less efficient than larger ones and have increasing returns to scale indicating that they can increase their size through the merger process.

In addition, these authors have tried to analyze the contribution of exogenous variables on efficiency. They chose a single variable such as population density defined by the number of inhabitants per kilometer of network of each transport company. This variable was included as an input in the DEA model affects the efficiency score positively and significantly. They deduced that transport operators in populated areas are more efficient than those serving low population density areas.

Zhu et al (2016) applied a three-step DEA model on a cross-sectional database of 39 bus lines operated by Jiangyin public company (China), to analyze the operational and services quality efficiency on each line. By combining 3 inputs (number of drivers, fuel and number of buses) and 4 output (two physical: revenue and number of bus-km and two qualitative: speed and average punctuality rate), they calculated in the first step the efficiency scores, by distinguishing between those relating to bus operation and those relating to quality. The second step aims to estimate these efficiency scores calculated via a stochastic model (SFA) as a function of four exogenous explanatory factors (route length, bus stops density, commercial speed and average stop time at stations).

Step 3 consists of repeating step 1 using inputs adjusted to obtain operational efficiency scores purged of environment and statistical nuisance effects.

They have shown that exogenous factors have an important and significant influence on the operating efficiency of bus lines, but they affect operational and quality efficiency differently. They confirmed that traffic congestion and the lack of priority measures for buses, put CPT system in good working order and that route length and average bus stop density are useful for operational efficiency, but not for quality efficiency.

### 2. Non-parametric model presentation: Data Envelopment Analysis

Thanks to Farrell (1957) that the concept of efficiency has been developed and systematized so that it can be calculated and tested in empirical studies. He proposed calculating the firm efficiency score according to the distance between the realized production level and that corresponding the production efficiency frontier. In this sense, the measurement of efficiency is based on a comparative process between the firm's position and its production frontier.

The production frontier traces the link between maximum level of production that a firm can produce by using its technical production combinations in the most efficient way. It reflects a producer's rational production behavior who seeks to avoid waste and to ensure best practices in the use of its resources. A firm is efficient if it is on this production frontier, i.e., from a given

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combination of the input that it holds, it produces the maximum of output, or also, it produces a given output quantity, using the minimum input quantities (Atkinson and Cornwell, 1994).

Measuring the degree of production unit efficiency thus makes it possible to know whether it can increase production without consuming more resources, or reduce the use of at least one input while maintaining the same production level.

Generally, a distinction is made between technical efficiency, allocative efficiency and efficiency of scale. Technical efficiency refers to the firm's ability to be on the production frontier in the sense that it produces maximum output by using a certain quantity of inputs. Allocation efficiency reflects the firm's ability to use its inputs in optimal proportions, reducing its production costs given their respective prices. Scale efficiency implies the firm's ability to take advantage of economies of scale and to have a minimum efficiency size that minimizes its long-term average cost (Murillo Zamouranou, 2004),

The decomposition of this efficiency notion into technical, allocative and scale efficiency is highly essential to the decision-making of companies to choose the best actions likely to improve their efficiency level and to fill their insufficiency either in the resources allocation, or in the choice of the technical combination of production or also the firm size.

Generally, two approaches are used to estimate the efficiency frontier and to measure the efficiency score of a firm: the parametric and the non-parametric approach.

The parametric approach consists in estimating a given objective function for the firm (production, cost or profit function) by assuming beforehand a given functional form between the variable to be explained and the explanatory variables. The estimation of these functions is based on econometric techniques.

The non-parametric approach uses linear programming techniques to identify the set of optimal production techniques that maximize the output level of the firm (Charnes et al., 1995). It assumes a non-parametric and non-linear relationship between the input and output variables without the need to impose any restrictions on the form of the objective function. This method is known by the Data Envelopment Analysis (DEA) method. It has the advantage of determining the production frontier for a multi-input and multi-output industry without any additional restrictions and measuring the improvement margin that an inefficient firm can bring either to its consumption of inputs and / or to its production of outputs. In this sense, the DEA method is an essential tool for making the best decisions in terms of the resources allocation and determining the size of the firm's optimal efficiency. Several versions of this DEA model have been presented and tested in empirical work and which differ according to both input or output orientation<sup>1</sup> of the model, as well as the nature of the constant or variable returns to scale. Depending on the version to be used, the results and their interpretations differ.

Under the assumption of constant returns to scale, Charnes et al, (1978), developed a DEA CRS<sup>2</sup> model. In its input orientation, this model is expressed by a constraint maximization program presented as follows<sup>3</sup>:

$$\begin{aligned} & \text{Min } \theta_i \\ & \text{s. t} \\ & \theta_i X_i - \sum_{h=1}^H \lambda_h X_h \geq 0 \quad \forall h = 1 \dots H \\ & \sum_{h=1}^H \lambda_h Y_h - Y_i \geq 0 \\ & \lambda_h \geq 0 \end{aligned}$$

Where  $X_i$  and  $Y_i$  are respectively the vectors of exploited inputs and output produced by the DMU<sub>i</sub> that we are looking to evaluate its efficiency level.

$X_h$  and  $Y_h$  are respectively the vectors of exploited inputs and output produced by the other DMU<sub>h</sub> for any  $h = 1, \dots, H ; h \neq i$ .

$\lambda$  is a vector composed of constant H's called multipliers that indicate how the DMUs combine to form the efficiency boundary against which the  $i^{\text{th}}$  decision unit will be compared.

$\theta_i$  is the efficiency score of firm  $i$ . This score is between 0 and 1.

If  $\theta_i = 1$ , firm  $i$  is designed as technically efficient.

If  $\theta_i < 1$ , firm  $i$  is technically inefficient.

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<sup>1</sup> The input orientation aims at minimizing inputs without modifying the quantities of outputs. It shows us the margin for reducing the input quantities to produce the same quantity and combination of outputs. Whereas the output orientation aims at maximizing outputs for a given level and combination of inputs. It tells us how much room there is to increase the outputs without changing the inputs.

<sup>2</sup> This model is also known as DEA CCR in relation to the names of its founders Charnes, Cooper and Rhodes.

<sup>3</sup> For a more intensive analytical development of the DEA method, interested readers may refer to Seiford and Thrall (1990), Ali and Seiford (1993) and Charnes, Cooper, Lewin and Seiford (1995),

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However, this DEA-CRS model is generally restrictive because in reality it is unlikely that companies operate at their optimal size of efficiency and in an environment of pure and perfect competition. Furthermore, this model confuses technical efficiency with scale efficiency.

This gap was filled in 1984 by Banker, Charnes and Cooper (1984) who proposed the DEA model under the assumption of variable returns to scale. This DEA-BCC or DEA-VRS (variable return scale) model provided a clear precision to the measurement of efficiency by decomposing total efficiency into pure technical efficiency and scale efficiency. The efficiency score calculated according to the DEA-VRS method alone indicates pure technical efficiency without the scale effect. The scale efficiency score can be deduced following the application of the DEA-CRS method.

According to Coelli et al (1998), the scale efficiency score is determined by the ratio between the efficiency scores calculated according to the DEA-CCR and DEA-BCC method.

$$SE = \frac{\theta^{*CRS}}{\theta^{*VRS}}$$

Where SE is scale efficiency. With,  $0 \leq SE \leq 1$ .

Scale efficiency is only achieved when both CRS and VRS efficiency scores are equivalent. In other words, if both DEA-CRS and DEA-VRS models lead to the same result, this indicates that the firm operates at its optimal size and that the returns to scale are constant.

Note that the version of the DEA model with variable returns to scale (DEA-VRS) is based on the same optimization programs as those applied in the DEA-CRS model, but with an additional assumption about the convexity of the production set. This assumption can be systematized by the condition:  $\sum_{j=1}^N \lambda_j = 1$ .

This additional constraint implies that inefficient firms must be compared with those having the same production scales.

### 3. Variables choice and data presentation

Several indicators were selected in the literature review to evaluate the output of CPT, the most commonly used of which are Seat-kilometers offered (SKO) and passenger-kilometers transported (PKT). The difference between these two indicators lies in the technical or commercial nature of a CPT company's offer. The first indicator refers to the capacity offered by the company, while the second indicator refers to traffic, i.e. the number of passenger-km actually carried.

As long as the transport service is non-storable and its offered capacity is rigid at least in the short term, these two indicators are distinct and their ratio indicates the average bus occupancy rate. This rate is an indicator of both the quality of the services offered and the efficiency of the use of the capacity offered as well as the profitability of the trips. An occupancy rate that exceeds 100% indicates overuse of the capacity offered, which leads to congestion, accelerated depreciation of equipment and a deterioration of service quality. A low occupancy rate reduces the company's profitability and deprives it of economic density (Matas and Raymond, 1998).

Some authors like Viton 1997; Margari et al., 2007; Odeck, 2008, and so on, justify their choice of SKO output on the one hand, by the objective of studying the technical efficiency, which aims to maximize the capacity offered given the resources, and on the other hand, by the fact that the demand escapes the act of the firm. It depends on several other factors relating to the socio-economic system. These studies incorporated the commercial output evaluated in PKT as a control variable to explain the efficiency gap between CPT companies.

However, other studies (Sampaio et al, 2008; Karlaftis and Tsamboulas, 2012; ) have used aggregate commercial output (PKT) which better reflects the company's ability to exploit its offered capacity in a more rational way. They consider the SKO indicator to be a measure of input and not output.

In fact, this offered capacity is calculated as the product of the number of journeys made per unit of reference time, the average bus capacity and the average distance of a journey. This SKO remains constant particularly for regular traffic at least in the short term, where the company has not made any investments to reinforce its bus fleet or extend its route network. It is thus planned in advance, particularly by the public authorities concerned when the company is public in nature. It does not reflect the real output of the company and it cannot evolve in line with the factors of production or the control factors that explain inefficiency. Other studies (Levaggi, 1994; García Sánchez, 2009; Li et al., 2013; Zhu et al., 2016) have disaggregated transport output as a function of network characteristics in terms of the number of lines, average distance of trips, number of stations, as well as the quality of service offered in terms of commercial speed, average occupancy rate, empty distance, frequency, etc.. This output, described as hedonic, thus makes it possible to diversify the services offered by a company via the technical characteristics of its offer and to properly detect the sources of performance differences between CPT companies. It better describes the reality of

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the multi-product production process of a transport firm by reducing the degree of ambiguity inherent in the aggregation of output and the degree of complexity related to its extreme disaggregation (Spady and Freidlander, 1978).

Regarding the input variables, most studies adopt the three classic inputs of any firm such as capital which has been evaluated differently from one study to another, fuel and labor.

However, to better explain the sources of the efficiency differences between the CPT companies, several other variables known as "control variables" were retained either as inputs and incorporated directly into the DEA model or non-discretionary variables used as explanatory variables for efficiency and which are used in a second linear regression model to express their significance and explanatory power.

These control variables describe the environment in which the firm operates and which is outside of decision makers control. In fact, CPT firms operate in different environments that influence both their supply and demand conditions as well as their level of efficiency. This environment can be associated with network characteristics such as network length, average age of the fleet, density or number of stops, etc, traffic conditions in terms of road congestion (commercial speed, peak traffic ratio, station stop times, etc.), quality and density of road infrastructure, motorization rates, density of demand as assessed by population density, regional economic growth, standard of living, governance regime and ownership of capital, level of liberalization, etc. the market structure as assessed by the number of competitors, the degree of concentration, the pricing structure, etc. and technological change represented by a time-trend variable.

These variables are shown to be determinants of the efficiency of the company that influence the cost of operating bus and determine the market potential of the company. Their introduction allows both to take into account the heterogeneity of the environment in which the firm operates and to provide more specific informations about the performance structure of the sector. Thus, there is great diversity in the choice of these input, output and control variables to test the level of efficiency of a CPT company without there being a consensus on commonly accepted variables in this industry.

Generally, the choice of these variables depends on the objective of the study, the performance criteria selected by the firm and the availability of data (Hirschhausen and Cullmann, 2010).

In fact, the concept of efficiency can only be closely linked to the objectives assigned by the CPT companies. On the one hand, the latter seek to maximize the use of their capacity (maximizing the occupancy rate) and avoid empty returns or trips, and on the other hand, to satisfy the qualitative requirements of users in terms of speed, minimizing waiting time at stops, accessibility, reliability, etc. (Hirschhausen and Cullmann, 2010). These qualitative requirements vary according to the conditions of CPT's services supply in terms of number of lines served, their distances and configurations, the number of stops and their location, frequency, speed, traffic conditions, density of demand, etc.

In our study, we chose as output variables, the number of passenger-kilometers transported (PKT) measured by the product between the number of passengers actually transported and the total distance travelled by all buses during a year. This output better reflects the industrial reality of the sector because it indicates the attractiveness of public transport and takes into account the economic motive for providing services (Berechman 1993).

At the input level, we have chosen three variables that are indispensable for any economic analysis, which are capital, labor and energy represented respectively by the number of buses (buses), the total number of employees including drivers, administrative staff and technicians (employees) and fuel consumption (energy) evaluated by the tonnage of fuel consumed per year.

In addition to these traditional input variables, it seems necessary to add other attribute variables illustrating the characteristics of the network and the quality of the services offered. These attributes are multiple and their selection varies according to the purpose and availability of the data. For this study, we have chosen the following variables: Seat- Kilometer Offered (SKO), which is the product of frequency, number of buses, their capacity and total distance travelled per year, Occupancy Rate (OR), number of routes (Lines) and age of the fleet (Age).

The choice of these output and input variables is dictated both by the lessons learnt from the literature review on the subject and by the availability of data.

The data used in this study have the panel data structure of 13 regional bus transport companies covering the only urban network over 9-year (from 2009 to 2017), i.e. a total number of 117 observations. These observations will be conceived as decision units (DMU's) that transform certain quantities of inputs into an output.

In Tunisia, the collective passenger transport sector is managed by these 13 public regional bus transport companies. It is thus highly regulated and segmented into a set of production units forming a monopoly situation with several establishments. Each company has an urban, interurban and suburban transport network whose configuration and size are predetermined by the concerned authorities according to the demographic, economic and urban characteristics of each region.

Table 1 presents a descriptive statistics for these inputs, output and attribute variables.

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All this data relating to the inputs, output and attribute variables of each enterprise were collected from the annual activity reports of each enterprise.

**Table 1: Analysis of descriptive statistics**

Variable	Observation	Average value	Standard-Deviation	Min	Max
<i>Bus</i>	117	293	284.4282	101	1270
<i>Employees</i>	117	1049	1574.837	222	7755
<i>Energy (ton)</i>	117	5443	5691602	1541	29300
<i>PKT (10<sup>6</sup>)</i>	117	926	2.05	35.3	1300
<i>SKO(10<sup>6</sup>)</i>	117	538	1.07	35.4	492
<i>Lignes</i>	117	198	74.011	54	377
<i>Age</i>	117	8.58	1.491667	5.11	12.83
<i>OR</i>	117	1.7	0.51	0.85	3.26

The table of descriptive statistics shows a great variance between the sizes of the firms and a large dispersion in the sample. For example, in terms of capital, we note a large variation where the company STT has the highest number of buses with 1270 buses unlike the Beja company (SRTB) which has the lowest number with 101 buses.

In addition, commercial activity appears to be much more active in Tunis with a traffic of 4,300 million PKT against only 60 million PKT in Kasrine. The STT alone accounts for 45.2% of total urban transport traffic by bus in Tunisia. The first four companies serving the most developed regions of Tunisia occupy 81% of the total traffic and monopolize 83% of the total capacity offered.

#### 4. Measuring the technical efficiency of public passenger transport companies in Tunisia

The objective of this section is to calculate the technical efficiency scores of the public transport companies in Tunisia and to determine their various sources by applying the DEA method under constant and variable returns to scale according to an input orientation. The choice of this input orientation of the model is dictated by the objective of transport companies that seek to solve a specific problem of poor management or use of resources.

Table 2 presents the average scores for total efficiency, pure technical efficiency and efficiency of scale<sup>4</sup>. We recall that total technical efficiency is induced by the DEA-CRS model. While, the pure technical efficiency is calculated following the processing of the DEA-VRS model, and the scale efficiency is equal to the ratio between CRS and VRS scores.

According to the obtained results, the average score of total efficiency (CRS) recorded in our sample is rather low (0.527) indicating that the CPT system in Tunisia is inefficient in its totality. This average score of technical efficiency has stagnated over time, but for most of the studied companies, it marked a decline, particularly from 2011 onwards. For example, for the firm STT, this score decreases from 1 to 0.66 between 2010 and 2015. Knowing that the year 2011 was the year when Tunisia knew a revolution after the autocratic regime, which reigned since 1987. This revolution has created an upheaval in the operating mechanisms of public enterprises and consecutive strikes by their staff demanding an improvement in working conditions and a wage increase.

An efficiency score equal to 1 indicates that the company is technically efficient in the sense that it minimizes the exploitation of its resources in order to produce a certain level of output evaluated in terms of PKT. While a score less than 1 indicates that the company is inefficient and suffers from over-use of its resources or also a waste in the exploitation of its means of production.

According to our results, no firm manages to reach the CRS technical efficiency frontier during the analysis period. Only 2 firms (SRT Bizerte and STT Tunis) had a total technical efficiency score equal to one in different periods (SRT Bizerte had full efficiency in 2016 and 2017 and STT had this score in 2009 and 2010). However, these companies were unable to maintain full efficiency during the analysis period.

**Table 2: The results of efficiency scores of the different firms**

Firme	Average total technical efficiency score (DEA-CRS)	Average score of pure technical efficiency (DEA-VRS)	Average scale efficiency score
<b>SORETRAK</b>	0.407789	0.951767	0.428787
<b>SORETRAS</b>	0.475005	0.95185	0.502514

<sup>4</sup> The MaxDEA 7 Basic software was used to determine the efficiency scores.

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<b>SRTGN</b>	0.633086	0.917529	0.697052
<b>SRTKasserine</b>	0.318339	0.994555	0.320089
<b>SRTB</b>	0.835366	0.989603	0.843812
<b>SRTKef</b>	0.348926	0.977471	0.356864
<b>SOTREGabes</b>	0.552601	0.903284	0.617398
<b>SRT Béja</b>	0.406608	1	0.406608
<b>STS</b>	0.805409	0.872314	0.847584
<b>SRT Gafsa</b>	0.453621	0.890915	0.514372
<b>SRT Jendouba</b>	0.278612	0.995249	0.280019
<b>SRT Médenine</b>	0.579347	0.994765	0.582214
<b>STT</b>	0.82353	0.997984	0.825112
<b>Moyenne</b>	0.527018	0.956714	0.5555712

We also note that there is an important difference between the efficiency scores that vary between a maximum value of 1 and a minimum value of 0.26, indicating a great heterogeneity in the efficiency of the CPT companies in Tunisia. Some companies show a high degree of efficiency and others record low scores.

We can distinguish three groups of companies according to their average total efficiency score: Three companies (Société des Transports de Tunis (STT), Société de Transport du Sahel (STS) and Société Régionale de Transport de Bizerte (SRTB)) have a high efficiency score of more than 80% and are qualified to be efficient. Three companies (SRTGN, SOTREGabes and SRT Médenine) with an average efficiency score of more than 50%. The remaining companies (7 companies) qualified as highly inefficient with an efficiency score of less than 50%.

However, the average level of pure technical efficiency (VRS) is high. It is close to 1 for all companies and years. The average score recorded for all the DMU's in our sample is 0.95, indicating that the CPT system in Tunisia operates efficiently in terms of resource allocation (pure technical efficiency) with potential for improvement. Almost all the firms (at least for a certain year) are placed on the efficiency frontier with variable returns to scale.

Similarly, the differential observed between the pure efficiency scores is not very large, indicating that CPT firms have homogeneous levels of pure efficiency.

The discrepancy between the pure technical efficiency score and the total efficiency score is due to scale inefficiencies. These inefficiencies of scale are induced by the under-optimization (insufficient or over-capacity) of the company's size or rather that the size of the company (assessed by the bus fleet or the SKO or also by the number of routes served) is inadequate for the minimum efficiency size.

The average level of scale efficiency recorded for our sample is 0.55 and varies between 0.28 and 0.85. Generally, the firms with the highest total efficiency score are those that also have the higher score in scale efficiency.

Similarly, smaller firms show a significant difference between the two scores of pure efficiency and scale efficiency. This clearly indicates that scale inefficiencies are relative to the small size of firms.

Therefore, our results imply that returns to scale for small and medium-sized firms are increasing and that there is potential for improvement by exploiting economies of scale. In this sense, we suggest that small and medium-sized enterprises need to increase their size through a process of horizontal concentration by merging small enterprises that are geographically close.

These advantages of economies of scale in improving the efficiency of small firms have been confirmed by several studies that have shown that larger firms are technically more efficient than smaller ones (Berechman, 1993, Viton, 1997; Odeck, 2008; Hirschhausen, and Cullmann, 2010, etc.). However, if the increase in the firm's available capacity is not well exploited, it greatly reduces its efficiency.

This size is all the greater the larger the company has a large bus fleet and its network is branched out into several lines. This network size is a source of both economies of scale and economies of scope. In fact, the CPT industry is highly capital-intensive, incorporating a very large share of fixed costs. These fixed costs will be better amortized over a larger number of the units offered. Moreover, serving several lines simultaneously, which illustrates the diversification of the output of a CPT company, proves to be less expensive than specializing in serving a single line because the company can better benefit from the common inputs used to offer transport services regardless of their geographical allocation. Similarly, this diversification improves the attractiveness of the company through its ability to better satisfy the diversified travel needs of citizens by offering them better accessibility and geographical coverage via an extensive and branched network.

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Therefore, increasing this production capacity by purchasing new buses and creating new lines, will have a considerable influence on the efficiency of CPT companies. These investments are necessary to improve the quality, reliability, and security of the CPT system and to increase the demand for transport services.

SRT Jendouba firm has the lowest scale efficiency score equivalent to 0.28. While the transport companies of Sahel (STS), Bizerte (SRTB) and Tunis (STT) have the highest average score equivalent to 0.847, 0.844 and 0.825 respectively. This shows that these firms manage not only to optimize the use of their production factors but also to reach the optimal efficiency size.

Several endogenous factors have combined to explain these differences in efficiency between CPT companies in Tunisia.

Benchmarking results show that, on average, efficient companies compared to inefficient ones are more productive in terms of both labor and capital and energy consumption, than inefficient ones in terms of size. In fact, the average labor productivity as the average number of PKT produced by each worker in a company is 1712884 for the STT in 2017 while it is 121266 for SRTJ. Similarly, to produce one million SKO/year, STT requires only 1.2 labor units, while SRTJ operates 5.25 labor units.

Generally, the primary factor explaining the inefficiency of most of the CPT companies in Tunisia is the problem of overstaffing. The results show that, on average and across the entire period analyzed, CPT companies must reduce their workforce by 20% to reach the efficiency frontier. As an example, the SRTJ company is encouraged to reduce its workforce from 319 employees to 240. This shows that with a smaller number of employees, it can achieve the same level of production.

Because of their public nature, these companies have, since their creation reservoirs to absorb the unemployed, which has caused problems of overstaffing. The available capacity of the capital (bus) is largely insufficient to absorb the engaged workforce. As a result, the marginal labor productivity will be negative and these enterprises thus operate outside the area of economic efficiency because production will be declining.

Several studies have emphasized this point and have shown that public companies in a monopoly position do not encourage their employees to make a significant effort because of the information asymmetry and the lack of profit-seeking that should lead these companies to be more rational and to minimize their production costs.

The second factor explaining the inefficiency of CPT companies in Tunisia is the high-average ages of the bus fleet. It exceeds 10 years old. According to our estimates, there is a negative correlation between the average age of the fleet and the output and consequently the level of efficiency.

The increase in the average age of the fleet negatively affects the productivity of the capital (bus), increases the energy consumption, destroys service quality and increases maintenance and operating costs.

The three most efficient companies (STT, STS and SRTB) have a bus fleet with a lower age than the average one (between 7 and 8 years). They took actions to rejuvenate their fleets. In addition, these companies have a larger fleet of buses evaluated by their offered capacity (number of seats available). Therefore, the large productive capacity of a CPT firm widely explains its high level of efficiency.

Transport companies with an aging bus fleet suffer from excessive energy consumption and an increase in the number of technical breakdowns of buses. Consequently, this leads to a decrease in the rate of bus availability and production capacity. According to SRTJ's activity reports, the breakdown rate over 10,000 kilometers is passed from 1.72 in 2009 to 2.21 in 2017 recording an evolution of 26.5% following the aging of its bus fleet whose average age exceeds 10 years. The availability rate of buses has increased from 38.5% in 2009 to 10.2% in 2017.

This rather high average age lies particularly in the inability of most companies to generate self-financing necessary to renew their bus fleet. These firms suffer from a budget deficit and lack of autonomy in decision-making. Otherwise, the subventions granted by the State to these companies are insufficient even to cover their operating costs. To be able to cover their budget deficits, both these companies and the public authorities must find solutions and provide the necessary financial resources to renew bus fleets and increase production capacity.

In terms of energy consumption, several studies such as Zhou et al. (2014) have shown that there is a positive correlation between energy consumption and PKT growth. However, in our study, the fuel consumption for a certain companies increased without its output having evolved. This can be explained by, on the one hand, empty returns induced by a bad network configuration and a bad scheduling of departure times, on the other hand, by the extension of the lines with low density of traffic, and finally, by the age of the bus park.

For instance, the average energy consumption must be reduced for the SRTJ Company from 2205704 to 519385 liters, ensuring the same volume of traffic.

Since the end of 2012, the most efficient companies have committed themselves to a program to rationalize energy consumption in collaboration with the National Agency for Energy Management. They have adopted a set of actions to save fuel consumption,



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such as ensuring direct monitoring of bus engine conditions via an operating assistance system, strengthening preventive maintenance, giving training courses to sensitize agents and improve the behavior of drivers during driving hours.

As in many works that tried to disaggregate transportation output (Levaggi, 1994 ; Viton, 1997 ; Li et al, 2013 ; etc.), our results also show that the characteristics of the transport offer have a greater impact on the efficiency score than conventional inputs. From where the interest of their integration into the assessment process to better explain the technical efficiency gap between companies. In fact, the number of lines has a positive effect on the technical efficiency of CPT companies. Firms with a larger network of lines that maximize the geographic coverage of the population served are more efficient. Firms with a wider network of lines maximizing geographic coverage of the population served are more efficient.

The three most efficient firms STS, STT and SRTB have a network composed respectively of 325, 243 and 217 lines, compared with the least efficient firms such as SRTKasserine, SRTKef and SRT Jendouba, which have the least extensive network with 101, 96 and 104 lines respectively.

Companies also need to increase their attractiveness especially of full-rate customers who are currently escaping their demand because of the poor service quality of the firms. This quality can be appreciated in our model by the indicator of the occupancy rate. This rate reflects the adequacy between the supply and demand of transport. If the demand exceeds the supply, the occupancy rate will be high, indicating that the bus capacity available to users is insufficient to meet the user's travel needs. This imbalance creates overload and congestion of the buses which deteriorate the service quality, amortize bus faster and reduce the technical efficiency of the companies.

According to our database, the average occupancy rate of our sample is 1.7 and varies between 3.26 (Tunis) and 0.85 (SRT Jendouba). So, most of our CPT companies even the efficient ones suffer from bus overload while registering occupancy rates are superior than 1.

This inefficiency is illustrated through the reduction of the number of paying travelers and their substitution by schoolchildren and students. Paid users manifest a reluctant behavior towards the choice of the bus mode compared to the collective taxi which invades more and more the market of CPT.

### 5. Results and interpretation of the Tobit regression

Other than endogenous factors relating to the technical allocation of resources, the efficiency gap observed between the CPT companies. It is explained by other exogenous factors relating particularly to the urban environment in which each firm operates. This environment varies from one agglomeration to another in terms of population density, motorization rate, level of development, urbanization, etc. It can affect both the demand for the company and its supply conditions. However, this environment is outside the scope of the firm's activities, but it can have a significant impact on both the firm's operating costs and its level of efficiency.

To take account of this external heterogeneity between companies, we will incorporate these control variables into a linear regression model to estimate and explain their contribution to determining the level of efficiency of a CPT company.

The explanatory variable will be the efficiency score already calculated in the first estimation of the DEA model. Since these technical efficiency scores take values between zero and one, we use the Tobit model because it can account for censored data (Tobin, 1958).

The model used in this framework is expressed as follows:

$$SE_{it} = \alpha_0 + \sum_{i=0}^N \alpha_i Z_{it} + \varepsilon_i$$

$SE_{it}$  represents the efficiency score of company  $i$  at date  $t$ . These scores are derived by applying the DEA model in its CRS and input orientation version.

$Z_{it}$  it is the vector of explanatory variables

$\beta$ : The vector of parameters to be estimated

$\varepsilon_i$  : The random term that follows a normal distribution of zero mean and constant standard deviation:  $\varepsilon_i \sim N(0, \sigma_\varepsilon)$

7 non-discretionary variables were selected, divided into two groups: variables characterizing each company's network that influence its supply conditions, such as average network length and road density. Variables characterizing traffic which influence demand, such as population density, motorization rate, number of companies and share of student traffic in the total traffic of each company.

The following table describes the statistical characteristics of all these variables

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**Table 3: Presentation of Tobit regression data**

Variable	Average value	Min	Max	standard deviation
SE : Efficiency score CRS	0.572	0.226	1	0.542
Z <sub>1</sub> : Road density	0.069	0	1	0.05
Z <sub>2</sub> : Number of companies	31633.44	1115	323381	3163344
Z <sub>3</sub> : Population density	303.82	3083.7	3.72	615.98
Z <sub>4</sub> : Motorization Rate	0.091	0.025	0.34	0.154
Z <sub>5</sub> : Average network length	56.41	24	97.7	19.814
Z <sub>6</sub> : share of student traffic	0.69	0.46	0.89	0.106

The results of the analysis of this estimate are presented in the table below<sup>5</sup>.

**Table 4: Tobit estimation results**

	Coefficient	P-value
Road density	0.004519	0.366
Number of companies	-0.29	0.000
Population density	0.0166	0.000
Motorization Rate	-1.257	0.412
Average network length	-0.00892	0.015
share of student traffic	-0.384	0.62
Constant	0.435	0.001
Observation: 117		
Log likelihood: -12.3647		
Pseudo R <sup>2</sup> = 0.825		

The model has considerable statistical and economic significance. Almost all the explanatory variables account for 82% in explaining the evolution of the technical efficiency score.

According to Table 4, population density significantly and positively affects the efficiency score. In this context, the CPT companies located in densely populated cities are favored and show a better efficiency in less populated cities. This population density presents the potential demand for transport and identifies the relevant market for CPT. Additional demand induced by population growth will enable the company to fill its buses better, avoid empty returns and increase the bus turnover rate. However, for a constant supply capacity, this increase in demand is likely to have the opposite effect on bus overuse and service quality. Therefore, the supply of CPT must also follow quantitatively and qualitatively the evolution of this demand.

The inefficiency of some CPT companies, induced by low population density, has been demonstrated by several studies such as those of Margari et al. 2007; Wang et al. 2015; Garcia Sanchez 2009, etc.

The estimation results also show a positive correlation between road density and efficiency score. However, this correlation is very weak. Road density was calculated as the length of roads per agglomeration on its surface. It indicates the availability and quality of the road infrastructure. This infrastructure presents the support on which buses circulate.

Its availability and quality necessarily determine of maintenance, depreciation and even operation costs of the buses. These costs will be more expensive as the quality of the infrastructure will be poor. Likewise, this quality of infrastructure conditions the fluidity of urban traffic and affects the commercial speed of buses and their technical condition.

Road congestion due to lack of sufficient infrastructure and lack of a bus prioritization system (specific site) reduces the commercial speed of buses and negatively affects both the quality and quantity of services offered. It should also be noted that the creation of a new road makes it possible to promote urban sprawl in the region in question, promote mobility and create additional transport demand, part of which will be captured by public transport.

<sup>5</sup> The estimation method used is ordinary least squares. Several studies have shown that this method is sufficient to explain the efficiency score (Hoff, 2007,; McDonald, 2009).

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The motorization rate reflects the availability of a private car for households in a region. It implies both the intensity of intermodal competition (between bus and private car) and the fluidity of traffic. Indeed, above a certain level of traffic, an increase in the number of private car increases road congestion and reduces the commercial speed of buses. Low commercial speed bus is a source of direct additional costs for the company in terms of fuel consumption, reduced bus turnover and deterioration of service quality through longer journey times. Hence the negative effect of the motorization rate on the technical efficiency demonstrated by our model and explained primarily by its effects on congestion and reduction of commercial speed.

Second, high rate of motorization implies a rougher level of intermodal competition that favors the private car. The two modes are substitutable and any increase in the share of private cars in citizens' journeys implies a decrease in the share of bus transport. The decline in the share of CPT actually observed in all regions is explained particularly for the dominance of private cars and informal transport in users' journeys thanks to their advantages in terms of speed, availability, comfort and punctuality.

However, the coefficient associated with the number of firm is negative, implying that when the number of firm in a region increases, the technical efficiency of the regional CPT system decreases. This can be explained by the much lower nature of collective passenger transport, particularly in Tunisia. In fact, the number of firm variable has been included to indicate the level of development and wealth of the region. More than the number of firms grows, more than the employability grows and the standard of living of the citizens improves. Particularly paying users (who pay the full price) will be encouraged to change their modal choice from bus mode to other more reliable alternative modes (private car or taxi) (Quinet, 1998).

The mean network length variable is negatively correlated with the efficiency scores. This is explained by the fact that an extended network does not necessarily imply a higher number of passengers because the large proportion of travelers move in the urban area of the city at short distances and this traffic decreases with distance. Generally long-distance lines are of a suburban nature, reserved for serving rural areas on the outskirts of cities and characterized by low traffic density and low frequency. Their occupancy rate is low, journey times are high and bus turnover is low. They require more inputs (bus, work and energy) to be guaranteed, but they imply low profitability. They are operated to a large extent for purely social reasons in order to ensure accessibility for both high and other users to shopping and service centers located in the city.

According to our estimates, more than the share of student traffic grows, more than the level of efficiency of the companies decreases. Generally, school traffic is the highest for all transport companies. The average share of school traffic in our sample is around 69% and varies between 46% (STT) and 89% (SORETRAK). However, this traffic is the least profitable. In fact the subscriber tariff represents only 10% of the full price paid by a normal passenger. In the absence of sufficient supply capacity and self-financing to renew the obsolete bus fleet, the increase in the number of pupils and students transported may inflate the output evaluated in PKT, but destroys the financial profitability of companies. The latter record a loss of customers paying the full price who can better guarantee that operating costs are covered. In fact, we note that CPT companies are losing their paying clientele to the detriment of students, whose numbers grow from one year to another by an average of more than 6%.

Unfortunately, these public companies, unlike private companies, do not select their clients. They must offer a public transport service that meets the principles of social equity and territorial universality, even at a loss. In return, they are supposed to be subsidized by the state. But these subsidies are largely insufficient for them to cover their operating costs and increase their production. These companies have to find a compromise between the obligation to provide public services and the need to make their activity profitable and improve the quality of their services. They must not reduce the number of subscribers, but they must combat the flight of paying users and increase their number.

In order to overcome this deficiency, some authors (Li et al. 2013) have proposed the separation of school traffic from paying passenger traffic by providing special planned traffic at specific time margins either for schoolchildren or for some establishments and/or industrial enterprises (conventional transport). They may also limit the number of trips of subscribers according to their essential needs in order to rationalize their bus use. These solutions can increase the attractiveness of buses, reduce their overloading, optimize their rotation, improve the quality of service and increase the profitability of trips.

So we can therefore associate several sources of inefficiency in the Tunisian CPT sector, which are related to the poor allocation of inputs, the mismatch between the size of the industry and demand, and exogenous factors relating particularly to the size of the region and its level of equipment and motorization. These two factors may constitute limits to the increase in the size of a firm so that it can benefit from scale and network effects and be able to produce its services at the lowest cost and with better quality. They reduce the competitiveness of this mode of transport compared to road modes.

Consequently, it is essential to take account of these regional specificities in order to properly allocate the volume of investment in transport equipment and subsidies between regions and companies.

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## CONCLUSION

The public transport sector is an indispensable activity for the mobility of the population and the promotion of sustainable transport. Today it is facing increasingly tough competition from private individual transport and quantitative and qualitative changes in user requirements. As such, it is called upon to evaluate its efficiency in order to diagnose its current position and to determine and explain its sources of performance. This evaluation is an important instrument for providing some answers to the anomalies observed in the firms and for shedding systematic light on the efficiency differential between the CPT firms.

The need to measure the performance of the CPT sector has given rise to a wide range of theoretical and empirical approaches and studies that have enriched this field of research. In particular, these studies have adopted two approaches to empirical analysis: one based on parametric modeling (SFA model) and the other on non-parametric modeling (DEA model). The latter approach has shown greater performance in measuring a firm's technical efficiency score thanks to its flexibility and its ability to calculate the efficiency score with reference not to the average efficiency of the sample, but to the most efficient firms in the sample.

However, this non-parametric approach alone does not make it possible to take into account exogenous factors that may influence the firm's supply and demand conditions and consequently affect its efficiency level. It integrates in its model only the output and input vectors. In this case, the results obtained may be insufficient to explain the various sources of inefficiency in the firm. To fill this gap, recent work has opted for a two-stage model in which the DEA model is combined with a Tobit regression.

A second problem in assessing the efficiency of the transport industry is the identification of output. This service industry offers a variety of goods of varying quality that are distributed over a network. Aggregating this output into a single indicator does not reflect the true production process of the transmission company and limits the information and significance of the obtained results. Recent studies have tried to disaggregate this output by integrating the different characteristics of the network and quality of service into its definition and measurement. This disaggregation of transmission output has yielded more meaningful results and more operational information regarding the causes of efficiency differences between the transmission companies studied.

The aim of our work is to assess the level of technical efficiency and scale of Tunisian CPT companies, to identify endogenous and exogenous factors that may explain their inefficiency and to analyze their economic implications on the sector's performance.

Our approach is based on a two-stage DEA model. In the first stage, we used the classic DEA model in its two versions CRS and VRS under input orientation, to calculate the technical efficiency and scale score of each company throughout the study period. This model was applied to a sample of 117 MUMS's composed of panel data on the 13 Tunisian public passenger transport companies covering the single urban network, over a 9-year period from 2009 to 2017.

The output selected in this model is of the hedonic type combining an aggregate output evaluated in PKT with the characteristics of the offer such as the Seat- Kilometer Offered, the occupancy rate, the number of lines, and the age of the fleet. At the input level, we chose three standard variables such as the number of buses, the number of employees and the fuel consumption.

After comparing the companies in our sample in terms of total technical, pure technical and scale efficiency scores, and proposing the necessary adjustments in resource allocation so that these companies could reach the CRS efficiency frontier. We proceeded to the second step which consists in estimating these efficiency scores according to a number of control variables reflecting the economic, geographical and demographic environment in which these companies operate.

A variety of explanatory variables were incorporated to explain the efficiency gaps observed between the MISPs in our sample, such as road density, number of firms, population density, motorization rate, average network length and share of student traffic. The results of the first model showed, on the one hand, a total technical inefficiency of the entire VCT system in Tunisia with an average efficiency score of 0.52. On the other hand, the results of the second model showed a total technical inefficiency of the entire VCT system in Tunisia with an average efficiency score of 0.52. The results of the third model showed a total technical inefficiency of the entire VCT system in Tunisia with an average efficiency score of 0.52. In the other side, a strong heterogeneity in the efficiency scores between the companies. There are only three companies near the CRS efficiency frontier such as STT, STS and SRTB. While the others scored high levels of inefficiency.

This inefficiency lies particularly in overstaffing and inefficient use of resources, under-capacity, and overloading of buses that reflect poor quality of service and imply deteriorating bus conditions and high failure rates.

The most efficient transport companies are those with a more branched route network, a younger bus fleet, better labor and capital productivity by using less labor and rationalizing their bus use, etc. We also found that the largest firms have the highest level of efficiency.

Our results also showed that the CPT industry in Tunisia shows increasing returns to scale and that there is potential for improvement by exploiting economies of scale particularly for small and medium sized enterprises.

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Similarly, and in line with several studies, our results have shown the importance of attribute variables that characterize the supply of transport services in explaining the efficiency gaps between the studied firms.

The results of the second model showed that there are several exogenous factors that characterize the technical, demographic and economic environment in which firms operate that significantly affect efficiency. They indicate that the average length of the network, the motorization rate, the number of firms and the share of pupil traffic, negatively affect the efficiency score, while road and population density have a significant and positive impact on the technical efficiency level of Tunisian CPT firms. This efficiency is all the higher as the population served is dense, the road network is well maintained, the motorization rate is low, the lines are of short or medium distances and the share of student traffic is low.

These results will necessarily have implications both for the authorities involved in the regulation of the CPT sector and for the companies producing bus services. As far as the public authorities are concerned, their objective is to meet the increased needs of the population in terms of urban transport under the best conditions of cost and quality of service. As has already been shown, this performance is dependent on environmental conditions directly related to the territorial management of local authorities, which must provide the necessary infrastructure equipment so that the CPT sector can carry out its functions in the most efficient way.

Furthermore, public authorities can use this efficiency ranking to allocate subsidies and investments by favoring the most efficient companies and introducing an incentive compensation mechanism based on the level of efficiency achieved (Santos et al. 2013). For firms, efficiency assessment will enable them to identify their main sources of inefficiency and to identify best practices and actions needed to remedy them. By comparing themselves with efficient companies serving as benchmarks, inefficient firms are called upon to adjust their size to critical size, to develop new services favoring specialized and cost-effective transport, to improve the technical state of their bus fleets to increase their availability, etc.

However, given the current loss-making financial situation of these companies and their supervisory bodies, fleet renewal and investment in new transport telematics are proving difficult. The strategy for reforming this sector should target, on the one hand, increasing the size of small and medium-sized enterprises through a process of horizontal concentration, on the other hand, selecting more profitable market niches (reducing or optimizing the use of school transport), and finally the possibilities of opening up to private investors through privatization or public-private partnership actions. This will encourage these companies to reduce their production costs, improve their management practices and diversify and improve the quality of the services offered.

It is true that our model did not take into account the governance factor or the nature of the firm's capital or even the market structure to explain the performance gap, since all the firms in our sample are public in nature and occupy a regional monopoly position, but several studies (Delhaesse et al. 1992; Kumar. 2011) have revealed that the institutional factors of administrative management and capital ownership are sources of inefficiency and have shown that private management is more efficient than public management.

These issues relating to the choice of governance mode and more particularly to the selection of the type of contract between the authorities and the transport company will be the subject of our subsequent studies.

It should also be recognized that the calculated estimators are deterministic by ignoring the impact of statistical noise on the efficiency score. Our study can therefore be extended several times.

### REFERENCES

- 1) Atkinson S. and Cornwell C. (1994), "Parametric Estimation of Technical and Allocative Inefficiency with Panel Data" *International Economic Review*, vol. 35, n°1, P. 231-243
- 2) Banker, R. D., Charnes, A. and Cooper, W. W. (1984), "Some models for estimating technical and scale inefficiencies in data envelopment analysis". *Management Science*, vol. 30. n°9. P. 1078-1092.
- 3) Berechman, J., (1993). "Public Transit Economics and Deregulation Policy". North-Holland.
- 4) Boame A. K (2004), "The technical efficiency of Canadian urban transit systems", *Transportation Research Part E*, vol. 40, P. 401-416
- 5) Charnes A., Cooper W.W. and Rhodes E. (1978), "Measuring the efficiency of decision making units". *European Journal of Operational Research*. vol. 2. n°6, P.. 429 – 444.
- 6) Charnes, A., Cooper W. W., Lewin A. Y. and Seiford L. M. (1995), "Data Envelopment Analysis: Theory: Methodology and Applications". Boston.
- 7) Chu, X., Fielding, G.J. and Lamar, B.W., (1992), "Measuring transit performance using data envelopment analysis". *Transportation Research A*, vol. 26, n°3, P. 223-230.

## Measuring the Technical Efficiency of the Tunisian Collective Passenger Transport Companies Using Two-Stage DEA Model

- 8) Coelli T., Prasada Rao D., and Battese G. (1998), "An Introduction to Efficiency and Productivity Analysis" Kluwer Academic Publishers.
- 9) De Borger B., Kerstens K., and Costa (2002), "Public transit performance: what does one learn from frontier studies?" *Transport Reviews*, vol. 22, n° 1, P. 1–38,.
- 10) Delhaese, B., Perelman, S., and Thiry, B. (1992), 'Substituabilité partielle des facteurs et efficacité- coût : l'exemple des transports urbain et vicinal Belges'. *Economie et Prévision*, vol. 32, . n°1, P. 105 – 115.
- 11) Farrell, M.J., (1957), "The measurement of Productivity Efficiency", *Journal of the Royal Statistical Society*, n°120, P. 253-281.
- 12) Garcia Sanchez (2009), "Technical and Scale Efficiency in Spanish Urban Transport: Estimating with Data Envelopment Analysis", *Advances in Operations Research*, vol 2009, P. 1- 15.
- 13) Hirschhausen, C. and Cullmann, A. (2010), "A nonparametric efficiency analysis of German public transport companies". *Transportation Research Part E: Logistics and Transportation Review*. vol.46, n°3, P. 436-445.
- 14) Hoff, A. (2007) "Second Stage DEA: Comparison of Approaches for Modelling the DEA Score." *European Journal of Operational Research*, n°, 181, P.425-435.
- 15) Jara-Diaz S.R. (1982), "Transportation product, transportation function and cost functions", *Transportation Science*, n° 16, P. 522–539.
- 16) Karlaftis, M. (2004), "A DEA approach for evaluating the efficiency and effectiveness of urban transit systems", *European Journal of Operational Research*, n°152, P. 354-364.
- 17) Karlaftis M. G. and Tsamboulas D. (2012), "Efficiency measurement in public transport: Are findings specification sensitive?", *Transportation Research Part A*, n° 46, P. 392–402
- 18) Kerstens, K., (1996), "Technical efficiency measurement and explanation of French urban transit companies", *Transportation Research Part A*, vol.30. P.431 - 452.
- 19) Kumar S. (2011), "State road transport undertakings in India: technical efficiency and its determinants", *Benchmarking an International Journal*. vol.18. n°5. P. 616–643.
- 20) Levaggi, R. (1994), "Parametric and non-parametric approach to efficiency: the case of urban transport in Italy". *Studi Economici*, vol. 49, no. 53, P. 67–88.
- 21) Li J., Chen X., Li X., and Guo X. (2013), "Evaluation of Public Transportation Operation Based on Data Envelopment Analysis" *Social and Behavioral Sciences*. vol. 96, P.148-155.
- 22) McDonald J. (2009) "Using least squares and tobit in second stage DEA efficiency analyses"
- 23) *European Journal of Operational Research*, vol. 197, n° 2, P. 792-798
- 24) Margari B. B., Erbetta F., Petraglia C. and Piacenza M. (2007), "Regulatory and environmental effects on public transit efficiency: A mixed DEA-SFA approach", *Journal of Regulatory Economics*, vol 32, n° 2, P. 131-151
- 25) Matas A. and Raymond J. L., (1998), "Technical characteristics and efficiency of urban bus companies : : The case of Spain". *Transportation*, vol.25. P. 243–263.
- 26) Murillo-Zamorano L. R. (2004), "Economic Efficiency and Frontier Techniques", *Journal of Economic Surveys*, vol 118, n° 1, P.33-77.
- 27) Nolan, J. F. (1996). "Determinants of Productive Efficiency in Urban Transit" *Logistics and*
- 28) *Transportation Review*, vol. 32, n° 3, P. 319–342.
- 29) Odeck, J., (2008). "The effect of mergers on efficiency and productivity of public transport services". *Transportation Research Part A*. vol 42. n°3. P. 696–708.
- 30) Quinet E. (1998) "Principes d'économie des transports" Économica , Paris, P.377.
- 31) Sampaio, B. R., Neto, O. L., and Sampaio, Y. (2008), "Efficiency analysis of public transport systems: Lessons for institutional planning". *Transportation Research Part A: Policy and Practice*. vol.42, n°3, P. 445-454.
- 32) Spady R.H. and Friedlander A.F. (1978), "Hedonic Cost Function for the Regulated Trucking Industry", *Bell Journal of Economics*, vol 9, n° 1, P.159-179.
- 33) Tobin, J., (1958), "Estimation of relationships for limited dependent variables". *Econometrica* n°26, P. 24–36.
- 34) Viton, P. A. (1997). "Technical efficiency in multi-mode bus transit: a production frontier analysis", *Transportation Research Part B: Methodological*, vol. 31, n° 1, P. 23-39.
- 35) Wang, HM, Zhu, D, Koppenjan, J, (2015), "A research on relations between governance
- 36) modes and efficiency in China's urban bus transport service" *Review of Managerial*
- 37) *Science* n°9, P. 661–680

## Measuring the Technical Efficiency of the Tunisian Collective Passenger Transport Companies Using Two-Stage DEA Model

- 38) Zhou G., Chung W., Zhang Y. (2014), "Measuring energy efficiency performance of China's transport sector: A data envelopment analysis approach". *Expert Systems with Applications*. vol.41. n°2. P.709–722.
- 39) Zhu W., Yang X., Preston J.(2016), "Efficiency measurement of bus routes and exogenous operating environment effects on efficiency", *Transportation Planning and Technology*, vol. 39, n° .5, P.464-48.



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## Conduction System Disease in Victims of COVID-19



Shirin Sarejloo<sup>1</sup>, Hossein Asadi<sup>2</sup>, Amirhossein Salimi<sup>3</sup>

<sup>1</sup> Cardiovascular Research Center, Shiraz University of Medical Sciences, Shiraz, IR Iran

<sup>2</sup> Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran.

<sup>3</sup> Student Research Committee, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

### ABSTRACT

**Background:** Electrophysiological-related manifestation of COVID-19 is a matter of debate in the literature nowadays. A wide spectrum of arrhythmias was observed among patients who have been infected with COVID-19.

**Objectives:** This study discussed the prevalence of arrhythmias and conduction system disease in patients with COVID-19.

**Method:** In this retrospective study, demographic and electrocardiographic data of 432 expired COVID-19 patients who had been admitted to Faghihi Hospital of Shiraz University of Medical Sciences from August 2020 until December 2020 were reviewed.

**Results:** Atrioventricular nodal block (AVB) was found in 40(9.3%) patients. Furthermore, 28(6.5%) of them suffered from the first degree of AVB, and 12(2.8%) suffered from complete heart block (CHB). Among 189 cases (59.0%) ST-T changes agreed with myocardial infarction or localized myocarditis. Findings of myocardial injury including fragmented QRS and prolonged QTc were observed among 91 (21.1%) and 28 (6.5%) respectively. In victims of COVID-19, conduction disease was not related to any comorbidities. Fragmented QRS, axis deviation, presence of S1Q3T3, and poor R wave progression were significantly related to conduction system abnormalities in victims of COVID-19 (P-value > 0.05)

**Conclusion:** Our findings can serve in future studies that aim to develop a risk stratification method for susceptible COVID-19 patients. The myocardial injury appears to role significantly in COVID-19 morbidity and mortality. Consequently, we recommend health policymakers consider separate catheterization laboratories that provide service only to COVID-19 patients.

**KEYWORDS:** COVID-19, Conduction system, ECG, Atrioventricular block, Iran

### INTRODUCTION

The first studies of COVID-19 considered it to be predominantly a respiratory disease (1). However, more recent evidence highlights multiple organ system involvements in COVID-19 patients, including coagulation system disorders like pulmonary thromboembolism, acute kidney injury, hepatocellular injury, and cardiac and central nervous system complications (2-4). The cardiac complications include thromboembolic events, heart failure, heart block, acute coronary syndrome, myocarditis, arrhythmias, and sudden cardiac death (5).

Electrophysiological-related manifestation of COVID-19 is a matter of debate in the literature nowadays. A wide spectrum of arrhythmias was observed among patients who have been infected with COVID-19. (6). Moreover, multiple case reports introduce atrioventricular block as a potential manifestation of COVID-19 (7). Furthermore, previous studies have been reported several conduction system abnormalities including T-wave change, QTc interval prolongation, and arrhythmias among COVID-19 patients. Moreover, in-hospital mortality risk increased with increasing abnormal ECG scores (8). In another study investigating the association between electrocardiographic features and mortality in COVID-19 patients in a large tertiary care hospital in Northern Nevada, the prevalence of AVB was 11.8%. Another article conducted a rigorous patient-level analysis to determine the association of acute malignant cardiac arrhythmias, such as tachy- or bradyarrhythmias, and mortality in hospitalized patients with COVID-19. The prevalence of AVB was 3.5%. Among them, 2 were associated with MI, 2 had metabolic abnormalities, suggesting that refractory shock was primarily responsible for conduction block, and 1 patient had AV block in the setting of non-ST-segment-elevation myocardial infarction and newly depressed left ventricular ejection fraction (9-11). However, no association between the presence of AVB and mortality was reported in these articles.

As presented before, the knowledge of electrophysiological abnormalities and particularly atrioventricular blocks is largely based on very limited data. The present paper aims to describe electrocardiographic abnormalities in demised COVID-19 patients.



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### METHODOLOGY

#### Patient selection

This study is a descriptive investigation that retrospectively reviewed 432 expired COVID-19 patients who were admitted to Faghihi Hospital of Shiraz University of Medical Sciences from August 2020 until December 2020. All the expired patients of COVID-19 who were over 18 years old were studied. Those who were known cases of cardiovascular disease were excluded. Faghihi Hospital, located in Shiraz, Fars Province, is one of the major tertiary teaching hospitals and is responsible for the treatments for COVID-19 assigned by the government. COVID-19 was confirmed in these patients by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) RNA detection with the nasal and pharyngeal swab, performed at admission or during hospitalization.

#### Data collection

Electronic demographic and on-paper medical records were evaluated. The data was gathered into a planned-out questionnaire. The questionnaire included demographic data, underlying diseases, and ECG factors. The data was collected by six independent practitioners. ECGs were interpreted by two cardiologists blinded to the patients' information and confirmed by an electrophysiologist. Cardiologists interpreted ECGs basic parameters like rhythm, rate, axis, hypertrophy, enlargement, relatively new findings on COVID-19 (ST elevation and atrioventricular conductance disturbances), repolarization variants (J elevation, early repolarization, Brugada pattern, U wave, QTc prolongation, QT dispersion (QTD), the slope of the terminal part of T wave (T-slope), depolarization abnormalities (Bundle Branch Block, low voltage QRS, poor R wave progression, and fragmented QRS (fQRS), QRS duration prolongation), and ECG pulmonary patterns such as S1Q3T3. All ECGs were taken by the hospital's employed and trained technicians who were blinded to the purpose of the study and the patient's medical information using "Electrocardiogram Dena650" produced by "SAADAT company, Tehran, Iran".

#### Statistical analysis

All statistical analyses were performed by Statistical Package for the Social Sciences (SPSS), version 19.0 (IBM corp.), for windows. Categorical variables were shown as frequency and percentages, and continuous variables as mean (SD). The Chi-square test was performed to assess the relationships between ECG parameters and patients' medical conditions with his-Purkinje system disease. A two-sided P-value less than 0.05 was considered statistically significant.

### RESULTS

Among the 432 demised patients, 261(60.4%) were male with a mean age of 67.02 ±14.44 years (28-96). The most prevalent comorbid diseases were Hypertension (47.9% - 207 cases), Diabetes mellitus (36.3% - 157 cases) and heart diseases (35.2% - 158 cases). The prevalence of other co-morbidities is as follow in order of frequency: coronary disease (18.5%- 80 cases), Hyperlipidemia (12.5% - 54 cases), lung disease (8.6% - 37 cases), chronic kidney disease (6.3% - 27 cases).

Regarding heart rate and rhythm, sinus tachycardia (HR>100) and bradycardia (HR<60) were noticed in 100 (23.1%) and 9 (2.3%) patients respectively. Furthermore, abnormal rhythms were noted in 66 (15.2%) patients. The most prevalent arrhythmia was AF (12.5%). Reviewing Electrocardiographic findings, AVB was found in 40(9.3%) patients. Twenty-eight (6.5%) of them suffered from first-degree AVB, and 12(2.8%) suffered from CHB. Among 189 cases (59.0%) ST-T changes agreed with myocardial infarction or localized myocarditis. Findings of myocardial injury including fragmented QRS and prolonged QTc were observed among 91 (21.1%) and 28 (6.5%) respectively. Other conduction system abnormal findings were Bundle Branch Blocks (BBB). The various ECG-related factors demonstrated in table 1. To describe more precisely, the left bundle branch block was seen in 25 (5.8%) patients and the right bundle branch block was seen in 50 (11.6%) patients. Pulmonary diseases- related findings including S1Q3T3, poor R progression, axis deviations, and low voltage ECG were reviewed and the prevalence was 14.4% (62 patients), 41.0% (177 patients), 21.7% (94 patients), and 11.3% (49 patients) respectively. Myocardial injury findings such as fragmented QRS and prolonged QTc were assessed with the prevalence of 21.1% (91 patients), 6.5% (28 patients). Primary electrical cardiac diseases such as prominent J wave, Brugada pattern, and early repolarization were detected with a prevalence of 4.4% (19 patients), 1.2% (5 patients), and 4.2% (18 patients).

**Table1. Prevalence of ECG parameters in victims of COVID-19**

ECG parameters		Frequency (N = 432)	Percent
Fragmented QRS	Yes	91	21.1
	No	314	78.9
ST-T change	Yes	189	59.0
	No	243	56.3

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Rhythm	Sinus rhythm	366	84.7
	AF	54	12.5
	others	12	2.8
Rate	Bradycardia (HR<60)	9	2.1
	Normal (60<HR<100)	323	74.8
	Tachycardia (HR>100)	100	23.1
Axis deviation	Normal	338	78.2
	Left	29	6.7
	Right	65	15.0
Hypertrophy	No	383	88.7
	LVH	36	8.3
	RVH	6	1.4
	RAE	4	0.9
	LAE	3	0.7
AVB	Yes	40	9.3
	No	392	90.7
QTc 1	<500	281	65.0
	>500	150	34.7
QTc 2	Male AND >440 OR Female AND >460	28	6.5
	others	403	93.3
QTd	<28	377	87.3
	>28	55	12.7
J wave	Yes	19	4.4
	No	427	95.6
U wave	Yes	45	10.4
	No	387	89.6
Brugada pattern	Yes	5	1.2
	No	427	98.8
Early repolarization	Yes	18	4.2
	No	414	95.8
BBB	Normal	356	82.4
	LBBB	25	5.8
	RBBB	50	11.6
T slope	<30	16	3.7
	30-60	405	93.8
	>60	11	2.5
S1Q3T3	Yes	62	14.4
	No	370	85.6
Low voltage QRS	Yes	49	11.3
	No	383	88.7
PRP	Yes	177	41.0
	No	255	59.0

MI: Myocardial Infarction, AVB: Atrioventricular block, , LVH: left ventricular hypertrophy, RVH: right ventricular hypertrophy, RBBB: right bundle branch block, LBBB: left bundle branch block, QTc: corrected Q-T interval, QTd: Q-T interval dispersion, T slope: T-wave terminal slope, PRP: Poor R wave Progression.

Table 2 demonstrate the correlation of comorbidities and conduction system disease in victims of COVID-19, conduction disease was not related to any underlying medical condition.

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**Table2. Association of patients' medical conditions and conduction system disease in victims of COVID-19**

Medical condition		Patients without HPD (N=317)	Patients with HPD (N=108)	P value
Sex	Female	125 (73.1)	46 (26.9)	0.654
	Male	196 (75.1)	65 (24.9)	
IHD	Yes	57 (71.3)	23 (28.8)	0.477
	No	260 (75.4)	85 (24.6)	
DM	Yes	113 (72.0)	44 (28.0)	0.357
	No	204 (76.1)	64 (23.9)	
Renal disease	Yes	42 (79.2)	11 (20.8)	0.501
	No	275 (73.9)	97 (26.1)	
Lung disease	Yes	23 (62.2)	14 (37.8)	0.078
	No	292 (75.6)	94 (24.4)	
Hyperlipidemia	Yes	38 (70.4)	16 (29.6)	0.503
	No	279 (75.2)	92 (24.8)	
CKD	Yes	19 (70.4)	8 (29.6)	0.648
	No	298 (74.9)	100 (25.1)	
HTN	Yes	151 (72.9)	56 (27.1)	0.504
	No	165 (76.0)	52 (24.0)	

HTN: hypertension, DM: diabetes mellitus, IHD: ischemic heart disease, HLP: hyperlipidemia, CKD: chronic kidney disease.

Distribution of different parameters of ECG displayed in table 3. Assessing ECG parameters in conduction system disease in victims of COVID-19, ST-T changes, fragmented QRS, axis deviation, presence of S1Q3T3, and poor R wave progression were significantly related to conduction system disease in victims of COVID-19 (P-value > 0.05)

**Table3. ECG parameters in conduction system disease in victims of COVID-19**

ECG parameters prevalence		Patients without HPD (N=317)	Patients with HPD (N=108)	P value
Fragmented QRS	Yes	53 (58.2)	38 (41.8)	<0.001
	No	268 (78.6)	73 (21.4)	
ST-T change	Yes	125 (66.1)	64 (33.9)	0.001
	No	196 (80.7)	47 (19.3)	
Rhythm	Sinus rhythm	279 (76.2)	87 (23.8)	0.095
	AF	34 (63.0)	20 (37.0)	
	others	8 (66.7)	4 (33.3)	
Rate	Bradycardia (HR<60)	5 (55.6)	4 (44.4)	0.069
	Normal (60<HR<100)	234 (72.4)	89 (27.6)	
	Tachycardia (HR>100)	82 (82.0)	18 (18.0)	
Axis deviation	Normal	283 (83.7)	55 (16.3)	<0.001
	Left	14 (48.3)	15 (51.7)	
	Right	24 (36.9)	41 (63.1)	
QTc 1	<500	211 (75.1)	70 (24.9)	0.728
	>500	110 (73.3)	40 (26.7)	
QTc 2	Male AND >440	300 (74.4)	103 (25.6)	0.999
	Female AND >460	21 (75.0)	9 (25.0)	
QTd	<28	276 (73.2)	101 (26.8)	0.190
	>28	45 (81.8)	10 (18.2)	
J wave	Yes	13 (68.4)	6 (31.6)	0.592
	No	308 (74.6)	105 (25.4)	

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U wave	Yes	32 (71.1)	13 (28.9)	0.592
	No	289 (74.7)	98 (25.3)	
Early repolarization	Yes	15 (83.3)	108 (26.1)	0.581
	No	306 (73.9)	108 (26.1)	
T slope	<30	12 (75.0)	4 (25.0)	0.714
	30-60	302 (74.6)	103 (25.4)	
	>60	7 (63.6)	4 (36.4)	
S1Q3T3	Yes	38 (61.3)	24 (38.7)	0.018
	No	283 (76.5)	87 (23.5)	
Low voltage QRS	Yes	42 (85.7)	7 (14.3)	0.057
	No	279 (72.8)	104 (27.2)	
PRP	Yes	121 (68.4)	56 (31.6)	0.025
	No	200 (78.4)	55 (21.6)	
MI: Myocardial Infarction, AVB: Atrioventricular block, LVH: left ventricular hypertrophy, RVH: right ventricular hypertrophy, RBBB: right bundle branch block, LBBB: left bundle branch block, QTc: corrected Q-T interval, QTd: Q-T interval dispersion, T slope: T-wave terminal slope, PRP: Poor R wave Progression.				

### DISCUSSION

Reviewing past literature, there is mounting evidence in support of the association between influenza pneumonia and heart diseases and it has been reported that influenza infections have been associated with a six-fold increased risk of acute MI (12, 13). It is likely that COVID-19 also, directly and indirectly, affects the cardiovascular system and the heart in particular (14). This topic discusses the prevalence of arrhythmias and conduction system disease in patients with COVID-19.

Triggers of Arrhythmia in Coronavirus Disease 2019 have not been specified yet. However, potential reported triggers are as follows (15). First, electrolyte imbalance caused by complications of COVID-19 including diarrhea, acute kidney injury, or severe sepsis is the notable cause (16). Second, SARS-CoV-2-induced myocardial injury due to upregulation of ACE2 receptor during the viral invasion and severe hypoxia-induced myocyte necrosis is another potential cause of arrhythmias (17). Besides, acute myocardial infarction due to demand/supply imbalance and arterial thrombotic event secondary to hypercoagulable state can cause acute arrhythmias (18-21). In addition, Stress-induced cardiomyopathy owing to physiological stress and cytokine storm about sepsis and high inflammatory state is another potential mechanism triggering arrhythmias (15, 22-24). Moreover, prolonged QTc-inducing malignant ventricular arrhythmias and channelopathies induced by off-label medical therapy and antiviral therapy could be introduced as direct triggers of arrhythmias (25-29).

The most remarkable result to emerge from the data was the prevalence of advanced AVB in victims of COVID-19. This prevalence was not yet assessed in expired CPVID-19 patients however, the reported range of prevalence of AVB in COVID-19 patients was from 3 to 12 percentages in different articles (8, 30). All types of AVBs were 40(9.3%) prevalent in our study. Among those with AV block, 12(2.8%) cases suffered from third-degree (Complete Heart Block). CHB has been assumed to be a rare ECG feature of COVID-19 and this novel finding was only been reported in a few case studies (31-33).

Another interesting result was the high prevalence of fragmented QRS, prominent J wave, and ST-T wave change. These parameters can be directly related to myocardial injury induced by SARS-CoV-2 infection. In addition, the high incidence of S1Q3T3 and LBBB in this study could be an indicator of pulmonary involvement in COVID-19 victims. S1Q3T3 is a relatively specific pattern for pulmonary thromboembolism and a potential cause of death (21, 34-37).

Moreover, assessing ECG parameters in conduction system disease in victims of COVID-19, ST-T changes, fragmented QRS, axis deviation, presence of S1Q3T3, and poor R wave progression were significantly related to conduction disease in victims of COVID-19. possible suggestive of new-onset myocardial infarctions during the infection, increasing the risk of mortality (38-40). This may indicate that COVID-19 adversely affects cardiac myocardial tissue more than how it was taken for granted. Besides, our study provides further evidence for the observed ST-T waves changes in COVID-19 patients, suggestive of myocardial infarction or localized myocarditis (41, 42).

In line with previous studies, the most prevalent arrhythmia was atrial fibrillation (43, 44). It is alerting that we witnessed these findings in patients who had no evidence of arrhythmia before their admission. Therefore, we suggest future studies scope on the mechanism of arrhythmogenicity of COVID-19.

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### LIMITATIONS

This is a single-center study, conducted retrospectively. Unfortunately, assessing the presence of myocarditis was not possible due to the absence of data on serum markers and echocardiographic examination for most of our enrolled patients.

### CONCLUSION

To the best of our knowledge, this study is the first study that exclusively assessed expired COVID-19 patients and cleared AVB prevalence among them. Our findings can serve in future studies that aim to develop a risk stratification method for susceptible COVID-19 patients. The myocardial injury appears to role significantly in COVID-19 morbidity and mortality. Consequently, we recommend health policymakers consider separate catheterization laboratories that provide service only to COVID-19 patients.

### ABBREVIATIONS

Abbreviations COVID-19: Coronavirus; ECG: Electrocardiogram; SUMS: Shiraz University of Medical Sciences; BBB: Bundle branch block; PRP: Poor R wave progression; fQRS: Fragmented QRS; STEMI: ST-segment elevation myocardial infarction; AVB: Atrioventricular conduction block; T slope: Slope of the terminal part of T wave; QTc: Corrected QT; QTD: QT dispersion; HTN: Hypertension; DM: Diabetes Mellites; IHD: Ischemic heart disease; CKD: Chronic kidney disease.

### DECLARATIONS

#### Ethics approval and consent to participate

Written informed consent was obtained from the patients in our study. The purpose of this research was completely explained to the patient and was assured that their information will be kept confidential by the researcher. This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the ethical committee of Shiraz University of Medical Sciences.

#### Availability of data and materials

Written informed consent was obtained from the patients regarding the publication of this study. There is no identifying information in this article.

#### Competing interests

The authors declare that they have no competing interests.

#### Informed Consent

Written informed consent was obtained from the patients. A copy of the written consent is available for review by the Editor of this journal.

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### REFERENCES

- 1) Zibaenezhad MJ, Sayadi M, Bazrafshan H, Daneshvar Z, Parsa N, Farshadi N, et al. The Prevalence of Cardiovascular Risk Factors in Fatal Cases of COVID-19 in Fars Province, Iran. *International Cardiovascular Research Journal*. 2021;15(1).
- 2) Gupta A, Madhavan MV, Sehgal K, Nair N, Mahajan S, Sehrawat TS, et al. Extrapulmonary manifestations of COVID-19. *Nature medicine*. 2020;26(7):1017-32.
- 3) Asadi-Pooya AA, Nabavizadeh SA, Sadeghian S, Shahisavandi M, Barzegar Z, Nezafat A, et al. Psychological Problems Among Patients With Chronic Medical Disorders During the COVID-19 Pandemic. *Acta Medica Iranica*. 2021;59(6).
- 4) Shahrokh Sadeghi Boogar Zohre Khodamoradi SR, Hamed Bazrafshan Drissi. Acute Pulmonary Embolism as an Important Differential Diagnosis of COVID-19: A Case Report. *Medical Case Reports*. 2020;6(5):156.
- 5) Hatamnejad MR, Tafti FF, Abdi A, Boogar SS, Bazrafshan H. Coronary Thrombosis in a Patient with COVID-19 Who Was on Anticoagulant Therapy. *International Cardiovascular Research Journal*. 2021;15(3).
- 6) Wen W, Zhang H, Zhou M, Cheng Y, Ye L, Chen J, et al. Arrhythmia in patients with severe coronavirus disease (COVID-19): a meta-analysis. *European review for medical and pharmacological sciences*. 2020;24(21):11395-401.
- 7) Nikoo MH, Mozaffari R, Hatamnejad MR, Bazrafshan M, Kasaei M, Bazrafshan H. Systolic dysfunction and complete heart block as complications of fulminant myocarditis in a recovered COVID-19 patient. *Journal of cardiology cases*. 2021;24(4):177-81.

## Conduction System Disease in Victims of COVID-19

- 8) Yang D, Li J, Gao P, Chen T, Cheng Z, Cheng K, et al. The prognostic significance of electrocardiography findings in patients with coronavirus disease 2019: A retrospective study. *Clinical cardiology*. 2021;44(7):963-70.
- 9) Turagam MK, Musikantow D, Goldman ME, Bassily-Marcus A, Chu E, Shivamurthy P, et al. Malignant Arrhythmias in Patients With COVID-19: Incidence, Mechanisms, and Outcomes. *Circulation Arrhythmia and electrophysiology*. 2020;13(11):e008920.
- 10) Sarejloo S, Abadifard E, Othman ZJ, Zafarani F, Khanzadeh M, Sadigh-Eteghad S, et al. Neutrophil to lymphocyte ratio and platelet to lymphocyte ratio in poststroke depression: A systematic review and meta-analysis. *Disease Markers*. 2022;2022.
- 11) Sarejloo S, Shahri MM, Azami P, Clark A, Hass E, Salimi M, et al. Neutrophil to Lymphocyte Ratio as a Biomarker for Predicting the Coronary Artery Abnormality in Kawasaki Disease: A Meta-Analysis. *Disease Markers*. 2022;2022.
- 12) Kwong JC, Schwartz KL, Campitelli MA. Acute Myocardial Infarction after Laboratory-Confirmed Influenza Infection. *The New England journal of medicine*. 2018;378(26):2540-1.
- 13) Madjid M, Aboshady I, Awan I, Litovsky S, Casscells SW. Influenza and cardiovascular disease: is there a causal relationship? *Texas Heart Institute journal*. 2004;31(1):4-13.
- 14) Long B, Brady WJ, Koyfman A, Gottlieb M. Cardiovascular complications in COVID-19. *The American journal of emergency medicine*. 2020;38(7):1504-7.
- 15) Kanthasamy V, Schilling RJ. Electrophysiology in the Era of Coronavirus Disease 2019. *Arrhythmia & electrophysiology review*. 2020;9(3):167-70.
- 16) Nogueira SÁ R, Oliveira SCS, Carvalho AFM, Neves JMC, Silva L, Silva Junior GBD, et al. Renal changes and acute kidney injury in covid-19: a systematic review. *Revista da Associacao Medica Brasileira (1992)*. 2020;66Suppl 2(Suppl 2):112-7.
- 17) Kochi AN, Tagliari AP, Forleo GB, Fassini GM, Tondo C. Cardiac and arrhythmic complications in patients with COVID-19. *Journal of cardiovascular electrophysiology*. 2020;31(5):1003-8.
- 18) Abou-Ismaïl MY, Diamond A, Kapoor S, Arafah Y, Nayak L. The hypercoagulable state in COVID-19: Incidence, pathophysiology, and management. *Thrombosis research*. 2020;194:101-15.
- 19) Zhu Y, Xing W, Wang H, Song J, Sun Z, Li X. Characteristics of patients with ST-segment elevated myocardial infarction (STEMI) at the initial stage of the COVID-19 pandemic: a systematic review and meta-analysis. *Infectious diseases (London, England)*. 2021:1-11.
- 20) Asadi-Pooya AA, Farzadaghi M, Bazrafshan M. Impacts of the COVID-19 pandemic on Iranian patients with epilepsy. *Acta Neurologica Scandinavica*. 2020;142(4):392-5.
- 21) Rostamihosseinkhani M, Hooshmandi E, Janipour M, Fadakar N, Ostovan VR, Bazrafshan H, et al. True Mycotic Aneurysms: A Report of Three Patients with Internal Carotid Artery Aneurysm and Mucormycosis, and Literature Review. 2021.
- 22) Mehrabi Z, Salimi M, Niknam K, Mohammadi F, Mamaghani HJ, Sasani MR, et al. Sinoorbital Mucormycosis Associated with Corticosteroid Therapy in COVID-19 Infection. *Case Reports in Ophthalmological Medicine*. 2021;2021.
- 23) Shafiekhani M, Shahabinezhad F, Niknam T, Tara SA, Haem E, Mardani P, et al. Evaluation of the therapeutic regimen in COVID-19 in transplant patients: where do immunomodulatory and antivirals stand? *Virology journal*. 2021;18(1):1-10.
- 24) Sarejloo S, Kheradjo H, Haghi SE, Hosseini S, Gargari MK, Azarhomayoun A, et al. Neutrophil-to-Lymphocyte Ratio and Early Neurological Deterioration in Stroke Patients: A Systematic Review and Meta-Analysis. *BioMed Research International*. 2022;2022.
- 25) Abdolrahimzadeh Fard H, Mahmudi-Azer S, Sefidbakht S, Iranpour P, Bolandparvaz S, Abbasi HR, et al. Evaluation of chest CT scan as a screening and diagnostic tool in trauma patients with coronavirus disease 2019 (COVID-19): a cross-sectional study. *Emergency Medicine International*. 2021;2021.
- 26) Fard HA, Borazjani R, Sabetian G, Shayan Z, Parvaz SB, Abbasi HR, et al. Establishment of a novel triage system for SARS-CoV-2 among trauma victims in trauma centers with limited facilities. *Trauma Surgery & Acute Care Open*. 2021;6(1):e000726.
- 27) Fard HA, Mahmudi-Azer S, Yaqoob QA, Sabetian G, Iranpour P, Shayan Z, et al. Comparison of chest CT scan findings between COVID-19 and pulmonary contusion in trauma patients based on RSNA criteria: Established novel criteria for trauma victims. *Chinese Journal of Traumatology*. 2022.
- 28) Michaud V, Dow P, Al Rihani SB, Deodhar M, Arwood M, Cicali B, et al. Risk of drug-induced Long QT Syndrome associated with the use of repurposed COVID-19 drugs: A systematic review. *MedRxiv*. 2020.
- 29) Sarejloo S, Dehghani F, Hatamnejad MR, Jahangiri S, Ghaedian T, Salimi M, et al. Risk stratification of diabetic patients with unusual cardiac symptoms using a myocardial perfusion scan. *ARYA Atherosclerosis Journal*. 2022.

## Conduction System Disease in Victims of COVID-19

- 30) He J, Wu B, Chen Y, Tang J, Liu Q, Zhou S, et al. Characteristic Electrocardiographic Manifestations in Patients With COVID-19. *The Canadian journal of cardiology*. 2020;36(6):966.e1-.e4.
- 31) Haddadin FI, Mahdawi TE, Hattar L, Beydoun H, Fram F, Homoud M. A case of complete heart block in a COVID-19 infected patient. *Journal of Cardiology Cases*. 2021;23(1):27-30.
- 32) Ashok V, Loke WI. Case report: high-grade atrioventricular block in suspected COVID-19 myocarditis. *European heart journal Case reports*. 2020;4(Fi1):1-6.
- 33) Hosseini Z, Ghodsi S, Hejazi SF. Persistent Complete Heart Block in a Patient with COVID-19 Infection: a Case Report. *SN comprehensive clinical medicine*. 2021:1-4.
- 34) Ullman E, Brady WJ, Perron AD, Chan T, Mattu A. Electrocardiographic manifestations of pulmonary embolism. *The American journal of emergency medicine*. 2001;19(6):514-9.
- 35) Gharamaleki MV, Habibagahi M, Hooshmandi E, Tabrizi R, Arsang-Jang S, Barzegar Z, et al. The hospitalization rate of cerebral venous sinus thrombosis before and during COVID-19 pandemic era: A single-center retrospective cohort study. 2022.
- 36) Jahangiri S, Mousavi SH, Hatamnejad MR, Salimi M, Bazrafshan H. Prevalence of non-steroidal anti-inflammatory drugs (NSAIDs) use in patients with hypertensive crisis. *Health Science Reports*. 2022;5(1):e483.
- 37) Salimi M, Hosseinpour H, Shahriarirad R, Esfandiari S, Pooresmaeel F, Sarejloo S, et al. Utilization of chest tube as an esophagus stent in pediatric caustic injuries: A retrospective study. *World Journal of Clinical Pediatrics*. 2022;11(5):419.
- 38) Hatamnejad MR, Heydari AA, Salimi M, Jahangiri S, Bazrafshan M, Bazrafshan H. The utility of SYNTAX score predictability by electrocardiogram parameters in patients with unstable angina. *BMC Cardiovascular Disorders*. 2022;22(1):1-11.
- 39) Hoghoughi MA, Kazemi T, Khojasteh A, Habibagahi R, Kalkate Z, Zarei Z, et al. The effect of intervelar veloplasty under magnification (Sommerlad's Technique) without tympanostomy on middle ear effusion in cleft palate patients. *BMC pediatrics*. 2021;21(1):1-6.
- 40) Sarejloo S, Khanzadeh S, Hosseini S, Gargari MK, Lucke-Wold B, Mosalamiaghili S, et al. Role of the Neutrophil to Lymphocyte Ratio in Guillain Barré Syndrome: A Systematic Review and Meta-Analysis. *Mediators of Inflammation*. 2022;2022.
- 41) Nemati R, Ganjoo M, Jadidi F, Tanha A, Baghbani R. Electrocardiography in Early Diagnosis of Cardiovascular Complications of COVID-19; a Systematic Literature Review. *Archives of academic emergency medicine*. 2021;9(1):e10.
- 42) Ostovari A, Shahabinezhad A, Sarejloo S, Mesbahi SA, Saem J, Hamidianshirazi Y, et al. Thromboembolic Events among Multiple Trauma Victims with Pelvic Fractures with Injury Severity Score Greater Than 16 with and without Deep Vein Thrombosis Prophylactic Doses of Enoxaparin. *Surgery Insights*. 2022.
- 43) Romiti GF, Corica B, Lip GYH, Proietti M. Prevalence and Impact of Atrial Fibrillation in Hospitalized Patients with COVID-19: A Systematic Review and Meta-Analysis. *Journal of clinical medicine*. 2021;10(11).
- 44) Abdiardekani A, Salimi M, Sarejloo S, Bazrafshan M, Askarinejad A, Salimi A, et al. Impacts of opium addiction on patterns of angiographic findings in patients with acute coronary syndrome. *Scientific Reports*. 2022;12(1):1-7.



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## Planned Behavior and Social Pressure on Healthcare Workers' Intention to Participate in the COVID-19 Pandemic Response in Vietnam



Le Thanh Huyen<sup>1</sup>, Pham Van Dai<sup>2</sup>, Le Thu Huong<sup>3</sup>

<sup>1,2,3</sup>Hanoi University of Home Affairs

**ABSTRACT:** The fourth wave of the COVID-19 epidemic forced medical workers to make sacrifices for a happy time, rest time, and time to take care of their families to join the frontline against the epidemic. To add to the evidence of previous studies on participatory behavior against the COVID-19 pandemic and to enrich the research literature and policy proposals for the Government of Vietnam, this study applies theory of planned behavior, and social pressure explores the intention of health workers to participate in the COVID-19 pandemic response in Vietnam. This study was conducted through a cross-sectional survey using a purposive sampling technique (n=200). Multivariate linear regression analysis and moderator regression were applied to prove the proposed hypotheses. Research results show theory of planned behavior and social pressure may explain healthcare workers' intentions to participate in the fight against the COVID-19 pandemic. The social pressure plays a moderator role in the relationship between the subjective norms and the intention.

**KEYWORDS:** Theory of Planned Behavior; social pressure; medical staff; The COVID-19 pandemic; Vietnam

### INTRODUCTION

Vietnamese law stipulates that Vietnamese medical staff should understand that taking care of everyone's health is a noble profession, respect the law and strictly comply with professional regulations, and respect the right to cure. Health workers are obliged to actively participate in health propaganda and education, disease prevention and treatment, and treatment of people suffering from accidents and illnesses in the community; exemplary in living a hygienic lifestyle and keeping the environment clean (Vietnam Government, 1996). In dealing with the COVID-19 pandemic in Vietnam, all medical forces have made extremely noble sacrifices and extraordinary efforts (Thanh Nam, 2021). With the fight against COVID-19 reaching its climax, the silent sacrifices of medical forces should be honored across Vietnam (Phong Thu, 2021). Most healthcare workers dealing with the COVID-19 pandemic in Vietnam are civil servants who receive their salaries from the Vietnamese government (Vietnam Government, 2009). Many doctors and nurses volunteer to assist in COVID-19 hotspots (Thai Binh, 2021).

In the long fierce battle with COVID-19 in Vietnam, the enthusiasm of medical staff in pandemic hotspots and their willingness to face difficulties, disadvantages, and sacrifices for patients (Thanh Nam, 2021). Due to the sudden increase in workload, long working hours, and lack of necessary support, the medical staff still cling on (Thuong et al., 2021). In October 2021, about 60% of Vietnamese healthcare workers had to cope with significantly increased workload and working hours during the COVID-19 pandemic. About 40% of them said they experienced discomfort and deterioration in physical health, and 70% suffered from anxiety and depression (Thai Binh, 2021). Therefore, identifying and understanding motivational and behavioral factors is crucial in understanding why an individual performs a behavior to change behavioral practices in society (Nchise, 2012; Jokonya, 2015).

Healthcare worker motivation is widely considered a significant determinant of health worker performance (Dieleman, Gerretsen, & van der Wilt, 2009). It is a primary concern of policymakers, practitioners, and researchers (Belrhiti, Van Damme, Belalia, et al., 2019; George, Scott, Govender, & World Health Organization, 2017). Most of the research on motivation performed in the health workforce field focuses on extrinsic and intrinsic motivation (Rowe, De Savigny, Lanata, & Victora, 2005; Fillol, Lohmann, Turcotte-Tremblay, Somé, & Ridde, 2019; Kane, Gandidzanwa, Mutasa, Moyo, Sismayi, & Dieleman, 2019). The health sector's performance is highly dependent on worker motivation, with service quality, efficiency, and fairness all directly mediated



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by workers' willingness to apply to their tasks (Franco, Bennett, & Kanfer, 2002; Andersen, 2009). However, the researchers' approach to motivating health workers under social pressure is still lacking.

In this study, we approach from the perspective of social pressure and theory of planned behavior. Social pressure influences decisions, and the relative strength of modality effects vary depending on the context (Biddle, Bank, & Slavings, 1987; Fishbein & Ajzen, 1977). Approaching from a theoretical perspective on planned behavior predicts behavior based on a combination of three factors: attitude towards behavior, subjective norms, and perceived behavioral control (Kan & et al. Fabrigar, 2017; Ajzen, 1985, Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Armitage & Conner, 2001; McEachan, Conner, Taylor, & Lawton, 2011). Theory of planned behavior is one of the most influential models in explaining health-related behaviors (Fan, Chen, Ko, Yen, Lin, Griffiths, & Pakpour, 2021). Therefore, this study aims to fill theoretical gap and provide more evidence on the relationship between public service motivation and employee satisfaction and performance in the public sector. In addition, the study also examines social pressure moderates the relationship between subjective norms and the Intention to deal with the COVID-19 pandemic.

### LITERATURE REVIEWS

#### *Theory of Planned Behavior*

Theory of planned behavior applies to understanding and predicting identified behaviors. A combination of three factors determines behavioral intention: attitude towards the behavior, subjective norm, and perceived ability to control behavior (Kan & Fabrigar, 2017; Ajzen, 1985, Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Armitage & Conner, 2001). Theory of planned behavior extends theory of reasoned action used to predict individual behaviors (Bagozzi, 2007), which has been very useful in predicting and understanding human behavior (Ajzen). ; 1985; Ajzen; 1987; Ajzen; 1991). According to this theory, human behavior is stimulated by behavioral intentions, influenced by underlying beliefs (Ajzen, 2002), influenced by factors that favor people's actions, and the ability to behavioral control (Nchise, 2012; Jokonya, 2015).

Attitudes are behavioral beliefs and an individual's perception of the possible consequences of performing a behavior (Ajzen, 2011). The subjective probability that a behavior will produce a particular outcome based on personal experience, information sources, inferences, and behavioral beliefs will create an attitude towards behavior that is favorable or unfavorable to behavior (Ajzen, 2006 & 2010).

Subjective norm is a person's perception of society's expectations for adopting a particular behavior with the likelihood that significant others will approve or disapprove of conduct and the motivation for compliance. It is an assessment of the importance of gaining the approval of significant others (Ajzen, 2006 & 2010) and an individual's perception of a particular behavior. The strength of the motivation to comply or compliance with the beliefs of others involved (Ajzen, 2011) characterized linear decision-making processes (Edberg, 2015). The more favorable it is and the greater the perceived control. In addition, the greater the person's intention to perform the behavior in question (Ajzen, 2010), which is the perceived social pressure to engage or not to engage in conduct (Ajzen, 2006), the strength of it considers compliance (Ajzen, 2006).

Perceived behavioral control is the premise of cognitive behavioral control implemented in the perceived presence of factors that can facilitate or hinder the performance of the behavior (Ajzen, 2006). It is an individual's assessment of their individual ability to engage in intended behavior based on their perceived capacity, difficulty, or ease in performing the behavior (Ajzen, 2011).

The intention is attitudes towards subjective norms and perceived behavioral control (Ajzen & Madden, 1986; Ajzen, 1991). It is a motivational and context-specific representative goal-directed behavior (Bloom, 2000), a significant predictor of behavior (Athiyaman, 2002; Tariq et al., 2017; Warshaw & Davis, 1984).

The condition for accurately predicting an intention base on behavioral control and intention to perform a behavior must correspond to or be compatible with the intended behavior. The context, maintaining stability between the moment of assessment and observed behavior, reflects the reality of actual control (Ajzen, 1991). Behavioral intention indicates a person's willingness to perform a specific behavior or action, which is the premise of the behavior. It follows attitudes toward behavior, subjective norms, and behavioral controls, with each predictor weighted for its importance relative to the behavior and interest of other people (Ajzen, 2006). In addition, behavioral intention indicates the level of effort and complex work individuals are willing to engage to perform the behavior (Ajzen, 2006; Ajzen, 1991). Intention prediction can be achieved through attitude towards behavior, subjective norms, and perceived behavioral control (McEachan et al., 2011). Attitude toward a behavior is formed by a personal judgment about the expected outcome of performing a behavior (Ajzen, 2011).

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## *Theory of Planned Behavior in the health care*

In fact, there have been applications of theory of planned behavior in the health and medical fields as predictors of self-care in hypertensive patients (Pourmand, Doshmangir, Ahmadi, et al., 2020), blood pressure control (Ajzen & Timko, 1986; Godin & Kok, 1996; Hagger, Chatzisarantis & Biddle, 2002), health prevention, occupational safety and other areas such as sexual behavior among junior high school students (Baudouin, Wongsawat, & Sudnonbua, 2020), behavioral health education interventions on HIV/AIDS prevention (Siuki, Peyman, Vahedian -Shahroodi, Gholian-Aval, & Tehrani, 2019), prevention of HIV/AIDS infection (Tarkang & Zotor, 2015; Siuki, Peyman, Vahedian-Shahroodi, Gholian-Aval, & Tehrani, 2019), public health behavior (Alberta, Proboningsih, & Almahmudah, 2014, Yanti, Mulyadi, Wahiduddin, Novika, Arina, Martani, & Nawan, 2020, Logo, Betan, & Dion, 2018), dietary behavior (Rieblet et al., 2015), health behavior physical and psychosocial (Andrykowski, Beacham, Schmidt, & Harper, 2006), eating behaviors (Malek, Umberger, Makrides, & ShaoJia, 2017), self-care motivation (Peters, & Templin, 2010). There have also been studies applying theory of planned behavior to predict the effectiveness of preventive measures to assess COVID-19 preventive health behaviors in Iran (Shahnazi, Ahmadi-Livani, Pahlavanzadeh, Rajabi, Hamrah, & Charkazi, 2020), intention to vaccinate (Fan, Chen, Ko, Yen, Lin, Griffiths, & Pakpour, 2021; Wolff K, 2021), social distancing (Frounfelker, Santavicca, Li, Miconi, Venkatesh, & Rousseau, 2021).

## *Social Pressures Influence Behavior*

Many previous studies have discovered the impact of social pressure on cognitive and behavioral control (Locke & Braver, 2008; Braver et al., 2009; Dambler et al., 2011; Padmala & Pessoa, 2011; Chiew & Braver, 2013 & 2014; Fröber & Dreisbach, 2014). Social pressure is one of the most critical factors determining the effectiveness of cognitive performance and goal-oriented behavior, affecting individuals' positive and negative motivation through the social control system (Curley et al., 1986; Trautmann et al., 2008; Vieider, 2009; Collins & Collins, 2002; Sen, 2008; Loewenstein & Lerner, 2003). It arises from others defining outcomes and performance appraisals and create anxiety or fear (Lerner & Tetlock, 1999; Schmid et al., 2015; Latham & Locke, 2006). Social pressure deals with working memory, reasoning, problem-solving, task flexibility, planning, and execution (Cohen et al., 1996, Braver & Barch, 2000; Botvinick et al., 2001; Miller & Cohen, 2001; Braver et al., 2001). It allows adjustment of thoughts and actions to pursue behavioral goals (Braver, 2012), directs attention to a stimulus, changes response strategies to changes in the environment, and inhibits automatic or habitual response tendencies (Robertson et al., 2015); participate in socially desirable behavior (Pitesa et al., 2013).

Cognitive control over social pressure operates through two distinct modes of action: positive control and reactive control (Braver & Barch, 2002; Braver et al., 2009; Braver, 2012). It is an active, forward-looking mode that prepares the cognitive system for upcoming events by predicting the current context. On the other hand, information processing takes place in a sustainable, goal-oriented manner (Braver, 2012), with feedback control, so information processing is more intuitive (Braver, 2012; Braver, Gray, & Burgess, 2007), suggesting appropriate behavior (Lerner & Tetlock, 1999).

Social pressure is a variable that explains behavior in many domains (Locke & Braver, 2008; Braver et al., 2009; Engelmann et al., 2009; Jimura et al., 2010; Padmala & Pessoa, 2011; Chiew & Braver, 2013 & 2014; Fröber and Dreisbach, 2014; Braver et al., 2007 & 2009). An individual is under social pressure because of their motivation to act following the wishes of society (Cialdini et al., 1976; Tetlock, 1983; Tetlock et al., 1989; Klimoski & Squid, 1990; Quinn & Schlenker, 2002), rewards and punishments (Taylor et al., 2004; Sawaguchi et al., 1988; Sawaguchi & Goldman-Rakic, 1991; Arnsten et al., 1994; Schmid et al., 2015). In addition, it also explains the improvement of work performance (Latham and Locke, 2006), transparency of results (Hickman & Metz, 2015; Schmid et al., 2015), conflict resolution in the performing mission process (Schmid et al., 2015), anxiety and goal-directed behavior (Hickman & Metz, 2015). Under social pressure, cognitive and behavioral control conditions can occur (Barch et al., 1997; Braver et al., 2001 & 2005; Braver & Bongiolatti, 2002; McDonald & Carter, 2003; Paxton et al., 2006 & 2008; Locke & Braver, 2008). For healthcare workers, social pressure is time pressure related to social sharing. It causes emotional exhaustion (Wang, Zhou, Jia, et al., 2021), stress work (Amponsah-Tawiah, Kwesi & Adu Appiah, Michael, 2016), pressure for social support (Hou, Zhang, Cai, Song, Chen, Deng, et al., 2020).

## **HYPOTHESIS**

H1. There is a positive and significant relationship between attitudes and the Intention to participate in response to the COVID-19 pandemic.

H2. There is a positive and significant relationship between perceived behavioral control and the Intention to participate in response to the COVID-19 pandemic.

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H3. There is a positive and significant relationship between social pressure and the Intention to respond to the COVID-19 pandemic.

H4. There is a positive and significant relationship between subjective norms and the Intention to respond to the COVID-19 pandemic.

H5. Social pressure is the variable that moderates the relationship between subjective norms and the Intention to deal with the COVID-19 pandemic.

### RESEARCH METHOD

We conducted this study in the Hanoi capital, Ho Chi Minh City, Binh Duong, and Bac Giang province in September 2021. These localities were at the peak of the Covid 19 pandemic with the number of patients and largest medical staff. The research team conducted in-depth interviews with three psychologists to adjust the questionnaire to suit the research objectives. The questionnaire consisting of 2 parts. Part 1 was to collect information about the demographics of the study participants, such as age, gender, education level, and occupation. In part 2, we used the questionnaire built by Ajzen (2010). It was adjusted to fit the research object to collect information on participants' attitudes (6 items), subjective norms (5 items), cognitive-behavioral control (5 items), and employee intentions (3 items) about the intention to participate in the prevention of the Covid-19 epidemic. In addition, the questionnaire developed by Yavuzer, Karatas, Civilidag, & Gundogdu (2014) was adjusted to fit the research object to collect information about social pressure on health workers to deal with the COVID-19 pandemic, including 5 items.

The English questionnaire version was translated into Vietnamese by two professional interpreters. This process is carried out according to the rules to adapt between Vietnamese cultures. Then, after a final discussion between the translator and the principal investigator, we created a Vietnamese version. A professional bilingual sociology expert contributed to this edition with minor adjustments. This final version was pre-tested on 40 participants representing age, sex, education, and occupation demographics. The questionnaire was sent directly to the respondents by the purposeful sampling method. As a result, 200 questionnaires were distributed, all of them returned. Table 1 shows the demographic information of the study participants.

**Table 1. Demographic characteristics of survey participants**

	Occupation											
	Consulting doctor		Epidemiologist		General practitioner		Laboratory technician		Nurse		Physician	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
female	17	17.3 %	18	18.4 %	15	15.3 %	13	13.3 %	22	22.4 %	13	13.3 %
male	16	15.7 %	15	14.7 %	22	21.6 %	15	14.7 %	17	16.7 %	17	16.7 %
25-30 years	3	9.7 %	5	16.1 %	7	22.6 %	4	12.9 %	6	19.4 %	6	19.4 %
31-35 years	6	16.2 %	6	16.2 %	6	16.2 %	6	16.2 %	7	18.9 %	6	16.2 %
36-40 years	4	21.1 %	1	5.3 %	6	31.6 %	4	21.1 %	3	15.8 %	1	5.3 %
41-45 years	6	14.6 %	10	24.4 %	4	9.8 %	4	9.8 %	9	22.0 %	8	19.5 %
46-50 years	7	18.9 %	6	16.2 %	5	13.5 %	4	10.8 %	9	24.3 %	6	16.2 %
above 50 years	7	20.0 %	5	14.3 %	9	25.7 %	6	17.1 %	5	14.3 %	3	8.6 %
Ambulance technicians	3	11.5 %	6	23.1 %	4	15.4 %	4	15.4 %	6	23.1 %	3	11.5 %
Bachelor of Medicine	8	22.9 %	5	14.3 %	7	20.0 %	7	20.0 %	5	14.3 %	3	8.6 %

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Bachelor of Public Health	of	2	7.4%	4	14.8%	9	33.3%	3	11.1%	4	14.8%	5	18.5%
Bachelor of Surgery	of	7	17.9%	9	23.1%	3	7.7%	5	12.8%	8	20.5%	7	17.9%
Doctor of Medicine	of	8	21.1%	3	7.9%	8	21.1%	4	10.5%	8	21.1%	7	18.4%
Master of Medicine	of	5	14.3%	6	17.1%	6	17.1%	5	14.3%	8	22.9%	5	14.3%

### RESEARCH RESULTS

#### Analyzing the Reliability of the Scales

We analyze Cronbach's Alpha to identify and remove garbage variables to avoid creating biased factors when analyzing exploratory factor analysis. Cronbach's Alpha coefficient has a variable value in the interval [0,1]. Therefore, a measurement variable has Reliability coefficients  $\geq 0.3$ , that variable meets the requirements (Cronbach, 1951; Taber, 2018). The criterion of Cronbach's Alpha coefficient  $> 0.6$ , and the correlation coefficient of the sum variable in each scale  $> 0.3$  (Hair, Black, Babin, & Anderson, 2010). Table 2 shows that all items meet the standards and ensure the validity of the exploratory factor analysis in the next step.

**Table 2. Summary of Reliability and Relative Minimum Variables of Scales**

Scales	Number of variables observed	Reliability coefficients (Cronbach Alpha)	The correlation coefficient of the smallest total variable
Attitudes	6	0.860	0.566
Subjective_Norms	5	0.784	0.488
Perceived Behavioural Control (PBC)	5	0.808	0.576
Social_pressure	5	0.789	0.555
Intention	3	0.663	0.414

After Cronbach's Alpha analysis, an exploratory factor analysis extracts principal components and varimax rotation to group factors. With a sample size of 200, the factor loading of the observed variables  $> 0.5$ , and variables in the research model converge on the same element, distinguished from other factors. In addition, the Kaiser-Meyer-Olkin coefficient (KMO) must be in the range of  $0.5 \leq KMO \leq 1$  (Cerny & Kaiser, 1977; Kaiser, 1974; Snedecor, George, Cochran & William, 1989). Table 3 shows that all factor loading coefficients of the observed variables  $> 0.5$ ; Bartlett test with Sig meaning. = 0.000 with KMO coefficient = 0.932. All 35 items were extracted into 4 factors with Eigenvalues  $> 1$  and cumulative variance percent = 57.717%. Thus, the research model consisting of 4 independent variables and 1 dependent variable is used for multivariable linear regression analysis and moderator regression analysis to test the proposed hypothesis.

**Table 3. Exploratory factor analysis**

Rotated Component Matrix <sup>a</sup>	Component				
	1	2	3	4	5
Attitudes4	.766				
Attitudes3	.746				
Attitudes6	.733				
Attitudes5	.716				
Attitudes2	.687				
Attitudes1	.625				
PBC5		.735			

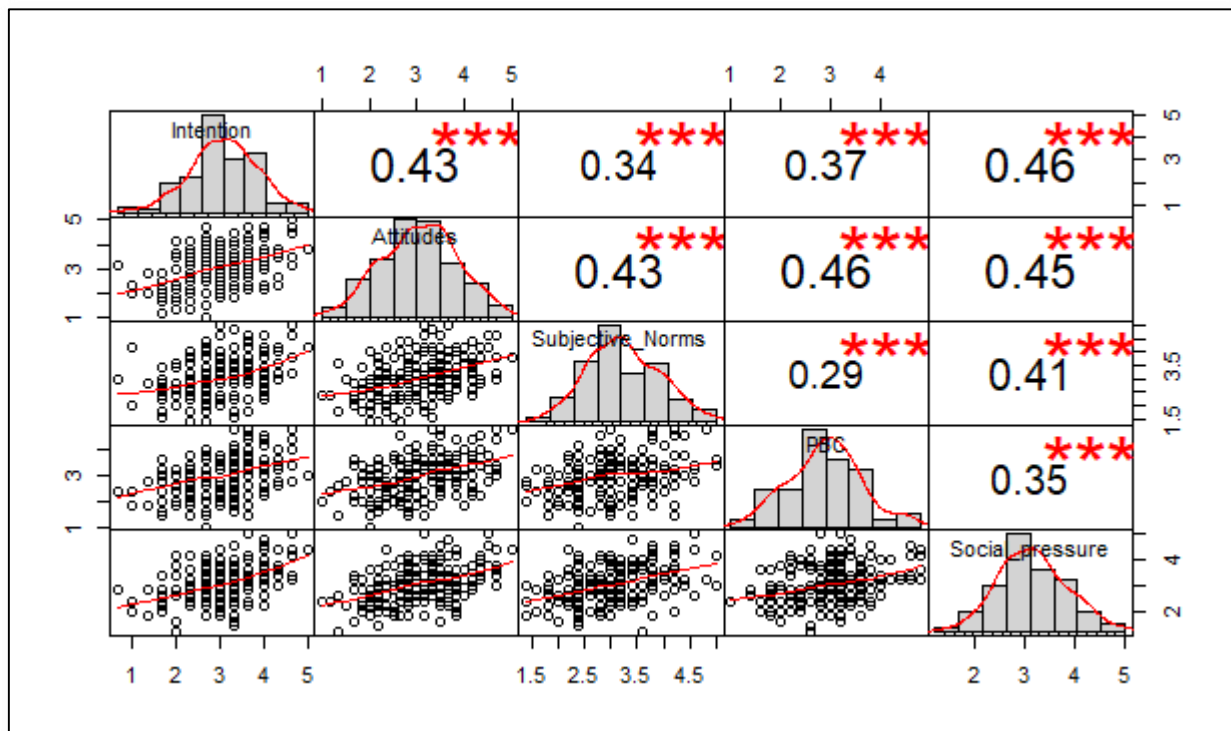
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PBC3	.715
PBC4	.710
PBC1	.706
PBC2	.705
Social_pressure1	.728
Social_pressure5	.718
Social_pressure3	.685
Social_pressure4	.657
Social_pressure2	.650
Subjective_Norms2	.726
Subjective_Norms1	.702
Subjective_Norms4	.697
Subjective_Norms3	.680
Subjective_Norms5	.673
Intention3	.780
Intention1	.734
Intention2	.531

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 a. Rotation converged in 6 iterations.

*Pearson correlation analysis*

Pearson correlation measures the statistical relationship, or association, between quantitative variables. Figure 2 shows that the correlation coefficient of the relationship between the dependent and independent variables is statistically significant (Sig. < 0.05). Thus, the variables used to analyze the multiple linear regression and the moderator regression in the next step.



**Figure 2. Pearson correlation analysis results**

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### Linear regression analysis and Moderation regression

Multivariable linear regression determines the relationship between 4 independent variables, including attitude, subjectivity, PBC, social\_pressure, and a dependent variable: Intention (model1). Moderation regression analysis to determine the role of the Social\_pressure variable (model 2). The center data procedure transforms the data of the independent variables before analyzing the moderator regression. Table 4 shows that model 1 has a coefficient of determination ( $R^2 = 0.301$ ) and model 2 ( $R^2 = 0.205$ ). The linear regression model fit the data set of model1 = 0.301% and model2 = 0.205%. Moderation regression analysis (model 2) shows that the social pressure variable moderates the relationship between the Subjective norms variable and the Intention variable. The F-test of overall significance indicates is 95% significance level (p.value = 0.000), showing that the regression analysis model is valid.

**Table 4. The results of multiple linear regression analysis**

	Dependent variable:	
	(Model1)	(Model2)
Attitudes	0.187** (0.074)	
PBC	0.157** (0.071)	
Social_pressure	0.309*** (0.077)	
Social_pressure		0.306*** (0.071)
Subjective_Norms		0.178*** (0.064)
Social_pressure: Subjective_Norms		0.154** (0.072)
Constant	0.713*** (0.262)	2.960*** (0.053)
Observations	200	200
R2	0.301	0.205
Adjusted R2	0.287	0.193
Residual Std. Error	0.664 (df = 195)	0.706 (df = 196)
F Statistic	20.997*** (df = 4; 195) 16.897*** (df = 3; 196)	
Note:	* $p < 0.1$ ; ** $p < 0.05$ ; *** $p < 0.01$	

Table 4 shows that, with 95% confidence level, the proposed hypotheses are accepted. Model1 shows that the social pressure variable has the most potent effect on the Intention variable with regression coefficient ( $\beta = 0.309$ ), followed by the attitudes variable with regression coefficient ( $\beta = 0.187$ ), the PBC variable with regression coefficient ( $\beta = 0.157$ ) and finally, the subjective norms variable with regression coefficient ( $\beta = 0.192$ ). Model2 shows social pressure variable moderates the relationship between the Subjective norms and Intention variables with regression coefficient ( $\beta = 0.15$ ). The moderating role of the social pressure variable for the relationship between the subjective norms and intention variables is valid. Therefore, the relationship between the subjective norms and healthcare workers' intention to participate depends on the increase or decrease of the social pressure variable.

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## DISCUSSION AND CONCLUSIONS

Firstly, research results show that hypothesis H1 is accepted. In the context of Vietnam, there is a positive and significant relationship between attitudes and the intention to participate in response to the COVID-19 pandemic with regression weight ( $\beta = 0.187$ ) and with a 95% confidence level ( $p.value = 0.001$ ). This result shows an individual's awareness of the possible consequences of performing the behavior (Ajzen, 2006 & 2010). Furthermore, this result indicates that the behavior of healthcare workers depends on their attitude, similar to the findings in another contexts (Adiyoso & Wilopo, 2021; Wollast, Schmitz, Bigot, & Luminet, 2021; Laurel P Gibson, Renee E Magnan, Emily B Kramer, Angela D Bryan, 2021; Aldalaykeh et al., 2019; Woods, 2013).

Secondly, the research results show that hypothesis H2 is accepted. In the context of Vietnam, there is a positive and significant relationship between perceived behavioral control and intention to participate in response to the COVID-19 pandemic with regression weight ( $\beta = 0.157$ ) and the reliability of 95% ( $p.value = 0.001$ ). For health-care workers, cognitive-behavioral control is money that occurs when they have an awareness of factors that may facilitate or hinder performance behavior (Ajzen & 2011; Wollast, Schmitz, Bigot, & Luminet, 2021; Laurel et al., 2021; Aldalaykeh et al., 2019).

Thirdly, research results show that hypothesis H3 is accepted. There is a positive and significant relationship between subjective norms and intention to respond to the COVID-19 pandemic with weight regression ( $\beta = 0.103$ ) and the 95% confidence level ( $p.value = 0$ ). This result further confirms that for healthcare workers engaged in response to the COVID-19 pandemic, subjective norms relate to the likelihood that others will approve or disapprove of behavior and action compliance to a certain extent, as previous studies (Ajzen, 2006, 2010, & Ajzen, 2011; Edberg, 2015; Wollast, Schmitz, Bigot, & Luminet, 2021; Laurel P Gibson, Renee E Magnan, Emily B Kramer, Angela D Bryan, 2021; Wollast, Schmitz, Bigot, & Luminet, 2021). However, Table 4 shows that the subjective norms factor has the lowest impact on the behavioral intention to respond to the COVID-19 pandemic of healthcare workers in Vietnam but at the lowest level compared to other variables in the research model.

Fourthly, the research results show that hypothesis H3 is accepted. In the context of Vietnam, there is a positive and significant relationship between social pressure and the Intention to respond to the COVID-19 pandemic (Regression coefficient  $\beta = 0.309$ ) and (95% confidence level = 0.001). These results further suggest that social pressures are an antecedent of cognitive-behavioral control, the presence of which can facilitate or hinder behavioral performance (Ajzen, 2006 & 2011; Wollast, Schmitz, Bigot, & Luminet, 2021; Laurel P Gibson, Renee E Magnan, Emily B Kramer, Angela D Bryan, 2021). Table 4 shows that the social pressure factor has the most substantial impact on the behavioral intention to participate in response to the COVID-19 pandemic of healthcare workers in Vietnam compared with other variables in the research model. It proves that medical staff in Vietnam are under tremendous pressure from society.

Fifthly, the research results show that hypothesis H5 is accepted. In the context of Vietnam, social pressure is the variable that moderates the relationship between subjective norms and the intention to deal with the COVID-19 pandemic. Regression coefficient ( $\beta = 0.154$ ) and 95% confidence ( $p.value = 0.00$ ). This result shows the significant role of the social pressure factor as a context-specific proxy of goal-directed behavior in regulating other behavioral-oriented variables (Bloom, 2000; Athiyaman, 2002; Tariq). et al., 2017; Warshaw & Davis, 1984; Locke & Braver, 2008; Braver et al., 2009; Dambacher et al., 2011; Padmala & Pessoa, 2011; Chiew & Braver, 2013 & 2014; Fröber & Dreisbach, 2014). Research results show that social pressures on the intention to participate in the COVID-19 pandemic response in Vietnam adjust thinking and actions to pursue behavioral goals (Robertson et al., 2015; Pitesa et al., 2013).

Finally, the research results show that theory of planned behavior and social pressure can be applied to predict behavior in participating in the fight against the COVID-19 pandemic (Wollast, Schmitz, Bigot, & Luminet, 2021; Laurel P Gibson, Renee E Magnan, Emily B Kramer, Angela D Bryan, 2021). Theory of planned behavior should be combined with other approaches to predict health behavior (Godbersen, Hofmann, & Ruiz-Fernández, 2020). These results also show that the theory of planned behavior tends to manifest the same across countries in explaining health behaviors in different national contexts (Wollast, Schmitz, Bigot, & Luminet, 2021). This study support the effectiveness of theory of planned behavior and social pressure in explaining intentions to perform behaviors as mentioned in previous studies (Aldalaykeh et al. et al., 2019; Fishbein & Ajzen, 2010; Mak & Davis, 2014; Mo & Mak, 2009; Şimşekoğlu & Lajunen, 2008; Thornton & Calam, 2010; Woods, 2013).

## LIMITATIONS

As with other empirical studies, this study has limitations that should be considered when discussing the results. First, our survey method reflects the subjective perception of the respondents toward the questions being investigated. Subjective data has some inherent disadvantages that are hard to avoid in surveys (Pakpour et al., 2014). Our data is collected over a single period, so there are certain limitations in analyzing and evaluating the results (Xin & Zhanyou, 2019). The intentional sampling method has certain limitations, which do not fully reflect population characteristics (Lin et al., 2016; Strong et al.,

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2018). In addition, our survey was collected in a Vietnamese cultural context. Therefore more general statements are needed than could be made by applying the development research model and research conclusions to other countries and cultures (Sun et al., 2012).

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### Conflict of interest

All authors declare that there is no conflict of interest.

### REFERENCES

- 1) Adiyoso, W., Wilopo. (2021). Social distancing intentions to reduce the spread of COVID-19: The extended theory of planned behavior. *BMC Public Health*, 21, 1836. <https://doi.org/10.1186/s12889-021-11884-5>.
- 2) Ajzen I. (1991). Theory of planned behavior. *Organ Behav Hum Decis Process*, 50(2), 179–211.
- 3) Ajzen I, Madden TJ (1986) Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control. *J Exp Soc Psychol*, 22(5), 453–474.
- 4) Ajzen, I. (1985). *From intentions to actions: A theory of planned behavior*. In Action control (pp. 11-39). Springer, Berlin, Heidelberg.
- 5) Ajzen, I. (1987). Attitudes, traits, and actions: dispositional prediction of behavior in personality and social psychology. *Adv Exp Soc Psychol*. 20(1),1–63
- 6) Ajzen, I. (1991). Theory of planned behavior. *Organ Behav Hum Decis Process*, 50(2),179–211.
- 7) Ajzen, I. (2006). Constructing a TpB Questionnaire: Conceptual and Methodological Considerations. Retrieved June 27, 2011 from the World Wide Web: <http://www.people.umass.edu/aizen/pdf/tpb.measurement.pdf>.
- 8) Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. New York: Psychology Press.
- 9) Ajzen, I., & Timko, C. (1986). Correspondence between health attitudes and behavior. *Basic and applied social psychology*, 7(4), 259-276.
- 10) Ajzen, Icek. (2011). *Behavioral Interventions: Design and Evaluation Guided by theory of Planned Behavior*. in Social Psychology and Evaluation, edited by M.M. Mark, S.I. Donaldson, and B. Campbell. New York: Guilford Press. Pp. 75-103.
- 11) Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and theory of planned behavior. *Journal of Applied Social Psychology*, 32, 665-683.
- 12) Albarracin, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: a meta-analysis. *Psychological bulletin*, 127(1), 142.
- 13) Alberta, L. T., Proboningsih, J., & Almahmudah, M. (2014). The improvement of low salt diet behavior based on theory of planned behavior on elderly with hypertension. *Jurnal Ners*, 9(2), 297-304.
- 14) Aldalaykeh, M., Al-Hammouri, M. M., & Rababah, J. (2019). Predictors of mental health services help-seeking behavior among university students. *Cogent Psychology*, 6, 1660520. DOI: <https://doi.org/10.1080/23311908.2019.1660520>.
- 15) Amponsah-Tawiah, Kwesi & Adu Appiah, Michael. (2016). Work Pressure and Safety Behaviors among Health Workers in Ghana: The Moderating Role of Management Commitment to Safety. *Safety and Health at Work*. 7. 10.1016/j.shaw.2016.05.001.
- 16) Andersen, L. B. (2009). What determines the behaviour and performance of health professionals? Public service motivation, professional norms and/or economic incentives. *International Review of Administrative Sciences*, 75(1), 79–97. <https://doi.org/10.1177/0020852308099507>.
- 17) Andrykowski, M. A., Beacham, A. O., Schmidt, J. E., & Harper, F. W. (2006). Application of theory of planned behavior to understand intentions to engage in physical and psychosocial health behaviors after cancer diagnosis. *Psycho-oncology*, 15(9), 759–771. <https://doi.org/10.1002/pon.1007>.
- 18) Armitage, C. J., & Conner, M. (2001). Efficacy of theory of planned behaviour: A meta-analytic review. *British journal of social psychology*, 40(4), 471-499.
- 19) Arnsten, A. F., Cai, J. X., Murphy, B. L., and Goldman-Rakic, P. S. (1994). Dopamine D1 receptor mechanisms in the cognitive performance of young adult and aged monkeys. *Psychopharmacology (Berl.)* 116, 143–151. doi: 10.1007/BF02245056.



## Planned Behavior and Social Pressure on Healthcare Workers' Intention to Participate in the COVID-19 Pandemic Response in Vietnam

- 20) Barch, D. M., Braver, T. S., Nystrom, L. E., Forman, S. D., Noll, D. C., and Cohen, J. D. (1997). Dissociating working memory from task difficulty in human prefrontal cortex. *Neuropsychologia*, 35, 1373–1380. doi: 10.1016/S0028-3932(97)00072-9.
- 21) Baudouin, B. S., Wongsawat, P., & Sudnongbua, S. (2020). Using theory of planned behaviour to predict preventive intention on sexual behaviours among junior high school students in lower Northern region of Thailand. *International Journal of Adolescence and Youth*, 25(1), 364-372.
- 22) Belrhiti, Z., Van Damme, W., Belalia, A. et al., (2019). Does public service motivation matter in Moroccan public hospitals? A multiple embedded case study. *Int J Equity Health*, 18, 160. <https://doi.org/10.1186/s12939-019-1053-8>.
- 23) Biddle, B. J., Bank, B. J., & Slavings, R. L. (1987). Norms, preferences, identities and retention decisions. *Social psychology quarterly*, 322-337.
- 24) Bloom L. (2000). Intentionality and theories of intentionality in development. *Hum Dev*, 43(3), 178–185.
- 25) Botvinick, M. M., Braver, T. S., Barch, D. M., Carter, C. S., and Cohen, J. D. (2001). Conflict monitoring and cognitive control. *Psychol. Rev.* 108, 624–652. doi: 10.1037/0033-295X.108.3.624.
- 26) Braver, T. S. (2012). The variable nature of cognitive control: a dual mechanisms framework. *Trends Cogn. Sci.* 16, 106–113. doi: 10.1016/j.tics.2011.12.010.
- 27) Braver, T. S., and Barch, D. M. (2000). *On the control of control: the role of dopamine in regulating prefrontal function and working memory*. In *Attention and performance XVIII*, eds S. Monsell and J. Driver (Cambridge, MA: MIT Press), 713–737.
- 28) Braver, T. S., and Bongiolatti, S. R. (2002). The role of frontopolar cortex in subgoal processing during working memory. *Neuroimage* 15, 523–536. doi: 10.1006/nimg.2001.1019.
- 29) Braver, T. S., Barch, D. M., Keys, B. A., Carter, C. S., Cohen, J. D., Kaye, J. A., et al. (2001). Context processing in older adults: evidence for a theory relating cognitive control to neurobiology in healthy aging. *J. Exp. Psychol. Gen.* 130, 746–763. doi: 10.1037/0096-3445.130.4.746.
- 30) Braver, T. S., Gray, J. R., and Burgess, G. C. (2007). *Explaining the many varieties of working memory variation: dual mechanisms of cognitive control*. In *Variation in working memory*, eds A. R. A. Conway, C. Jarrold, M. J. Kane, A. Miyake, and J. Towse (New York, NY: Oxford University Press), 76–106.
- 31) Braver, T. S., Paxton, J. L., Locke, H. S., & Barch, D. M. (2009). Flexible neural mechanisms of cognitive control within human prefrontal cortex. *Proceedings of the National Academy of Sciences*, 106(18), 7351-7356.
- 32) Braver, T. S., Satpute, A. B., Rush, B. K., Racine, C. A., and Barch, D. M. (2005). Context processing and context maintenance in healthy aging and early stage dementia of the Alzheimer's type. *Psychol. Aging* 20, 33. doi: 10.1037/0882-7974.20.1.33.
- 33) Cerny, B. A., & Kaiser, H. F. (1977). A study of a measure of sampling adequacy for factor-analytic correlation matrices. *Multivariate Behavioral Research*, 12(1), 43–47. [https://doi.org/10.1207/s15327906mbr1201\\_3](https://doi.org/10.1207/s15327906mbr1201_3).
- 34) Chiew, K. S., and Braver, T. S. (2013). Temporal dynamics of motivation-cognitive control interactions revealed by high-resolution pupillometry. *Front. Psychol.* 4-15. doi: 10.3389/fpsyg.2013.00015.
- 35) Chiew, K. S., and Braver, T. S. (2014). Dissociable influences of reward motivation and positive emotion on cognitive control. *Cogn. Affect. Behav. Neurosci.* 14, 509–529. doi: 10.3758/s13415-014-0280-0.
- 36) Cialdini, R. B., Levy, A., Herman, C. P., Kozlowski, L. T., and Petty, R. E. (1976). Elastic shift of opinion: determinants of direction and durability. *J. Pers. Soc. Psychol.* 34, 663–672. doi: 10.1037/0022-3514.34.4.663.
- 37) Cohen, Jonathan & Braver, Todd & O'Reilly, Randall. (1996). A Computational Approach to Prefrontal Cortex, Cognitive Control and Schizophrenia: Recent Developments and Current Challenges. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences.* 351. 1515-27. 10.1098/rstb.1996.0138.
- 38) Collins, S. K., & Collins, K. S. (2002). Micromanagement--a costly management style. *Radiology management*, 24(6), 32-35.
- 39) Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297–334. <https://doi.org/10.1007/BF02310555>.
- 40) Curley, S. P., Yates, J. F., and Abrams, R. A. (1986). Psychological sources of ambiguity avoidance. *Organizational Behavior and Human Decision Processes.* 38, 230–256. doi: 10.1016/0749-5978(86)90018-X.
- 41) Dambacher, M., Hübner, R., and Schlösser, J. (2011). Monetary incentives in speeded perceptual decision: Effects of penalizing errors versus slow responses. *Front. Psychol.* 2:248. doi: 10.3389/fpsyg.2011.00248.
- 42) Dieleman, M., Gerretsen, B., & van der Wilt, G. J. (2009). Human resource management interventions to improve health workers' performance in low and middle income countries: a realist review. *Health Research Policy and Systems*, 7(1), 1-13.

## Planned Behavior and Social Pressure on Healthcare Workers' Intention to Participate in the COVID-19 Pandemic Response in Vietnam

- 43) Edberg, Mark. (2015). *Individual Health Behavior Theories*. in Essentials of Health Behavior: Social and Behavioral Theory in Public Health. 2nd ed. Burlington: Jones & Bartlett Learning, 37-52.
- 44) Engelmann, J. B., Damaraju, E., Padmala, S., & Pessoa, L. (2009). Combined effects of attention and motivation on visual task performance: transient and sustained motivational effects. *Frontiers in human neuroscience*, 3, 4. <https://doi.org/10.3389/neuro.09.004.2009>.
- 45) Fan, C. W., Chen, I. H., Ko, N. Y., Yen, C. F., Lin, C. Y., Griffiths, M. D., & Pakpour, A. H. (2021). Extended theory of planned behavior in explaining the intention to COVID-19 vaccination uptake among mainland Chinese university students: an online survey study. *Human vaccines & immunotherapeutics*, 17(10), 3413–3420. <https://doi.org/10.1080/21645515.2021.1933687>.
- 46) Fillol, A., Lohmann, J., Turcotte-Tremblay, A. M., Somé, P. A., & Ridde, V. (2019). The Importance of Leadership and Organizational Capacity in Shaping Health Workers' Motivational Reactions to Performance-Based Financing: A Multiple Case Study in Burkina Faso. *International journal of health policy and management*, 8(5), 272–279. <https://doi.org/10.15171/ijhpm.2018.133>.
- 47) Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- 48) Franco, L. M., Bennett, S., & Kanfer, R. (2002). Health sector reform and public sector health worker motivation: a conceptual framework. *Social science & medicine*, 54(8), 1255–1266. [https://doi.org/10.1016/s0277-9536\(01\)00094-6](https://doi.org/10.1016/s0277-9536(01)00094-6).
- 49) Fröber, K., and Dreisbach, G. (2014). The differential influences of positive affect, random reward, and performance-contingent reward on cognitive control. *Cogn. Affect. Behav. Neurosci.* 14, 530–547. doi: 10.3758/s13415-014-0259-x.
- 50) Frounfelker, R. L., Santavicca, T., Li, Z. Y., Miconi, D., Venkatesh, V., & Rousseau, C. (2021). COVID-19 Experiences and Social Distancing: Insights From theory of Planned Behavior. *American Journal of Health Promotion*, 35(8), 1095–1104. <https://doi.org/10.1177/08901171211020997>.
- 51) George, A., Scott, K., Govender, V., & World Health Organization. (2017). *A health policy and systems research reader on human resources for health*. World Health Organization.
- 52) Godbersen H, Hofmann LA and Ruiz-Fernández S. (2020). How People Evaluate Anti-Corona Measures for Their Social Spheres: Attitude, Subjective Norm, and Perceived Behavioral Control. *Front. Psychol.* 11:567405. doi: 10.3389/fpsyg.2020.567405.
- 53) Godin, G., & Kok, G. (1996). Theory of planned behavior: a review of its applications to health-related behaviors. *American journal of health promotion*, 11(2), 87-98.
- 54) H. A. B. Logo, Y. Betan and Y. Dion. (2018). Factors Related to HIV/AIDS Prevention Behavior of Sex Workers in Localization of Karang Dempel. *CHMK Health Journal*, 2(3), 31-39.
- 55) Hagger, M. S., Chatzisarantis, N. L.D., & Biddle, S. J.H. (2002). A meta-analytic review of theories of reasoned action and planned behavior in physical activity: Predictive validity and the contribution of additional variables. *Journal of Sport & Exercise Psychology*, 24(1), 3–32. <https://doi.org/10.1123/jsep.24.1.3>.
- 56) Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010). *Multivariate Data Analysis* (7th Edition), Pearson, New York.
- 57) Hickman, D. C., and Metz, N. E. (2015). The impact of pressure on performance: evidence from the PGA TOUR. *J. Econ. Behav. Organ.* 116, 319–330. doi: 10.1016/j.jebo.2015.04.007 .
- 58) Hou T, Zhang T, Cai W, Song X, Chen A, Deng G, et al. (2020) Social support and mental health among health care workers during Coronavirus Disease 2019 outbreak: A moderated mediation model. *PLoS ONE* 15(5): e0233831. <https://doi.org/10.1371/journal.pone.0233831>.
- 59) Jimura, K., Locke, H. S., and Braver, T. S. (2010). Prefrontal cortex mediation of cognitive enhancement in rewarding motivational contexts. *Proc. Natl. Acad. Sci. U.S.A.* 107, 8871–8876. doi: 10.1073/pnas.1002007107.
- 60) Jokonya, Osden. (2015). Validating Technology Acceptance Model (TAM) during IT Adoption in Organizations. *IEEE 7th International Conference on Cloud Computing Technology and Science (CloudCom)*, 509-516, doi: 10.1109/CloudCom.2015.56..
- 61) Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31–36. <https://doi.org/10.1007/BF02291575>.
- 62) Kan M.P.H., Fabrigar L.R. (2017). *Theory of Planned Behavior*. In: Zeigler-Hill V., Shackelford T. (eds) Encyclopedia of Personality and Individual Differences. Springer, Cham. [https://doi.org/10.1007/978-3-319-28099-8\\_1191-1](https://doi.org/10.1007/978-3-319-28099-8_1191-1).
- 63) Kane, S., Gandidzanwa, C., Mutasa, R., Moyo, I., Sismayi, C., Mafaune, P., & Dieleman, M. (2019). Coming Full Circle: How Health Worker Motivation and Performance in Results-Based Financing Arrangements Hinges on Strong and Adaptive

## Planned Behavior and Social Pressure on Healthcare Workers' Intention to Participate in the COVID-19 Pandemic Response in Vietnam

- Health Systems. *International journal of health policy and management*, 8(2), 101–111. <https://doi.org/10.15171/ijhpm.2018.98>.
- 64) Klimoski, R., and Inks, L. (1990). Accountability forces in performance appraisal. *Organ. Behav. Hum. Decis. Process.* 45, 194–208. doi: 10.1016/0749-5978(90)90011-W.
- 65) Latham, G. P., and Locke, E. A. (2006). Enhancing the benefits and overcoming the pitfalls of goal setting. *Organ. Dyn.* 35, 332–340. doi: 10.1016/j.orgdyn.2006.08.008.
- 66) Laurel P Gibson, Renee E Magnan, Emily B Kramer, Angela D Bryan. (2021). Theory of Planned Behavior Analysis of Social Distancing During the COVID-19 pandemic: Focusing on the Intention–Behavior Gap. *Annals of Behavioral Medicine*, 55(8), 805–812, <https://doi.org/10.1093/abm/kaab041>.
- 67) Lerner, J. S., and Tetlock, P. E. (1999). Accounting for the effects of accountability. *Psychol. Bull.* 125, 255–275. doi: 10.1037/0033-2909.125.2.255.
- 68) Lin CY, Updegraff JA, Pakpour AH. (2016). The relationship between theory of planned behavior and medication adherence in patients with epilepsy. *Epilepsy & Behavior*, 61,231–6.
- 69) Locke, H. S., and Braver, T. S. (2008). Motivational influences on cognitive control: behavior, brain activation, and individual differences. *Cogn. Affect. Behav. Neurosci.* 8, 99–112. doi: 10.3758/CABN.8.1.99.
- 70) Loewenstein, G., Lerner, J. S., Davidson, R., Scherer, K., & Goldsmith, D. (2009). *Handbook of affective sciences* (1st edition). Oxford University Press.
- 71) Malek, L., Umberger, W. J., Makrides, M., & Shaoljia, Z. (2017). Predicting healthy eating intention and adherence to dietary recommendations during pregnancy in Australia using theory of Planned Behaviour. *Appetite*, 116, 431–441. <https://doi.org/10.1016/j.appet.2017.05.028>.
- 72) McDonald, A. W., and Carter, C. S. (2003). Event-related fMRI study of context processing in dorsolateral prefrontal cortex of patients with schizophrenia. *J. Abnorm. Psychol.* 112, 689–697. doi: 10.1037/0021-843X.112.4.689.
- 73) McEachan, C., Conner, M., Taylor, N., & Lawton, R. (2011). Prospective prediction of health-related behavior with the TPB: a meta-analysis. *Health Psychology Review*, 5(2), 97 – 144.
- 74) Miller, E. K., and Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annu. Rev. Neurosci.* 24, 167–202. doi: 10.1146/annurev.neuro.24.1.167.
- 75) Mo, P.K.H., Mak, W.W.S. (2009). Help-seeking for mental health problems among Chinese. *Soc Psychiat Epidemiol*, 44, 675–684. <https://doi.org/10.1007/s00127-008-0484-0>.
- 76) Nchise, Abinwi. (2012). An Empirical Analysis of theory of Planned Behavior, A Review of Its Application on E-democracy Adoption Using the Partial Least Squares Algorithm. *JeDEM.* 4. 171-182. 10.29379/jedem.v4i2.129.
- 77) Nguyen, Thuong & Tran, Quang & Phan, Lan & Vu, Long & Truong, Dung & Truong, Hieu & Le, Tu & Vien, Linh & Nguyen, Thinh & Luong, Quang & Pham, Quang. (2021). In the interest of public safety: Rapid response to the COVID-19 epidemic in Vietnam. *BMJ Global Health.* 6. e004100. 10.1136/bmjgh-2020-004100.
- 78) Padmala, S., and Pessoa, L. (2011). Reward reduces conflict by enhancing attentional control and biasing visual cortical processing. *J. Cogn. Neurosci.* 23, 3419–3432. doi: 10.1162/jocn\_a\_00011.
- 79) Pakpour AH, Gellert P, Asefzadeh S, Updegraff JA, Molloy GJ, Sniehotta FF. (2014). Intention and planning predicting medication adherence following coronary artery bypass graft surgery. *Journal of Psychosomatic Research*, 77(4), 287–95. <https://doi.org/10.1016/j.jpsychores.2014.07.001> PMID: 25280826.
- 80) Paxton, J. L., Barch, D. M., Racine, C. A., and Braver, T. S. (2008). Cognitive control, goal maintenance, and prefrontal function in healthy aging. *Cereb. Cortex* 18, 1010–1028. doi: 10.1093/cercor/bhm135.
- 81) Paxton, J. L., Barch, D. M., Storandt, M., and Braver, T. S. (2006). Effects of environmental support and strategy training on older adults' use of context. *Psychol. Aging* 21, 499. doi: 10.1037/0882-7974.21.3.499.
- 82) Peters, R. M., & Templin, T. N. (2010). Theory of planned behavior, self-care motivation, and blood pressure self-care. *Research and theory for nursing practice*, 24(3), 172–186. <https://doi.org/10.1891/1541-6577.24.3.172>.
- 83) Phong Thu. (2021). *White blouse soldiers on the frontline*. Available at: <https://vietnam.vnnet.vn/english/white-blouse-soldiers-on-the-frontline/490956.html>.
- 84) Pitesa, M., Thau, S., and Pillutla, M. M. (2013). Cognitive control and socially desirable behavior: the role of interpersonal impact. *Organ. Behav. Hum. Decis. Process.* 122, 232–243. doi: 10.1016/j.obhdp.2013.08.003.
- 85) Pourmand, G., Doshmangir, L., Ahmadi, A. et al. (2020). An application of theory of planned behavior to self-care in patients with hypertension. *BMC Public Health* 20, 1290 (2020). <https://doi.org/10.1186/s12889-020-09385-y>

## Planned Behavior and Social Pressure on Healthcare Workers' Intention to Participate in the COVID-19 Pandemic Response in Vietnam

- 86) Quinn, A., and Schlenker, B. R. (2002). Can accountability produce independence? Goals as determinants of the impact of accountability on conformity. *Pers. Soc. Psychol. Bull.* 28, 472–483. doi: 10.1177/0146167202287005.
- 87) R. P. Bagozzi, The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift. *Journal of the Association of Information Systems*, 8(4), 244-254.
- 88) Riebl, S. K., Estabrooks, P. A., Dunsmore, J. C., Savla, J., Frisard, M. I., Dietrich, A. M., Peng, Y., Zhang, X., & Davy, B. M. (2015). A systematic literature review and meta-analysis: Theory of Planned Behavior's application to understand and predict nutrition-related behaviors in youth. *Eating behaviors*, 18, 160–178. <https://doi.org/10.1016/j.eatbeh.2015.05.016>.
- 89) Robertson, B. D., Hiebert, N. H., Seergobin, K. N., Owen, A. M., and MacDonald, P. A. (2015). Dorsal striatum mediates cognitive control, not cognitive effort per se, in decision-making: an event-related fMRI study. *Neuroimage*, 114, 170–184. doi: 10.1016/j.neuroimage.2015.03.082.
- 90) Rowe, A. K., De Savigny, D., Lanata, C. F., & Victora, C. G. (2005). How can we achieve and maintain high-quality performance of health workers in low-resource settings?. *The Lancet*, 366(9490), 1026-1035.
- 91) Sawaguchi, T., and Goldman-Rakic, P. S. (1991). D1 dopamine receptors in prefrontal cortex: involvement in working memory. *Science*, 251, 947–950. doi: 10.1126/science.1825731.
- 92) Schmid, P. C., Kleiman, T., and Amodio, D. V. (2015). Neural mechanisms of proactive and reactive cognitive control in social anxiety. *Cortex* 70, 137–145. doi: 10.1016/j.cortex.2015.05.030.
- 93) Sen, A. (2008). Neurology of emotional intelligence: interpreted for managers. *Vision*, 12(1), 11-18.
- 94) Shahnazi, H., Ahmadi-Livani, M., Pahlavanzadeh, B., Rajabi, A., Hamrah, M. S., & Charkazi, A. (2020). Assessing preventive health behaviors from COVID-19: a cross sectional study with health belief model in Golestan Province, Northern of Iran. *Infectious diseases of poverty*, 9(1), 157. <https://doi.org/10.1186/s40249-020-00776-2>.
- 95) Şimşekoğlu, Ö., & Lajunen, T. (2008). Social psychology of seat belt use: A comparison of theory of planned behavior and health belief model. *Transportation Research: Part F*, 11(3), 181–191. DOI: <https://doi.org/10.1016/j.trf.2007.10.001>.
- 96) Siuki, H. A., Peyman, N., Vahedian-Shahroodi, M., Gholian-Aval, M., & Tehrani, H. (2019). Health education intervention on HIV/AIDS prevention behaviors among health volunteers in healthcare centers: An applying theory of planned behavior. *Journal of Social Service Research*, 45(4), 582-588.
- 97) Snedecor, George W. and Cochran, William G. (1989). *Statistical Methods* (8<sup>th</sup> Edition) .Iowa State University Press.
- 98) Strong C, Lin CY, Jalilolghadr S, Updegraff JA, Brostrom A, Pakpour AH. (2018). Sleep hygiene behaviours in Iranian adolescents: an application of theory of Planned Behavior. *Journal of Sleep Research*, 27(1), 23–31. <https://doi.org/10.1111/jsr.12566> PMID: 28593637.
- 99) Sun Y, Fang Y, Lim KH, Straub D. (2012). User satisfaction with information technology services: A social capital perspective. *Information Systems Research*, 23(4), 1195–211.
- 100) Taber, K.S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Res Sci Educ*, 48, 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>.
- 101) Tariq J, Sajjad A, Usman A, Amjad A (2017) The role of intentions in facebook usage among educated youth in Pakistan: an extension of theory of planned behavior. *Comput Hum Behav*, 74, 188–195.
- 102) Tarkang, E. E., & Zotor, F. B. (2015). Application of the health belief model (HBM) in HIV prevention: a literature review. *Central African Journal of Public Health*, 1(1), 1-8.
- 103) Taylor, S. F., Welsh, R. C., Wager, T. D., Phan, K. L., Fitzgerald, K. D., and Gehring, W. J. (2004). A functional neuroimaging study of motivation and executive function. *Neuroimage* 21, 1045–1054. doi: 10.1016/j.neuroimage.2003.10.032.
- 104) Tetlock, P. E. (1983). Accountability and complexity of thought. *J. Pers. Soc. Psychol.* 45, 74–83. doi: 10.1037/0022-3514.45.1.74.
- 105) Tetlock, P. E., Skitka, L., and Boettger, R. (1989). Social and cognitive strategies for coping with accountability: conformity, complexity, and bolstering. *J. Pers. Soc. Psychol.*, 57, 632–640. doi: 10.1037/0022-3514.57.4.632.
- 106) Thai Binh. (2021). *The COVID-19 pandemic causes 60% of medical staff to work more*. Available at: <https://suckhoedoisong.vn/dai-dich-covid-19-khien-60-nhan-vien-y-te-phai-lam-viec-tang-len-169211218191419976.htm>.
- 107) Thanh Nam. (2021). *Great encouragement given to frontline medical forces in COVID-19 fight*. Available at: <https://en.nhandan.vn/society/item/10552902-great-encouragement-given-to-frontline-medical-forces-in-covid-19-fight.html>.

## Planned Behavior and Social Pressure on Healthcare Workers' Intention to Participate in the COVID-19 Pandemic Response in Vietnam

- 108) Thornton, S., & Calam, R. (2010). Predicting intention to attend and actual attendance at a universal parent-training programme: A comparison of social cognition models. *Clinical Child Psychology and Psychiatry*, 16(3), 365–383. DOI: <https://doi.org/10.1177/1359104510366278>
- 109) Trautmann, S. T., Vieider, F. M., and Wakker, P. P. (2008). Causes of ambiguity aversion: known versus unknown preferences. *J. Risk Uncertainm*, 36, 225–243. doi: 10.1007/s11166-008-9038-9.
- 110) Vieider, F. M. (2009). The effect of accountability on loss aversion. *Acta Psychol*, 132, 96–101. doi: 10.1016/j.actpsy.2009.05.006.
- 111) Viet Nam Government. (2009). *Decree No. 92/2009/ND-CP regarding titles, quantities, regimes and policies for public servants and civil servants at communes, wards, towns and persons working part time at the communal level*. Hanoi, Vietnam.
- 112) Vietnam Ministry of Health. (1996). *Decree No. 2088/BYT-QĐ regarding "regulations on medical ethics"*. Hanoi, Vietnam.
- 113) Wang, H., Zhou, X., Jia, X. et al. (2021). Emotional exhaustion in front-line healthcare workers during the COVID-19 pandemic in Wuhan, China: the effects of time pressure, social sharing and cognitive appraisal. *BMC Public Health*, 21, 829. <https://doi.org/10.1186/s12889-021-10891-w>.
- 114) Warshaw PR, Davis FD .(1984). Self-understanding and the accuracy of behavioral expectations. *Personal Soc Psychol Bull*, 10(1),111–118.
- 115) Wolff K .(2021). COVID-19 Vaccination Intentions: Theory of Planned Behavior, Optimistic Bias, and Anticipated Regret. *Front. Psychol*. 12:648289. doi: 10.3389/fpsyg.2021.648289.
- 116) Wollast R, Schmitz M, Bigot A, Luminet O .(2021). Theory of Planned Behavior during the COVID-19 pandemic: A comparison of health behaviors between Belgian and French residents. *PLOS ONE* 16(11): e0258320. <https://doi.org/10.1371/journal.pone.0258320>.
- 117) Woods, K. C. (2013). *The strong black woman archetype and intentions to seek therapy for depression: A cultural application of theory of planned behavior*. ProQuest Dissertations and Theses. Retrieved from: <http://search.proquest.com/docview/1461804481?accountid=11835>.
- 118) Xin Z, Liang M, Zhanyou W, Hua X .(2019). Psychosocial factors influencing shared bicycle travel choices among Chinese: An application of theory planned behavior. *PLoS ONE*, 14(1), e0210964. <https://doi.org/10.1371/journal.pone.0210964>.
- 119) Yanti, B., Mulyadi, E., Wahiduddin, W., Novika, R. G. H., Arina, Y. M. D. A., Martani, N. S., & Nawan, N. (2020). Community knowledge, attitudes, and behavior towards social distancing policy as prevention transmission of COVID-19 in indonesia. *Jurnal Administrasi Kesehatan Indonesia*, 8, 4-14.
- 120) Yavuzer, Y., Karatas, Z., Civilidag, A. & Gundogdu, R. (2014). The role of peer pressure, automatic thoughts and self-esteem on adolescents' aggression. *Eurasian Journal of Educational Research*, 54, 61-78.



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## Factors Affecting the Efficiency of Teaching the Vietnamese Idioms to Foreigners Based on the Principle of Combined Cognition and Culture



Nguyen Thi Bich Hang

Hanoi University

**ABSTRACT:** Since Vietnam is integrating internationally in all aspects of social life, more and more foreigners are learning Vietnamese. However, there are still very few quantitative studies on teaching and learning Vietnamese idioms effectively. This study aims to fill the theoretical gap and provide more evidence on the factors affecting Vietnamese idiom learning effectiveness. This study was conducted through a cross-sectional survey using a targeted sampling technique (n=100). The multiple linear regression models is applied to prove the hypotheses. The R language is used to analyze research data. The research results show that the willingness to learn Vietnamese and the strategy to learn Vietnamese have a positive and significant impact on the effectiveness of learning Vietnamese idioms. The results of this study continue to confirm the role of cognitive techniques in learning idioms as the results of previous studies.

**KEYWORDS:** idioms, Vietnamese, cognition, culture , teaching, learning

### INTRODUCTION

Along with Vietnam's trend of integration into the world economy, more and more people are learning Vietnamese as a second language (Luu Khuong, 2017). There are many forms of organization to teach Vietnamese to foreigners, as shown by research, such as small group organization, role play, etc (Nguyen, 2012). Studies on learners of Vietnamese as a second language have shown difficulties in understanding the meaning of words, grammatical structures, and phonetics due to the complexity of Vietnamese (First News, 2018).

Contemporary theoretical and experimental studies have found that second language learning is a way to understand cognitive processes in language acquisition. Language is a complex mental activity. Therefore, pre-linguistic conditions make an essential contribution to its acquisition (Chomsky, 1957; Ivanov, 2005). Language and culture are intertwined, each playing its part in any interaction. Language and culture both come first when learning a language. Therefore, language knowledge is essential. Cultural literacy is not only recognized as exciting and motivating but also necessary to avoid or manage misunderstandings in interactions (Sercu et al., 2005; Young & Sachdev, 2011).

The teaching of intercultural communicative languages has naturally extended the current focus on the communicative competence of language learners by incorporating significant cultural awareness (Canale & Swain, 1980). Culturally critical awareness includes knowledge of the values and beliefs shared by members of the culture and the skills and attitudes to explore the culture in keeping with the dynamic nature and cultural heterogeneity (Byram, 1997). In cognitive language learning, second language learners need to make conscious efforts. They have positive attitudes and systematic learning methods to learn about the culture through speaking channels, movies, and literary products to immerse themselves in the culture entirely (Milroy, 1994; Brumfit, 1994). Cognitive methods will provide a systematic approach to teaching mental expressions that facilitate learning and information processing for language learners (Lakoff, 1987; Lakoff & Johnson, 1980; Danesi, 1994). The need to include cognitive expressions in language teaching and help learners know how a language encodes concepts based on cognitive reasoning (Charteris-Black, 2002). Language teachers should not ignore perception if it is possible to use the target language naturally (Fernando, 1996).

Learning occurs through information processing, providing learners with the opportunity to practice a variety of meanings in a second language (Carroll, 1964). Teaching a second language is a complex process. Therefore, the right approach or method in language teaching has always been a concern for learners and language teachers (Liu, 2003; Moon, 1998; Cooper, 1998; Simpson

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& Mendis, 2003). Many studies give different implications for second language teaching. For example, teaching cognitive expressions is essential in developing the desired proficiency level for language learners. Mental mastery is required to learn and use the language like a native (Fernando; 1996, Wray, 1999; Schmitt, 2000; Charteris-Black, 2002). More attention should be paid to teaching to understand and create cognitive methods in the second language because cognitive methods are recognized as the standard in other languages (Gairns & Redman, 1986; Lattey, 1986; Carter & McCarthy, 1988). In intercultural language teaching, language and culture are integrated at all stages of language learning. Moreover, a growing body of evidence supports a positive relationship between cross-cultural communication language instruction and target domain proficiency (Jackson, 2014; Sercu et al., 2005; Conway et al., 2010; Young & Sachdev, 2011). Second language teachers should systematically study the culture to apply to second language teaching. The so-called culture here refers not only to the concrete aspect, including history, geography, and social system, but also to the abstract aspect, such as lifestyle, values, ways of the world, beliefs, cultural heritage, philosophy, etc (Liu, 2003; Moon, 1998; Cooper, 1998; Simpson & Mendis, 2003).

An essential component of successful language learning is mastery of cognitive expressions, including percepts, phrases, and sentences (Wray, 2000). Cognition facilitates the learning of second language figurative expressions (Lazar, 1996; Deignan et al. 1997). Perception is a vehicle for culture and reflects how the world is perceived, so the importance of cultural teaching becomes greater. This study aims to fill the theoretical gap and provide more evidence on the factors affecting Vietnamese idiom learning effectiveness.

### LITERATURE REVIEWS

#### *Teaching Vietnamese as a second language*

Vietnamese is always considered a difficult language because of its diverse grammar system and complex tonal system (Park Ji Hoon, Chu Thị Phong Lan, & Tran Thi Huong, 2020). Studies on learners of Vietnamese as a second language have shown difficulties in understanding the meaning of words, grammatical structures, and phonetics due to the complexity of Vietnamese (Fist News, 2018; Le Thi Hiep, 2017; Park Ji Hoon, Chu Thị Phong Lan, & Tran Thi Huong, 2020). In terms of teaching methods, many studies have also found that teachers' use of Vietnamese idioms has a significant effect on increasing the effectiveness of Vietnamese learning for second language learners (Dinh Thi Thy Trang, 2009). Based on the assessment of the subject program, Vietnamese learners on Vietnamese television, the failure to apply appropriate teaching methods have made the lessons tedious, making it difficult for learners to understand the meaning of words and knowledge of Vietnamese culture (Vu Duc Nghieu, 2005). On the same topic, other studies have also shown the effect of repetition in lectures taking place in many areas: phonetics, vocabulary, and grammatical sentence structure, which have helped second language learners have the opportunity to learn and review what they have learned (Vu Duc Hoa, 2005).

Teaching methods must be innovated, and learners' activities must prevail in the lesson. The teacher's role is to select appropriate cultural materials and compare and contrast cultural differences by foreign language and mother tongue (Liu, 2003; Moon, 1998; Cooper, 1998; Simpson & Mendis, 2003). Traditional teachers who transmit static information available about culture do not develop learners' cross-cultural communication; instead, such approaches support culture-based generalizations or stereotypes (Liddicoat & Scarino, 2013).

#### *The principles of a cognitive and cultural combination approach in teaching a second language*

Perception is not only a cross-language phenomenon but also a cross-cultural phenomenon. The simplest cognitive expressions have the same conceptual and linguistic formality in both the native and target languages (Charteris-Black, 2002). When there are differences between conceptual systems and cultural meanings in the native and target languages, difficulties in understanding cognitive expressions in the target language are inevitable (Charteris-Black, 2002; Cameron & Deignan, 2006). Perception and culture are merged into a single conceptual complex. Therefore, teachers and learners need to be familiar with the conceptual systems of the target language and its speakers. (Kovecses, 2003).

Most of the obstacles can be traced back to cultural clashes. Therefore, perception bears the cultural imprint of society and significantly impacts all aspects of human life. At the same time, traditions and customs greatly influence people's thinking; therefore, perception is placed with the label of particular customs and traditions (Milroy, 1994; Brumfit, 1994). Teaching language by persevering requires learners to reveal the cultural background and meanings of related vocabulary in which learners are instructed to study cognitive usage, especially polysemy, in the early stage. At a later stage, mental knowledge is vital, such as the relationship between perception and thought perception and culture, and perception and understanding (Milroy, 1994; Brumfit, 1994).

The cognitive technique compares two concepts in which one is understood in terms of the other (Ellis & Barkhuizen, 2005). Perception is now often seen as characteristic of mere language, a matter of speech rather than thought or action (Lakoff

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& Johnson, 1980). We are examining how perception from the learner's point of view can provide valuable insights into language teaching. Cognitive understanding involves both mental and sociocultural factors. As a result, perception is essentially culture-specific. The correct version of cognition is determined in part by the expected cultural proficiency. Thus, social and cognitive factors influence our interpretation of any expression, especially percepts. It is said that a language is not a monolith but a complex network of continuous variations. (Milroy, 1994; Brumfit, 1994).

The reader interprets the same cognition in quite different ways, further confirming the assumption that translation is a risky business, requiring not only the exchange of ideas encapsulated in a language but also an effort of imagination and analogy about part of the context (Milroy, 1994; Brumfit, 1994). Provided that the medium, the cognitive construction in the source domain, has the same usage in the target domain, the literal translation is the best way to keep the image alive and the effect of the source perception. On the other hand, cultural conflicts lead to conflicts of languages. In the means and construction of the perception of the source domain, not all can find the same usage in the target domain; therefore, equivalent images or structures in the target domain should be found to replace the source domain. Otherwise, the perceived effect of the source domain will be reduced. Cognitive skills reflect their nation's customs, habits, living situations, and folk stories, so the translation needs to be compensated for helping understand the cognitive meanings of linguistic sources. Although the images of the source domain can be found in the destination domain, they do not carry the cognitive significance of the source domain. In that case, a combination of literal and figurative translation can help convey cognitive meanings (Milroy, 1994; Brumfit, 1994).

### *The factors affecting the results of second language learning*

Four factors affect it: First—personal views of learners and teachers (Jordan, Carlite & Stack; 2008). Cognitive language teaching is based on the thought process behind the behavior, consciously in the learner's mind, focusing on how the learner thinks, understands, and knows (Asiaeuniversity, 2012). An individual's perception plays an essential and primary role in developing and maintaining emotional and behavioral responses to life situations (Penedes & Resko, 2019). Secondly—principles of cognition involves studying mental processes such as sensation, perception, attention, encoding, and memory (Jordan, Carlite & Stack, 2008). Thirdly. It is the meaning of the subject or the meaning of education. According to Suharto (2010), the cognitive perspective considers learners to become active information processors. Finally. Teaching a second language through a cognitive approach tries to motivate learners to figure out how to solve problems and undertake exploratory learning, cognitive strategies, and project-based learning. This means problem-based learning, discovery learning, and scenario learning. (O'Donnell, 1997; Ryan & Murray, 2009).

The effectiveness of teaching a second language depends on the learners' readiness and the classroom's organization. Classrooms must be structured, so learners continually build on what they have learned (Jonassen, 1991). Effective second language teaching manifests in what learners get after finishing the course. It includes revitalizing grammar in the classroom, helping learners to guide the rules of language, and removing language habit formation through behavior. Learning is not habit-forming but requires cognitive processing and mental effort because learners are thinking creatures. Develop error analysis skills and contextual grammar instructions (Corder, 1967). Second-language learners succeed when they move from focusing more on language to thinking more (Chomskian, 1965, 1976, 1980, 1981, 1982). Learners understand a grammar rule well before practicing it in meaningful contexts (Carroll, 1966).

There is much research on teaching and learning a second language early (Rubin, 1975; Gan et al., 2004; Gillette, 1987; Halbach, 2000; Naiman et al., 1978; Norton & Toohey, 2001; Rubin, 1981; Stern, 1975). Previous studies of good language learners have identified five key aspects of successful language learning: (1) concern with language form, (2) concern with communication (functional practice), (3) a task-active approach, (4) awareness of the learning process, and (5) the ability to use strategies flexibly in accordance with task requirements (Ellis; 2008). Seven strategies related to good language learning are as follows (Rubin, 1975): 1. A good language learner is ready and guesses correctly; 2. Good language learners are motivated to communicate or learn from a community; 3. Good learners of foreign languages are usually not inhibited; 4. In addition to focusing on communication, be well prepared, looking for patterns in the language; 5. Good learners focus on practice; 6. Good language learners monitor their own and others' speech; 7. Good language learners pay attention to meaning. Many studies have also shown that successful students demonstrate greater use of learning strategies or apply more appropriate strategies to learning tasks (Halbach, 2000; Gan et al., 2004). Because successful language learning depends on variables such as aptitude, motivation, and appropriateness (Rubin, 1975).



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**Table 1. Summary of factors affecting the effectiveness of second language learning**

<p>READINESS</p>	<p>Pay attention to the form of language; Interest in communication (functional practice) and active duty approach; Awareness of the learning process; Ability to use strategies flexibly by mission requirements.</p>	<p>Halbach, 2000; Gan et al., 2004</p>
<p>STRATEGY</p>	<p>Successful language learners are willing and able to guess correctly; Successful language learners are strongly motivated to communicate, or learn from, a community; Successful learners of foreign languages are usually not inhibited; In addition to focusing on communication, be well prepared, looking for patterns in the language; Successful learners focus on practice; Successful language learners monitor their own and others' speech; Successful language learners pay attention to meaning.</p>	<p>Ellis; 2008</p>
<p>EFFECTIVE LEARNING</p>	<p>Revival of grammar in the classroom; Understanding how to learn the guided discovery of the rules of language; Eliminate the formation of language habits through behavior; Mental effort because learners are thinking creatures; Develop fault analysis skills; Apply contextual grammar; Understand a grammar rule well before practicing it in meaningful contexts.</p>	<p>Rubin, 1975</p>

**Source:** Researcher's compilation

### Hypotheses

Based on the research model, the following hypotheses were formed:

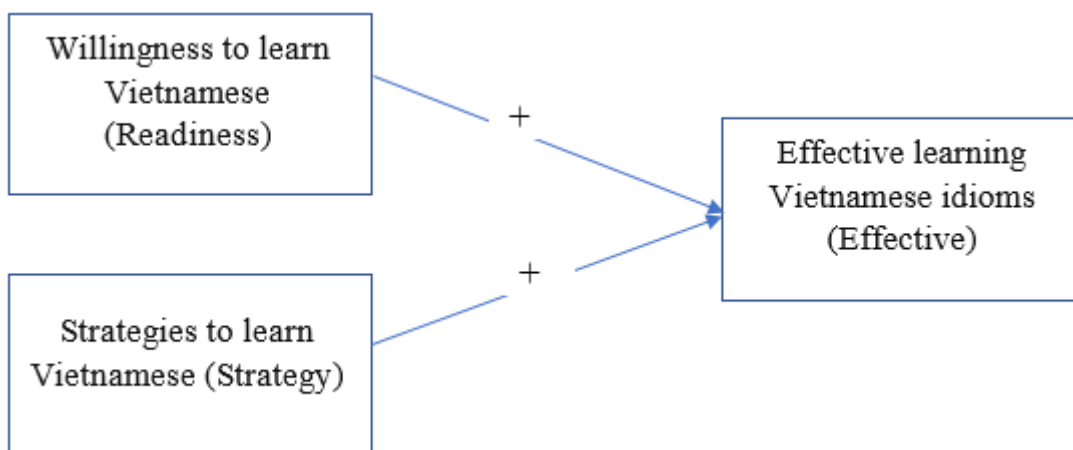
H1. Willingness to learn Vietnamese positively and significantly impacts Vietnamese idioms learning effectiveness.

H2. Vietnamese language learning strategies have a positive and meaningful impact on the effectiveness of Vietnamese idioms learning.

From these research hypotheses, the following research model is built (Figure 1).

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Figure 1: The Research Model



## RESEARCH METHOD

This study was conducted at universities in Hanoi in April 2022. This city has 100 universities, the most in Vietnam. Universities that offer high-quality Vietnamese language courses for non-Vietnamese speakers, such as Hanoi University, Hanoi National University of Education, and University of Foreign Languages - Hanoi National University. In addition to Vietnamese language courses at the university, many centers offer Vietnamese courses that teach the Vietnamese language and culture to foreigners in Hanoi. To carry out this study, the research team used a qualitative method through in-depth interviews with educational researchers and linguistics to build a research scale and improve the questionnaire accordingly. The questionnaire was built based on the results of the research overview and experts' opinions, including two parts. Part 1 is used to collect demographic information of study participants, such as age, gender, and country. Part 2 collects information about study participants, including Vietnamese learning effectiveness, willingness to learn Vietnamese, and Vietnamese learning strategies (Table 1). This section inherits the research results of Rubin (1975), Halbach (2000), Gan et al. (2004), and Ellis (2008).

The English questionnaire was translated into Vietnamese by two professional interpreters. The translation process is carried out according to the rules to adapt between Vietnamese cultures. After the translators' and principal investigator's discussion and final consensus, a single Vietnamese version was created. A professional bilingual expert in education contributed to this version to create a final version. This final version was pre-tested on 10 participants selected to be demographically representative of age, sex, and country. These people have lived in Vietnam for at least two years and have completed the Vietnamese language program. The lecturers of these people applied cognitive techniques to analyze Vietnamese idioms (source, target, and meaning). During the assessment, participants were asked to complete this final version. Minor edits followed this to improve the question structure for better understanding, and the final Vietnamese version was completed using the official survey. Finally, the purposeful sampling method sent the questionnaire directly to the respondents. Respondents have lived in Vietnam for at least one year and have completed a basic Vietnamese program. As a result, achieving a response rate of 100%. Demographic information of study participants (Table 2).

Table 2. Demographic characteristics of survey participants

		age							
		20 years old		21 years old		22 years old		over 22 years old	
		N	Row N %	N	Row N %	N	Row N %	N	Row N %
Gender	Female	9	15.0%	11	18.3%	30	50.0%	10	16.7%
	Male	4	10.0%	8	20.0%	21	52.5%	7	17.5%
Country	Australia	2	22.2%	2	22.2%	4	44.4%	1	11.1%
	Cambodia	1	5.3%	5	26.3%	9	47.4%	4	21.1%
	China	5	16.1%	3	9.7%	18	58.1%	5	16.1%
	Laos	3	25.0%	2	16.7%	4	33.3%	3	25.0%

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	Russia	0	0.0%	2	16.7%	8	66.7%	2	16.7%
	South Korea	2	11.8%	5	29.4%	8	47.1%	2	11.8%
Duration	1 to 2 years	2	10.5%	2	10.5%	11	57.9%	4	21.1%
	2 to 3 years	7	16.3%	7	16.3%	19	44.2%	10	23.3%
	Less than 1 year	2	11.8%	5	29.4%	9	52.9%	1	5.9%
	more than 3 years	2	9.5%	5	23.8%	12	57.1%	2	9.5%

### RESEARCH RESULTS

R Programming language is used to analyze the scale's reliability, exploratory factor analysis, correlation analysis, and regression analysis.

#### Analyzing the Reliability of the Scales:

The purpose of testing the scales through Cronbach's Alpha reliability coefficient is to identify and eliminate junk variables to avoid creating misleading factors when analyzing exploratory factor analysis. Cronbach's Alpha coefficient has a variable value in the interval [0,1]. If a measurement variable has a total correlation coefficient of Corrected Item - Total Correlation  $\geq 0.3$ , then that variable meets the requirements (Cronbach, 1951; Taber, 2018). The verification criterion is that Cronbach's Alpha coefficient must be greater than 0.6, and the correlation coefficient of the sum variable in each scale must be greater than 0.3 (Hair, Black, Babin, & Anderson, 2010). Table 3 shows that the scales of the factors are all valid. Therefore, all the scales of the factors are reliable and used for subsequent factor analysis.

**Table 3. Summary of Reliability and Relative Minimum Variables of Scales**

Scales	Number of variables observed	Reliability coefficients (Cronbach Alpha)	The correlation coefficient of the smallest total variable
Readiness	4	0.603	0.460
Strategy	7	0.883	0.624
Effective	7	0.856	0.588

After testing Cronbach's Alpha, the author uses the Exploratory factor analysis (EFA) method to preliminary evaluate the scales' unidirectional, convergent and discriminant values. EFA was used by extracting the Principal Components Analysis Factor and Varimax rotation to group the factors. With a sample size of 100, the factor loading of the observed variables must be greater than 0.5; variables converge on the same factor and are distinguished from other factors. In addition, the Kaiser-Meyer-Olkin (KMO) coefficient, which is used to consider the adequacy of factor analysis, must be in the range of  $0.5 \leq KMO \leq 1$  (Cerny & Kaiser, 1977; Kaiser, 1974; Snedecor, George, Cochran & William, 1989).

The analysis results in Table 4 show that all factor loading coefficients of the observed variables are greater than 0.5; Bartlett test with Sig meaning = 0.000 with KMO coefficient = 0.911. There are four items eliminated due to factor loading  $< 0.50$ . All 15 items using EFA are extracted into three factors with Eigenvalues  $> 1$  and Cumulative variance percent = 61 %. Thus, the research model consisting of 2 independent and one dependent variable is used for linear regression analysis and subsequent hypothesis testing.

**Table 4. Exploratory factor analysis**

Rotated Component Matrix <sup>a</sup>			
	Component		
	1	2	3
strategy6	.743		
strategy7	.731		
strategy1	.726		
strategy4	.708		

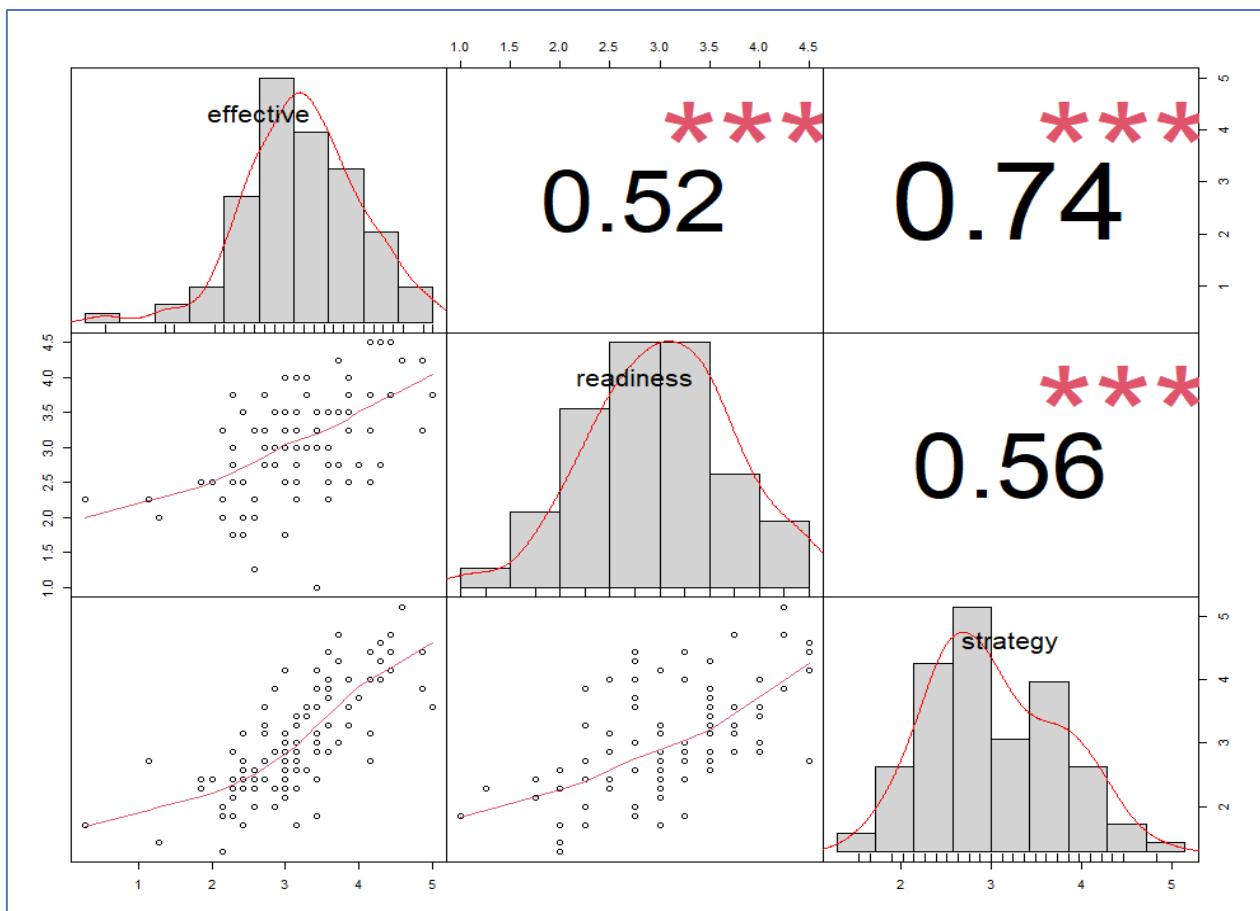
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strategy2	.630		
strategy5	.626		
strategy3	.597		
effective5	.501		
effective3		.760	
effective6		.715	
effective4		.661	
effective1		.606	
readiness2			.822
readiness3			.732
readiness1			.722
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

### Pearson correlation analysis

The author uses Pearson correlation analysis to analyze the correlation between quantitative variables. Figure 2 shows that, at the 5% significance level, the correlation coefficient shows that the relationship between the dependent and independent variables is statistically significant (Sig. < 0.05). The magnitude of the correlation coefficients ensures that multicollinearity does not occur. Therefore, the next step, the multivariate linear regression analysis procedure, is valid.

**Figure 2. Pearson correlation analysis results**



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### Moderation regression analysis

Multivariable linear regression analysis on the relationship between two independent variables named readiness, strategy and one dependent variable named effective (Table 4).  $R^2 = 0.563$  shows that the built linear regression model fits the data set = 0.563 %. Thus, the two independent variables have a statistically significant impact on the dependent variable..

**Table 4. The results of multiple linear regression analysis**

Dependent variable:	
effective	
readiness	0.179* (0.092)
strategy	0.638*** (0.079)
Constant	0.645** (0.253)
Observations	100
R2	0.563
Adjusted R2	0.554
Residual Std. Error	0.546 (df = 97)
F Statistic	62.584*** (df = 2; 97)

Note: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

Table 4 shows that, at the 95% significance level, the hypotheses proposed by the research team are accepted. Specifically, the willingness to learn Vietnamese has a positive and significant impact on the effectiveness of Vietnamese language learning with a regression coefficient ( $\beta = 0.179$ ) and a 95% significance level ( $p.value = 0.05$ ). That is, at the 95% significance level, when other conditions are unchanged, the factor of willingness to learn Vietnamese increases by 1 unit, and the efficiency of Vietnamese learning increases by 0.179 units. Similarly, when other conditions are constant, the strategic factor of learning Vietnamese increases by 1 unit, and the influential factor of learning Vietnamese increases to 0.638 units.

### DISCUSSION AND CONCLUSIONS

*Firstly.* Research results (Table 4) show that there is a close relationship between the factor of willingness to learn Vietnamese and the effectiveness of learning Vietnamese idioms. This is shown in the correlation coefficient (Figure 2) between the readiness variable and the effective variable ( $r = 0.52$ ) and the 95% significance level ( $p.value = 0.000$ ); regression coefficient ( $\beta = 0.179$ ) and 95% significance level ( $p.value = 0.05$ ). The results of this study demonstrate that learners are interested in language forms, are interested in active communication practices, are aware of the learning process, and can use learning strategies flexibly to their needs. Consistent with the task requirements positively impact the effectiveness of learning Vietnamese idioms. This result is similar to previous findings in other countries (Halbach, 2000; Gan et al., 2004).

*Secondly.* Research results (Table 4) show that compared with the readiness variable, the strategy variable has a stronger and more significant positive impact on the effect variable. This result is expressed at the correlation coefficient ( $r = 0.74$ ) and the 95% significance level ( $p.value = 0.000$ ), the regression coefficient ( $\beta = 0.638$ ) and the 95 % significance level ( $p.value = 0.000$ ). ). The results of this study prove that good foreign language learners are those who are willing and guess correctly, have strong motivation to communicate, or learn from a community, are not inhibited, focus on communication, have good preparation, focus on practice, monitor one's own and others' words and paying attention to the meaning; all these factors have a positive impact on the effectiveness of learning Vietnamese idioms. This result is similar to the previous finding of Ellis (2008)..

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*Thirdly.* This study shows that both the willingness to learn Vietnamese and the Vietnamese language learning strategy positively and significantly impact the effectiveness of learning Vietnamese idioms. Furthermore, this result proves that teaching Vietnamese idioms to people who do not use Vietnamese as a second language on the principle of a combined cognitive and cultural approach is applied to those who do not use Vietnamese as a second language is very successful. The previous studies have also implied that the cognitive approach combined with culture will provide a systematic approach to teaching cognitive expressions that facilitate learning and processing. Information for language learners (Lakoff, 1987; Lakoff & Johnson, 1980; Danesi, 1994).

*Finally.* The results of this study imply that teachers who teach Vietnamese idioms to people who do not use Vietnamese as their mother tongue need to focus on learners' learning strategies. Learning strategies have a significant impact on learning effectiveness. If learners have appropriate learning strategies, they will have high learning results. Teachers need to guide learners to be ready and correctly guess language situations by cognitive techniques in the Vietnamese cultural context; Learners need strong motivation to communicate to avoid being inhibited. In addition to focusing on communication, good preparation, and constantly searching for patterns in the language, good learners focus on practicing, effectively monitoring their own and others' words, and paying attention to the meaning of the message.

### LIMITATIONS

As with other empirical studies, there are limitations to this study that should be considered when discussing the results. First, our survey method reflects the subjective perception of the respondents toward the questions being investigated. Subjective data has inherent weaknesses that are hard to avoid in surveys (Thanh, Thuy, Hoa, & Thien, 2022). Our data is collected over the same period. Cross-sectional data do not allow for a dynamic assessment of students' changes in intentions and related behaviors regarding their foreign language learning intentions, which may affect their applicability (Tung, Thanh, Thao, Thu, Nguyet, & Tu, 2021). Future research should combine cross-sectional and longitudinal studies. The purposeful sampling method has certain limitations and does not fully reflect population characteristics (Thanh, Tung, Thu, Kien, & Nguyet, 2021; Strong et al., 2018). Our survey was conducted in Hanoi. Therefore more general statements are needed that could be made by applying the research development model and research conclusions to other areas in the region. Vietnam and other cultures (Sun et al., 2012).

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### Conflict of interest

The author declares that there is no conflict of interest.

### REFERENCES

- 1) Alahmadi, B. H. (2009, December). How Can Synchronous Computer-Mediated Communication SCmC Be Exploited to Help Develop the Speaking Skills of the Saudi English Language Learner?. In 2009 International Conference on Information and Multimedia Technology (pp. 279-283). IEEE.
- 2) Byram, M. (1997). Teaching and assessing intercultural communicative competence. Clevedon: Multilingual Matters.
- 3) Cameron, L., & Deignan, A. (2006). The emergence of metaphor in discourse (Electronic version). *Applied Linguistics*, 27(4), 671-690.
- 4) Carroll, J. B. (1964). Language and thought. *Reading Improvement*, 2(1), 80.
- 5) Carter, R. & McCarthy, M. (1988). *Vocabulary and language teaching*. London: Longman.
- 6) Cerny, B. A., & Kaiser, H. F. (1977). A study of a measure of sampling adequacy for factor-analytic correlation matrices. *Multivariate behavioral research*, 12(1), 43-47.
- 7) Charteris-Black, J. (2002). Second language figurative proficiency: A comparative study of Malay and English. *Applied Linguistics*, 23(1), 104-133.
- 8) Chomsky. (1957). *Syntactic structure*. The Hague: Mouton, 1957.
- 9) Chomsky, C. (1976). After decoding: what?. *Language arts*, 53(3), 288-314.
- 10) Chomsky, N. (1981). Knowledge of language: Its elements and origins. *Philosophical Transactions of the Royal Society of London. B, Biological Sciences*, 295(1077), 223-234.
- 11) Chomsky, N. (1982). *Some concepts and consequences of the theory of government and binding*. MIT press.
- 12) Chomsky, N., & Halle, M. (1965). Some controversial questions in phonological theory. *Journal of linguistics*, 1(2), 97-138.

## Factors Affecting the Efficiency of Teaching the Vietnamese Idioms to Foreigners Based on the Principle of Combined Cognition and Culture

- 13) Conway, C., Richards, H., Harvey, S., & Roskvist, A. (2010). Teacher provision of opportunities for learners to develop language knowledge and cultural knowledge. *Asia Pacific Journal of Education*, 30, 449-462.
- 14) Cooper, C. T. (1998). Teaching idioms. *Foreign Language Annals*, 31(2), 255-266.
- 15) Corder, S. P. (1967). The significance of learner's errors.
- 16) Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika*, 16(3), 297-334.
- 17) Danesi, M. (1994). *Cool: The signs and meanings of adolescence*. University of Toronto Press.
- 18) Deignan, A., Gabrys, D., & Solska, A. (1997). Teaching English metaphors using cross-linguistic awareness-raising activities (Electronic version). *ELT Journal*, 51(4), 352-360.
- 19) Dinh Thi Thuy Trang. (2009). Modal adverbs in Vietnamese textbooks for foreigners. Master's Thesis in Linguistics. University of Social Sciences and Humanities - Hanoi National University.
- 20) Ellis, R. (2008). *The study of second language acquisition*. Oxford: Oxford University Press.
- 21) Ellis, R., & Barkhuizen, G. (2005). *Analyzing learner language*. Oxford: University Press.
- 22) Fernando, C. (1996). *Idioms and idiomaticity*. Oxford: Oxford University Press.
- 23) First News. (2018). *Vietnamese Language Learning Manual for Foreigners (Reprint)*. Ho Chi Minh City Publishing House.
- 24) Gairns, R. & Redman, S. (1986). *Working with words*. Cambridge University Press.
- 25) Gan, Z., Humphreys, G., & Hamp-Lyons, L. (2004). Understanding successful and unsuccessful EFL students in Chinese universities. *Modern Language Journal*, 88, 229-244.
- 26) Gillette, B. (1987). Two successful language learners: An introspective approach. In C. Faerch & G. Kasper (Eds.), *Introspection in second language research* (pp. 268-279). Philadelphia: Multilingual Matters.
- 27) Gonzalez-Prendes, A. A., Resko, S., & Cassady, C. M. (2019). *Cognitive-Behavioral Therapy*. In *Trauma* (pp. 20-66). Columbia University Press.
- 28) Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis. A global perspective*, 7.
- 29) Halbach, A. (2000). Finding out about students' learning strategies by looking at their diaries: A case study. *System*, 28, 85-96.
- 30) Ivanov. (2005). *Interaktini metodi za rabota v multikulturalna sreda*. Narachnik. Shumen.
- 31) Jackson, J. (2014). *Introducing language and intercultural communication*. Oxon. Routledge
- 32) Jonassen, D. H. (1991). Objectivism versus constructivism: Do we need a new philosophical paradigm?. *Educational technology research and development*, 39(3), 5-14.
- 33) Kaiser, H. F. (1974). An index of factorial simplicity. *psychometrika*, 39(1), 31-36.
- 34) Khuong, Luu. (2017). Features of teaching Vietnamese as a foreign language to foreigners at Faculty of International Studies, University of Foreign Languages - University of Danang. *VNU Journal of Foreign Studies*, 33. 10.25073/2525-2445/vnufs.4197:
- 35) Kovecses, Z. (2003). Language, figurative thought, and cross-cultural comparison. *Metaphor and Symbol*, 18 (4), 311-320.
- 36) Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago/London: The University of Chicago Press.
- 37) Lakoff, G. (1987). *Women, fire and dangerous things: what categories reveal about the mind*. Chicago/London: University of Chicago Press.
- 38) Lattey, E. (1986). Pragmatic classifications of idioms as an aid for the language learner. *IRAL*, 34(3), 217-33.
- 39) Lazar, G. (1996). Using figurative language to expand students' vocabulary. *ELT Journal*, 50(1), 43-51.
- 40) Le Thi Hiep. (2017). *Vietnamese for Foreigners - Beginner Program, 1st Edition (Attached CD)*. World Publishing House.
- 41) Liddicoat, A.J., & Scarino, A. (2013). *Intercultural Language Teaching and Learning*. West Sussex: Wiley-Blackwell.
- 42) Liu, D. (2003). The most frequently used spoken American English idioms: a corpus analysis and its implications. *TESOL Quarterly*, 37(4), 671-700.
- 43) Mergel, B. (1998). Instructional design and learning theory. In Sackney, L., & Mergel, B. (2007). *Contemporary learning theories, instructional design and leadership*. In *Intelligent leadership* (pp. 67-98). Springer, Dordrecht.
- 44) Milroy, L. (2003). Social and linguistic dimensions. *Social dialectology: in honour of Peter Trudgill*, 16, 155.
- 45) Mitchell, R., Brumfit, C., & Hooper, J. (1994). 'Knowledge about Language': policy, rationales and practices. *Research Papers in Education*, 9(2), 183-205.
- 46) Moon, R. (1998). *Fixed expressions and idioms in English*. Oxford: Clarendon Press.
- 47) Naiman, N., Frohlich, M., Stern, H.H., & Todesco, A. (1978). *The good language learner (Research in Education Series No.7)*. Toronto: Ontario Institute for Studies in Education.

## Factors Affecting the Efficiency of Teaching the Vietnamese Idioms to Foreigners Based on the Principle of Combined Cognition and Culture

- 48) Nguyen, Luong Hai Nhu.(2012). Upper Primary Students' Perceptions of Small Group Learning in Learning Vietnamese Language. <http://hdl.handle.net/10063/2508>
- 49) First News. (2018). Vietnamese Language Learning Manual for Foreigners (Reprint). Ho Chi Minh City Publishing House.
- 50) Norton, B., & Toohey, K. (2001). Changing perspectives on good language learners. *TESOL Quarterly*, 35, 307-322.
- 51) O'Donnell, T. J. (2015). *Productivity and reuse in language: A theory of linguistic computation and storage*. MIT Press.
- 52) Park Ji Hoon, Chu Thi Phong Lan, & Tran Thi Huong. (2020). *Vietnamese for Koreans - Beginner*. Hong Duc Publishing House
- 53) Piattelli-Palmarini, M. (1980). Language and learning: the debate between Jean Piaget and Noam Chomsky.
- 54) Rubin, J. (1975). What the "good language learner" can teach us. *TESOL Quarterly*, 9, 41-51.
- 55) Rubin, J. (1981). Study of cognitive processes in second language learning. *Applied Linguistics*, 77, 117-131.
- 56) Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- 57) Sercu, L., Bandura, E., Castro, P., Davcheva, L., Laskaridou, C., Lundgren, U., del, M., Mendez Garrfa, C., & Ryan, P. (2005). Foreign language teachers and intercultural competence: An international investigation. Clevedon: Multilingual Matters.
- 58) Simpson, R., & Mendis, D. (2003). A corpus-based study of idioms in academic Speech. *TESOL Quarterly*, 37(3), 419-441.
- 59) Snedecor, G. W., & Cochran, W. G. (1989). *Statistical Methods*, eight edition. Iowa state University press, Ames, Iowa, 1191.
- 60) Stern, H.H. (1975). What can we learn from the good language learner? *Canadian Modern Language Review*, 37, 304-318.
- 61) Strong, P. M. (2018). *The ceremonial order of the clinic: Parents, doctors and medical bureaucracies*. Routledge.
- 62) Suharno, S. (2010). Cognitivism and its implication in the second language learning. *Parole: journal of linguistics and education*, 1, 72-96.
- 63) Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education*, 48(6), 1273-1296.
- 64) Thanh, N. N., Thuy, H. T. T., Hoa, N. T. T., & Thien, N. D. (2022). The relationship between ethical leadership, job engagement, and job performance: evidence from the public sector in Vietnam. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 19(2), 1161-1176.
- 65) Thanh, N. N., Tung, P. H., Thu, N. H., Kien, P. D., & Nguyet, N. A. (2021). Factors affecting the share of fake news about Covid-19 outbreak on social networks in Vietnam. *Journal of Liberty and International Affairs*, 179-195.
- 66) Tung, P. H., Thanh, N. N., Thao, T. D., Thu, N. H., Nguyet, N. A., & Tu, D. T. (2021). Effects of Facebook Use on the Average of Students Who have not Completed the Class at Public University in Hanoi Capital, Vietnam. *Review of International Geographical Education Online*, 11(5), 3381-3390.
- 67) Turan, Y. (2018). Role of affective factors in foreign language learning. *Journal of Educational & Instructional Studies in the World*, 8(3).
- 68) Vu Duc Nghieu. (2005). Designing programs and lesson models for teaching Vietnamese to foreigners on grassroots television. Code: QX2003:03.
- 69) Vu Thi Hoa. (2005). Design test and assessment of Vietnamese language proficiency for foreigners learning Vietnamese at the grassroots level. Master's Thesis in Linguistics. University of Social Sciences and Humanities - Vietnam National University, Hanoi.
- 70) Wijayanti, D. N. (2013). *Constructivism theory of language teaching and learning*.
- 71) Wray, A. (1999). Formulaic language in learners and native speakers. *Language Teaching*, 32, 213-231.
- 72) Wray, A. (2000). Formulaic sequences in second language teaching: Principles and practice. *Applied Linguistics*, 21(49), 463-489.
- 73) Young, T.J., & Sachdev, I. (2011). Intercultural communicative competence: Exploring English language teachers' beliefs and practices. *Language Awareness*, 20, 81-98.



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## Analysis of Hadith Understanding Method among Millennial Ulama in Central Sulawesi, Indonesia



Kamarudin Kamarudin<sup>1</sup>, Muhammad Jabir<sup>2</sup>

<sup>1,2</sup> Faculty of Tarbiyah and Teacher Training, Universitas Islam Negeri Datokarama Palu

**ABSTRACT:** This study aims to determine the methods and ways of understanding hadith among millennial scholars in the Internet era today. The presence of information technology has occurred in learning methods and ways of understanding hadith among the younger generation of scholars. This is in line with previous research that the younger generation of Muslims has used the Internet as a source of learning about the Islamic religion. Likewise, how to understand hadith among millennial scholars have also used online means to understand hadith through various online sources. This study uses a qualitative method with data collected through focus group interviews and in-depth interviews with 35 young scholars in Central Sulawesi. Data were analyzed using the thematic approach of Corbin and Strauss. The results of this study indicate that millennial scholars have used the Internet to study hadith. Millennial scholars have also affiliated with specific religious organizations online to study hadith. Then the millennial scholars are affiliated with specific religious figures online to understand hadith. Furthermore, millennial scholars also believe that the Internet can help understand hadith learning by sharing hadith knowledge online. This research can contribute to simplifying the learning process and understanding various hadiths that do not have to rely on conventional sources such as Islamic boarding schools, madrasas, and scholars manually

**KEYWORDS:** Milenial ulama, hadith understanding method, hadith learning

### I. INTRODUCTION

The study of hadith among senior scholars is quite good. This is evidenced by the birth of several prominent contemporary hadith scholars in Indonesia, such as Shaykh Ahmad Hassan, T.M. Hasbi Ash Shiddieqy, Shaykh Ali Hasan Ahmad, and Fatchur Rahman (Wahid, 2019). These scholars have significantly contributed to developing the science of hadith in Indonesia. Then through description-analysis of various studies also show how the development of understanding of hadith in Indonesia in each period and its shift. In addition, it seeks to offer principles in understanding hadith today. As a result, the changes that appear are four models, namely first, simply understanding the hadith; second, understanding the hadith is limited to the internal text of the hadith; third, understanding the hadith contextually; and fourth, understanding the textual-literal hadith. And some offers that can be used in understanding hadith are four principles, namely the principles of equality, justice, non-radical, and non-political. (Anggoro, 2019)

However, the study of hadith at the time of the current younger generation of scholars or millennial scholars born after the seventies feels less and less. This is due to the growing development of hadith study facilities in the form of information technology assistance. For example, SyarifHidayatullah State Islamic University (UIN) study concluded that the internet is the primary reference for the millennial generation in religion. This shift results from the digital era that has shaped an all-new Islamic civilization. The National Survey conducted by the Center for the Study of Islam and Society at the SyarifHidayatullah State Islamic University of Jakarta concluded that the primary reference for the millennial generation in religion is the internet (Tohir, 2018). Online tools have become a new medium for studying Islamic teachings, including fiqh issues (Scharank, 2012). This phenomenon also applies to the study of hadith, mainly where young scholars learn hadith through available online sources.

As a result, conventional hadith study methods are rarely carried out, such as studies in Islamic boarding schools or with older scholars. The impact of the infrequent study of hadith face-to-face in Islamic boarding schools or with senior scholars is the reduced understanding of hadith and its method of analysis among young scholars. However, research on the level of knowledge of hadith and methods of understanding hadith among millennial scholars is rarely carried out. For this reason, this study will examine the understanding of hadith and the methods used among young scholars. The aim is to provide

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understanding to Islamic experts regarding the development of understanding of hadith among the young generation of Muslims today, especially young scholars who play an active role in Islam today.

### **II. LITERATURE REVIEW**

#### **2.1 Method of Understanding Hadith**

The method of understanding hadith is a systematic and orderly way to understand what the Prophet Muhammad meant in various hadiths. In other words, the method of understanding hadith is a concept and methods and strategies used to interpret and understand the Prophet Muhammad's hadith from beginning to end. According to a number of experts, there are several methods for understanding hadith. According to Fauji(2018), the methods of understanding taught by ibn Qutaibah include:

##### **Understanding the Status of Hadit**

Understanding the status of hadith is one of the abilities to know whether a hadith is valid or not. According to experts, there are several types when viewed from the wetness, which include authentic hadith, hasan hadith, weak hadith, and fake or mudhu hadith (Hadi, 2021). The scholars agree that the accepted hadiths are authentic and hasan hadith to be used as a basis for religion. While weak hadiths can still be used in sunnah practices, they cannot be used for legal and creed purposes. To find out the status of the validity of a hadith can be done by checking the continuity of the hadith chain to the prophet Muhammad SAW. Then the following way is to check whether the narrator is credible and trustworthy. The third way is to check whether the narrator of a hadith has intense memorization and memory or not. Then there is no conflict or shadz with the narrator.

##### **Understanding the Asbāb Al-Wurūd**

Understanding hadith by knowing asbab al-wurud is a way of understanding hadith based on the background of its origin. If you don't see the background of the delivery of a hadith, it won't be easy to understand the hadith. In this case, asbab al-wurud is a fundamental science in building an understanding of a hadith because understanding asbab al-wurud means that we know why a hadith was born. The word asbabul wurud comes from the Arabic sentence, namely سبب which means the cause or chronological occurrence of an event, and ورود, which means to come. Thus asbabulwurud is a chronology of the occurrence of an event (alfansury, 2021). For this reason, the ability to understand asbabulwurud means that someone can explain the chronology of the occurrence of an event.

##### **Performing Ta'wil on One of the Hadīs**

Ta'wil is defined as a form of diversion of pronunciation from the meaning of zahir to the intended meaning (esoteric) (Dedi, 2018). In this case, some arguments show that writing means meaning, not other symbolic meanings. Experts interpret ta'wil as the turning of a lafaz from the meaning of zahir to another meaning that cannot be caught quickly because arguments show what the lafaz means. Thus, ta'wil is an azh-zhahir lafaz because it shows a zhanni meaning (a strong assumption) but is still open to other meanings but is only a weak assumption.

##### **Performing Ta'wil on Two Conflicting Ḥadīs**

Understanding contradictory hadiths are essential for someone to find the ultimate truth of a hadith. In understanding conflicting traditions, it can be done in a way that includes the use of al-Jam'u (compromise), al-Tarjih (superioration of one proposition over another), and al-Nasakh (removal/cancellation of a proposition)(Fauji, 2018). If the two hadiths have contradictory meanings, Imam Muslim mediates the conflict by using the concept of nasakh.

##### **Doing Nasikh-Mansukh or doing Tarjih.**

The word Naskh is defined as remove, delete, move, or write. Al-Baidhowirahimahullah defines the term Naskh as an explanation of the cessation of Shari'ah law with the syar'i way that comes after it (Al-Atsari, 2011). Meanwhile, Ibn Qudamahrahimahullah defines naskh as eliminating the existing law with the words (theorems) before, with the words that come after.

#### **2.2 Contextual Hadith Understanding**

The basis of the word contextual is derived from the word context, which refers to a description or sentence that supports or adds to its meaning, or is related to events or surrounding circumstances (Ermawati, Musyahidah, & Nurdin, 2021). Thus the word contextual is discussed as an explanation for understanding the hadith, which can be in the form of qouly (words), fi'ly (deeds), taqrir (determinations), or anything that is leaning on the Prophet Muhammad based on the circumstances when the hadith appeared. (Nurul, 2021)

Thus the ability to understand hadith contextually is the ability to interpret the meaning of hadith by looking at the relationship between the time and situation when the hadith was born and linking it to current conditions (Tasbih, 2016). There

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are three contextual understandings, namely the contextual concept in the sense of interpreting it in the context of responding to the present whose needs are urgent. Second, the contextual concept is understood in terms that are equated with the relationship with the past, present, and future by first looking at the historical meaning. Third, the contextual concept is defined as occupying the relationship between the central one (the Qur'an) and the implementation.

### 2.3 Understanding Textual Hadith

Textual understanding of hadith is a way of understanding hadith that tends to focus on historical data by emphasizing peeling from the point of language grammar with an episteme bayâni mindset (Channa, 2011; Mukhtar, 2011). Understanding the hadith textually means understanding the hadith in line with the meaning of the text. Thus the hadiths can be understood textually because they contain the substance as written in the text of a hadith. However, in understanding the textual hadith, one must also pay attention to the editorial of the hadith. In other words, if a hadith can be understood textually, its meaning is understood textually enough. But if the textual method alone cannot provide an understanding of a hadith, it is necessary to use a contextual approach.

### 2.4 Millennial Generation Scholars

Generation can be defined as a country's subculture that reflects the shared values of a historical period, specified by significant cultural, political, and economic developments (Egri & Ralston, 2004). Members of this generational subculture rely on a set of beliefs such as shared values, attitudes, and logical processes, which provide the framework by which people in the group think, act, argue, process information, socialize, work, organize, and communicate. The identity of this generation, which is reflected in sub-cultural values, beliefs, understandings, perceptions, orientations, and behaviors, becomes very important when its members gain access to leadership positions in the organization.

The concept of generation becomes useful when conceptualizing transformational processes in values, practices, behaviors, management challenges, learning styles, social networks, and information processing abilities determined by demographic characteristics. In generation theory, certain generations of subcultures develop in response to social changes that occurred during generations of previous years (Mannheim, 1952). Four categories of values can be observed as a way of evaluating characteristics separately (Egri & Ralston, 2004), namely:

- Openness to change (self-direction, stimulation).
- Conservation (conformity, security, tradition).
- Self-improvement (achievement, hedonism, strength).
- And self-transcendence (benevolence, universalism).

Thus, each developing generation can exhibit a particular combination of these value categories, defining their sub-cultural ethos.

Howe and Strauss (2000) first defined the term Millennial as a particular generation group in America born between 1980 or 1982 and 1999, who have specific characteristics that are considered different from previous generations. Howe and Strauss (2000) previously divided generations into three groups: the Silent Generation (1925–1945), Baby Boomers (1946–1964), and Generation X (1965–1979). According to this generation category, the key to understanding each generation group is to look at the socio-economic development of the period in which they live.

Meanwhile, Ling Lim (2012) divides generations into four groups: Traditionalist – 1925-1945. Baby Boomer – 1946-1964. Generation X – 1965-1979, . Generation Y – 1980-1999, and Generation Z – born in 2000. In this case, the millennial generation starts from Generation Y onwards. This millennial generation has characteristics that include living in a digital world, having a strong national identity, being conservative, family and career-oriented, highly committed to education, and experiencing strong financial pressure (Ling Lim, 2012). Another study of Millennial said they were raised as a privileged group, received excessive attention from their parents, and was very confident, competitive, and optimistic about realizing their big dreams (Cole, Smith, & Lucas, 2002). They are school-trained to work together in groups and teams, and most of their lives are spent associating with technology without anyone controlling their access to information (Espinoza & Ukleja, 2010). In general, they reached their teens in the 2000s, which means that at that time, they were ready to enter the workforce or finished their bachelor's degree and were prepared to play an essential role in business, education, health professionals, as well as leaders in various other fields (Balda & Mora, 2011). In short, the Millennial generation is generation Y, born after generation X, a collection of individuals born between 1980 and 2000 (Lloyd et al., 2013).

## III. METHODOLOGY

The research uses a qualitative approach (Jokonya, 2016; Rusli & Nurdin, 2021; Venkatesh, Brown, & Bala, 2013). The qualitative research method is a data collection and analysis procedure carried out with qualitative data on a research object, such as a case

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study (Creswell & Clark, 2011; Nurdin, Nurliana, & Mashuri, 2022; Nurdin & Pettalongi, 2022). Meanwhile, the qualitative data in this study was collected through focus group discussions (FGD) and interviews with several scholars related to the design and creation of a hadith knowledge source site. Then the interview was also associated with their experience using online hadith knowledge source sites (Rusli, Hasyim, & Nurdin, 2021). The interview also aims to re-verify the questions conducted through focus group discussions to obtain more in-depth results from previous researchers (e.g. Gunter, Nicholas, Huntington, & Williams, 2002; Sethuraman, Kerin, & Cron, 2005).

As previous researchers did, data were collected through focus group discussions (e.g. Morgan, 1996, 1997). The study conducted two focus group discussions with several prominent scholars in Central Sulawesi. The focus group discussion aims to gain knowledge (Parent, Gallupe, Salisbury, & Handelman, 2000) methods of understanding the hadith of millennial scholars. Then data were collected through in-depth interviews with several key informants (Minichiello, Aroni, Timewell, & Alexander, 1990; Turner, 2010). The interview in this study is a follow-up to the interview from the focus group discussion.

The power analysis derived from interviews and focus group discussions follows the process suggested by Strauss and Corbin (1998) and Nurdin (2021). The data analysis process is carried out through four stages: open coding, axial coding, and selective coding. In the first stage, the researcher will group the data into various categories based on the literature review's research questions and theoretical constructs. In the next iteration, axial coding connects different types and emerging themes (Corbin and Strauss, 1990). At this stage, various categories of open coding are then extracted into smaller numbers based on the core themes presented by the informants. In the third iteration stage, selective coding assists the researcher in an in-depth assessment of the various categories that have been identified in the second coding stage by "refining their meaning and articulating the relationships among the various categories and themes" (Jin & Robey, 2008, p. 183) to generate new theories and solutions to problems that arise in interviews.

### **IV. RESULTS AND DISCUSSION**

This research was conducted by means of a qualitative method. For this reason, research results are also presented in the form of themes found during the study based on the data analysis process, according to Corbin & Strauss, (2003). The thematic data analysis process suggested by Corbin and Strauss (2003) found five main themes related to the method of understanding hadith among millennial scholars today. These themes explain how the method of understanding hadith shifts among millennial scholars today, whose learning process is strongly influenced by the presence of information technology such as the Internet. The results of this study also clarify the findings of the research institute of SyarifHidayatullah State Islamic Univesity (2020) and several other researchers. They say that the younger generation of Muslims has relied on the Internet to study religion. The themes of the results of this study are explained one by one in the following section, complemented by empirical data obtained during the study.

#### **A. Access Knowledge of Hadith Online**

Access to online hadith management obtained during the study includes three sources: interaction with the ummah, the intensity of exchange, and the existence of networks with other scholars. All sources of hadith knowledge are in an online context. The question was whether the millennial ulemas obtained knowledge of hadith due to their online interactions with the ummah or society. It was found that 87 percent of the millennial scholars interviewed admitted to having gained various related knowledge to hadith or Islamic law in these interactions. Their interactions occur through social media such as Facebook, Whatsapp groups, or other social media. The results of this study have been conveyed by previous researchers that Muslims have accommodated social media as a source of knowledge to find out halal and haram related to specific problems in daily life (Shehu, Othman, & Osman, 2017). Even Nisa(Nisa, 2018) said that social media had become a new movement for Muslims, including the younger generation of scholars, in conveying religious fatwas using various hadiths to their followers.

Furthermore, the quality of interaction also plays a significant role in the acquisition of hadith knowledge for millennial scholars. In field observations, researchers also found that millennials have more than two social media that connect them with the Ummah. They also use social media to interact intensely with the public. Several millennial scholars also have some online groups, both Whatsapp and Facebook, to discuss religious matters; for example, there are study groups between professional groups and study groups formed because they come from the same ethnic group overseas.

The results of this study also show that most millennial scholars agree that their interactions with the community, both in quantity and quality, significantly affect their obtaining knowledge of online hadith. This is because they often share or distribute hadith content related to religious issues. Knowledge sharing is believed to increase the understanding of members involved in an online group (Kumar, 2012). Similarly, the millennial scholars involved in this study also agreed that their interactions with the public in various online discussion groups helped increase their knowledge of hadith.

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Then the existence of a network with other scholars online also positively affects access to knowledge of the hadith of millennial scholars. Researchers found that millennial scholars connected with other scholars through various online social networks that could increase their understanding of hadith. Peer scholars often post or send multiple sources of knowledge of hadith online to them, especially in the form of digital hadiths. For example, one person shows how to find out the sanad of hadith through an online site by sending an online site such as the following:

ID	Author	Count 1	Count 2	Title	Category	Description
256	محمد بن إسماعيل البخاري	6953	6469	صحیح البخاری	عمر بن الخطاب	إلى دنيا يصيبها أو امرأة يتكحها فهجرته إلى ما هاجر إليه
457	الحسن بن علي الوخشي	---	75	الخامس من الوخشيات	عمر بن الخطاب	إتاما الأعمال بالثنية وإتاما لكل امرئ ما توى فمن كانت هجرته إلى الله ورسوله فهجرته إلى الله ورسوله ومن كانت هجرته إلى دنيا يصيبها أو إلى امرأته يتكحها فهجرته إلى ما هاجر إليه
576	أبو طاهر السلفي	---	4	أحاديث وحكايات للسلفي	عمر بن الخطاب	إتاما الأعمال بالثنية وإتاما لكل امرئ ما توى فمن كانت هجرته إلى الله وإلى رسوله فهجرته إلى الله وإلى رسوله ومن كانت هجرته إلى دنيا يصيبها أو امرأة يتكحها فهجرته إلى ما هاجر إليه
643	ابن التاجر	---	124	ذيل تاريخ بغداد لأبن التاجر	عمر بن الخطاب	الأعمال بالثنية
576	أبو طاهر السلفي	---	45	السادس والعشرون من المشيخة البغدادية لأبي طاهر السلفي	عمر بن الخطاب	الأعمال بالثنية وإتاما لكل امرئ ما توى
261	مسلم بن الحجاج	1910	3537	صحیح مسلم	عمر بن الخطاب	الأعمال بالثنية وإتاما لكل امرئ ما توى فمن كانت هجرته إلى الله ورسوله فهجرته إلى الله ورسوله ومن كانت هجرته لدنيا يصيبها أو امرأة يتزوجها فهجرته إلى ما هاجر إليه

Figure1. Example of a hadith study site

Figure 2 below has become one of the popular sources of hadith knowledge among millennial scholars because various hadiths can be found quickly. The experience of learning hadith through online sources like this has created a high sense of satisfaction among millennial scholars in learning and searching for hadith because learning hadith manually by reading various original yellow books would be very tiring. Moreover, he said that hadith to conventional scholars in madrasas or Islamic boarding schools would consume a lot of energy and time.

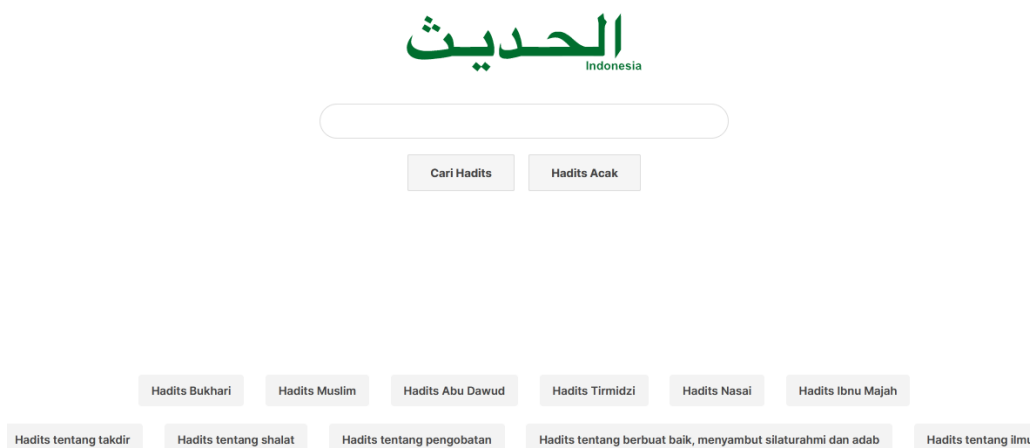


Figure 2. A Website to search for hadith

The site that can be used to search for these various hadiths can be accessed at <https://www.hadits.id/>. This site provides multiple hadiths such as Bukhari hadith, Muslim hadith, Abu Daud hadith, Tarmizi hadith, Nasal hadith, Ibn Majah hadith.

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Besides, this hadith site also provides various thematic-based hadiths such as hadith about destiny, hadith about prayer, hadith about medicine, hadith about doing good, and others.

Through online social networks, they also share or discuss various religious topics. Online social networks are not only for sharing information and knowledge about hadith but also for communication that allows online discussions to take place (Ahmed, Ahmad, Ahmad, & Zakaria, 2019). In the context of this research, the relationship between the scholars and other scholars, both young and senior scholars, has helped them to access hadith knowledge from their peers.

In general, the results of this study indicate that the three factors; online social interaction, the intensity of interaction with the ummah, and online networking with other scholars have significantly influenced millennial scholars to acquire hadith knowledge from online sources (see Figure 4.1). Millennial scholars also admit that the online space affects their interaction with the Muslim community to acquire new knowledge of hadith. We find that online discussion and distribution of information about hadith has become a new source of knowledge, as discovered by (De Wever, Keer, Schellens, & Valcke, 2010; Xiang & Gretzel, 2010). Other studies such as (Shang, Li, Wu, & Hou, 2011; Sigala & Chalkiti, 2014), also argue that the advent of Internet 2.0, which allows online discussion and content sharing, has created a new source of knowledge.

Most of the millennial scholars interviewed argued that the intensity of interaction in the online world contributed to their case of hadith knowledge. The power of the exchange is determined by the frequency with which they share, distribute, and discuss hadith-related information on online platforms (Li & Du, 2011; Nurdin, 2017). The millennial generation tends to share information through online media, such as closed discussion groups. For example, some Muslim communities tend to create WhatsApp or Facebook groups to share religious content such as hadith and fiqh (Rusli, Hasyim, & Nurdin, 2021). The sharing and distribution of information encouraged many scholars to discuss the information content, which later became a source of hadith knowledge. Sometimes, the Muslim community even set regular times to discuss Islamic teachings in a virtual environment.

Meanwhile, the network of millennial scholars with their online colleagues has also significantly influenced their decisions to access Islamic knowledge, adding to our new insights into the mechanism and impact of young scholars' relationships online on their hadith knowledge. Currently, most scholars share and distribute their da'wah content through online spaces. For example, Nurdin & Rusli (2013) found that most well-known scholars, such as Aa Gym, Abdul Shomad, Adi Hidayat, Ila Ham Arifin, and Khalid Bin Salamah have shared their da'wah content in which there are various hadiths through Youtube and Blogs. For thousands of years, most scholars have followed famous scholars' sharing and content.

### **B. Sharing Hadith Knowledge Online**

The hadith knowledge obtained online in daily activities also shows a significantly high level. The use of hadith in everyday life is related to answering fiqh questions asked by the people in the daily life of millennial scholars, such as worship and muamalah issues. Our study found that millennial scholars used hadith knowledge from online sources to make their daily fatwas or answer Muslim questions regarding Islamic fiqh and other worship issues. The relationship between online hadith knowledge acquisition and use in everyday social life has been discussed in several previous studies (misalnya: Avby, Nilsen, & Ellström, 2017; Nurdin, 2019). Acquiring various sources of Islamic hadith knowledge from online social interactions, interaction with the Muslim community, and networking with other scholars has increased the hadith knowledge of young scholars and increased their ability to make answers to various problems in social life and their daily lecture activities.

Our research also found that most millennial scholars rely heavily on various online sources of hadith knowledge, such as YouTube, senior scholars' blogs, and other online social networking content sharing, to answer their followers' daily problems. The findings underline that there is an increase in the trust of millennial scholars towards senior scholars who have Blogs and social media sites and their habit of sharing knowledge of hadith (Chai & Kim, 2010). More importantly, when trust in online sources of knowledge is high, millennial scholars may continue to use that knowledge in answering various problems of Muslims in their daily lives. This belief helps bring harmony between traditional and millennial generation scholars in providing and sharing hadith knowledge, as stated by Sisler (2007). In this case, presentations on Millennial scholars online can help traditional scholars distribute hadith knowledge to a broader ummah.

What is more interesting is that sharing hadith online has also been carried out using memes that were previously more popular in other fields, such as business, politics, and social affairs. Millennial scholars and a number of religious organizations have also used memes to spread hadith that can increase knowledge of the Islamic community. The shared hadith memes include thematic traditions related to prayer, hadith about the Day of Judgment, hadith related to making sacrifices, and hadith related to tolerance. The following are some examples of hadiths based on these themes, namely:

### 1. Prayer Hadith Memes

Prayer hadith memes shared by informants related to prayers that are often used in daily life. For example, the meme of the hadith of the prayer of makbul is easily accepted by Allah swt like the following.



Figure 3. Example of a prayer hadith memes

Some prayer hadith memes even come from blog sites that discuss the science of hadith, such as Ilmuhadist.blogspot.com. The results of this study also show how social media sites such as Blogs have played a role as a source of hadith learning for millennial scholars. This kind of understanding method certainly makes it easier for millennial scholars to understand hadith.

### 2. Memes Hadith of Sacrifice

The second hadith meme that millennial scholars often shares is related to the theme of sacrifice, such as the will to do good, sacrifice on the day of Hajj, and giving charity. Some examples of sacrificial prayer memes shared by millennial scholars on social media include the following:

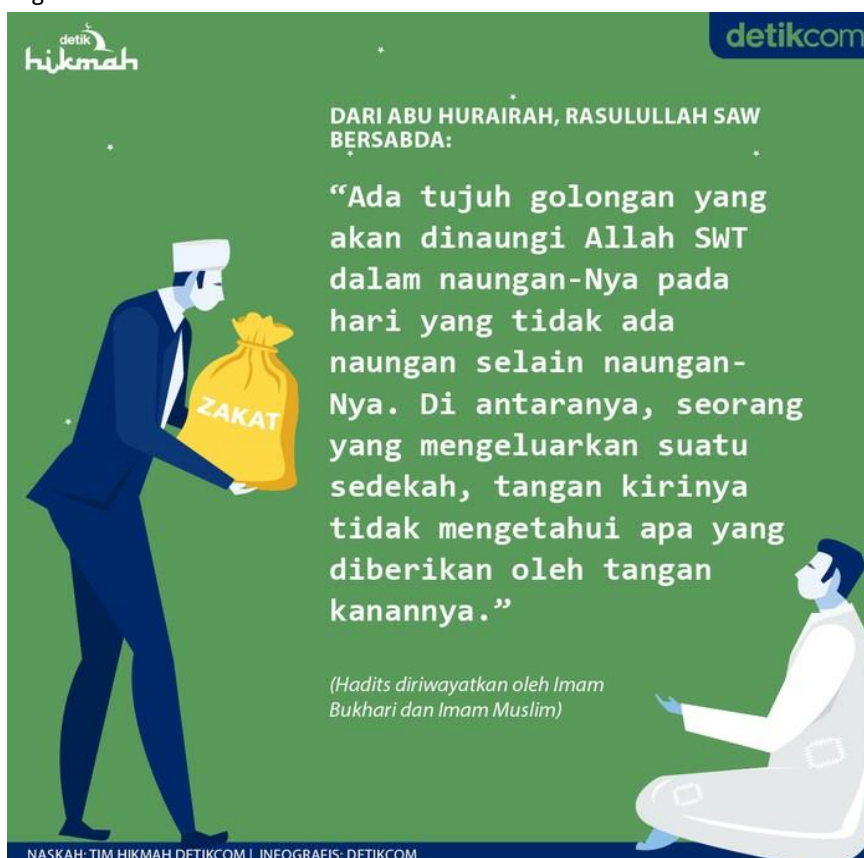


Figure 4. Example of a sacrificial hadith meme

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The hadith meme above explains about you donating or giving to charity. The concept of donating is the same as the concept of sacrifice because humans sacrifice by spending money to give to the poor.

### 3. Doomsday Hadith Meme

The third category of hadith memes shared online is the end-of-time hadith memes in a hadith which tell about the end of the world, the end of life, heaven, and hell. These hadith memes are mainly meant to increase the awareness of Muslims about this end of life and to prepare themselves by doing good deeds. Examples of these hadith memes include those shown in Figure 7 below:



Figure 5. Example of a grave punishment hadith meme

Figure 5 above shows the hadith memes shared through the millennial scholars' social media site Facebook. The hadith tells about the actions of humans who will be sucked into the grave. Meanwhile, the following eight images are examples of hadith memes about hell and heaven that are shared via telegram social media.

### C. Online Hadith Knowledge Source

Many online sites specifically dedicate their sites to posting various knowledge of hadith online. The sites post a lot of issues related to hadith-related everyday life. In Indonesia, five very popular websites could be used to study Islam, especially fiqh and Islamic law.

#### NU.OR.ID

This NU site is the oldest site among the four other Islamic sites. Several journalists manage the Nahdlatul Ulama (NU) website among the younger generation of NU. Among other Islamic organizations, only NU is seen as active in writing news, answering people's problems, and responding to other Islamic issues. The advantage of this site in answering Islamic concerns is that it always refers to the opinions of scholars first, then relates to the views of friends or the Prophet. Even though we are ordered to obey the Qur'an and Hadith, we also need intermediaries to understand both, namely scholars. In addition, the NU Online site has been included in the top-ranking list nationally. According to the rating site Alexa, NU Online is currently ranked 451st. This signifies that the NU Online portal is one of the most visited Islamic portals.

Besides that, NU also has other social media to broadcast Islamic information, such as Facebook, Instagram, and Youtube. On Facebook and Instagram, NU spreads various hadiths in the form of memes aimed at enlightening Muslims. Several video lectures, verses, and hadiths with multiple themes related to worship, social relations, and monotheism.

#### ISLAMI.CO

Not much different from NU Online, this Islami.co portal also presents basic to intermediate Islamic studies. However, this portal has identical characteristics: it always responds to political issues and their relationship with Islam. If the Millennial generation likes to discuss political matters and Islamic history, this portal deserves to be a reference for reading amidst a busy schedule. The ranking of this portal is also quite prestigious at the national level. This portal is far after NU Online.



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### BINCANGSYARIAH.COM

If people prefer listening to lectures rather than reading, then the BincangSyariah.com site can be a solution for those who don't have much time to read various hadiths because they may be tired after working all day. BincangSyariah.com also presents short videos on contemporary Islamic issues. In addition, for people who like to read articles, this portal also provides guidelines and procedures for the practice of daily worship, which can be said to be quite complete.

### RUMAHFIQH.COM

This Rumahfiqh website discusses various issues related to Islamic laws based on the Qur'an and the prophet's traditions. Scholars' understanding of the Qur'an and Hadith has become the primary source of fiqh law. In the content of this site, there is a discussion of various fiqh from various schools. The schools of jurisprudence currently exist Hanafi, Maliki, Shafii, and Hanbali. The advantages of this Rumahfiqh site do not only discuss one school of thought. But also often discuss the four schools of thought. If site visitors who are already at an intermediate level understand Islam, this Rumahfiqh is worthy of being a source of reference. This is the advantage of the Rumahfiqh.com portal.

Of the five websites above, two of them, Bincangsyariah.com and Rumahfiqh.com, even specifically post knowledge related to fiqh and Islamic law sourced from verses of the Qur'an and the prophet's hadith. The contents of the two websites are about fiqh, whether in the form of news, teaching, or questions and answers. While the other three websites do not name their sites with the word fiqh or sharia, the web content is also mainly related to fiqh and Islamic law. The content of the fiqh discussed is related to heavy things and light things about everyday life.

These online knowledge sources benefit the community and scholars or young scholars who are very intensive in using innovative technology such as smartphones and tablets. Some of the young scholars' sources we interviewed admitted that they were very intense in using online sources of knowledge as their reference in answering people's daily questions. For example, young scholars affiliated with specific religious organizations are very loyal to reading hadiths on websites created by organizations that are their affiliates. For example, a young scholar from NU is very happy to read hadith content on the Nu.or.id website. One young scholar we interviewed said:

*I read many books, but now it's better because everything is online. Like at NU, there is a website; I often read there because I saw those who posted various religious knowledge from genuine NU people. I got a lot of enlightenment because different contemporary hadith themes were there. Well...it really helps me when I'm lecturing someone asking about fiqh so that I can access hadiths on NU social media.* (PLU 1 informant)

The results of our study confirm previous research in other fields (e.g. Reyhav & Aguirre-Urreta, 2014), namely that today's society has also commonly adopted the acquisition of knowledge from online sources. We found that young scholars began to perceive that online hadith sources could be used as learning resources because they were convenient where access could be anytime. More importantly, the younger generation of scholars has also built a sense of trust in these online hadith sources. Indeed, some informants we interviewed do not believe the website or online postings are not clearly sourced. For example, an informant said:

*I don't want to believe that information about hadith is sent by unknown people or social media sites whose identities are unclear. But if the source of the website or social media is clear, such as the MUI website, NU, or Muhammadiyah social media, I believe that. I will use bonded news related to Islamic law sent in the form of hadith as a reference because I am sure that the people who post it must be people at MUI whose knowledge has been tested* (Informant T2)

The problem of distrust of online knowledge sources from unclear sources has become the character of online knowledge users in general. People tend to distrust information sources with unclear sources (Chrysochoidis, Strada, & Krystallis, 2009) because of concerns about the risks posed if the information is used in decision-making. In the context of this research, the young ulema will undoubtedly be at risk if the people ask where the source of the hadith conveyed when answering their questions comes from an unclear source. However, most importantly, this finding has provided a new understanding that trust in online sources of hadith knowledge originating from various confirmed sites, such as Nu.or.id and MUI, has the potential to give birth to new sources of hadith knowledge apart from scholars and institutions such as conventional knowledge institutions that require face-to-face contact. Some of the informants we interviewed also admitted that they used these sources of confirmed hadith knowledge to answer various questions.

## V. CONCLUSION

The study results show that most millennial scholars access information on hadith related to Islam, especially those about fiqh or Islamic law, online on various sites and social media. There is a significant influence between the interaction of millennial scholars with the community online in their acquisition of hadith knowledge. Then there is also an important influence between

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the quality of interaction with the ummah online with their level of knowledge acquisition of hadith. Furthermore, there is an online network relationship between millennial scholars and other scholars with the addition of hadith knowledge because they share hadith in the online realm. Millennial scholars become more confident in online sources of hadith knowledge if the references are verified, such as sites owned by official institutions. Various online platforms have given birth to new strategies for learning the daily hadith of millennial scholars, such as using social media to answer different fiqh questions asked by the ummah.

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### REFERENCES

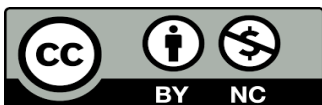
- 1) Ahmed, Yunis Ali, Ahmad, Mohammad Nazir, Ahmad, Norasnita, & Zakaria, Nor Hidayati. (2019). Social media for knowledge-sharing: A systematic literature review. *Telematics and Informatics*, 37, 72-112. doi:<https://doi.org/10.1016/j.tele.2018.01.015>
- 2) Al-Atsari, Ustadz Muslim. (2011). Nasikh dan Mansukh. Retrieved 10 Oktober 2021, from Republika <https://www.republika.co.id/berita/lms4tr/nasikh-dan-mansukh>
- 3) alfansury, Rahmat. (2021). Memahami Hadis Dengan Tinjauan Ilmu Asbab Al-Wurud. Retrieved 10 Oktober 2021, from UIN Sunan Kalijaga <http://ushuluddin.uin-suka.ac.id/id/kolom/detail/291/memahami-hadis-dengan-tinjauan-ilmu-asbab-al-wurud>
- 4) Anggoro, Taufan. (2019). Perkembangan Pemahaman Hadis di Indonesia: Analisis Pergeseran dan Tawaran Di Masa Kini. *Diya al-Afkar*, 7(1), 147-166.
- 5) Avby, Gunilla, Nilsen, Per, & Ellström, Per-Erik. (2017). Knowledge use and learning in everyday social work practice: a study in child investigation work. *Child & Family Social Work*, 22(S4), 51-61. doi:10.1111/cfs.12227
- 6) Balda, Janis Bragan, & Mora, Fernando. (2011). Adapting leadership theory and practice for the networked, millennial generation. *Journal of Leadership Studies*, 5(3), 13-24. doi:doi:10.1002/jls.20229
- 7) Chai, Sangmi, & Kim, Minkyun. (2010). What makes bloggers share knowledge? An investigation on the role of trust. *International Journal of Information Management*, 30(5), 408-415. doi:<https://doi.org/10.1016/j.ijinfomgt.2010.02.005>
- 8) Channa, Liliek. (2011). Memahami Makna Hadis Secara Tekstual Dan Kontekstual. *Ulumuna*, 15(2), 391-205.
- 9) Chrysochoidis, George, Strada, Anna, & Krystallis, Athanasios. (2009). Public trust in institutions and information sources regarding risk management and communication: towards integrating extant knowledge. *Journal of Risk Research*, 12(2), 137-185. doi:10.1080/13669870802637000
- 10) Cole, Gene, Smith, Richard, & Lucas, Laurie. (2002). The Debut of Generation Y in the American Workforce. *Journal of Business Administration Online*, 2(1), 10.
- 11) Creswell, John W., & Clark, Vicki L. Plano. (2011). *Designing and Conducting Mixed Methods Research* (2 ed.). Los Angeles: SAGE.
- 12) De Wever, Bram, Keer, Hilde Van, Schellens, Tammy, & Valcke, Martin. (2010). Roles as a structuring tool in online discussion groups: The differential impact of different roles on social knowledge construction. *Computers in Human Behavior*, 26(4), 516-523. doi:<https://doi.org/10.1016/j.chb.2009.08.008>
- 13) Dedi, Syahrial. (2018). Konsep Ta'wil Ushuliyin Dan Relevansinya Dengan Pembaharuan Hukum Islam. *Jurnal Ilmu Syariah*, 17(1), 1-18.
- 14) Egri, Carolyn P., & Ralston, David A. (2004). Generation Cohorts and Personal Values: A Comparison of China and the United States. *Organization Science*, 15(2), 210-220.
- 15) Ermawati, Ermawati, Musyahidah, Siti, & Nurdin, Nurdin. (2021). Muslim Society Perspective on Islamic Banking Corporate Social Responsibility in Indonesia (Based On Qur'an and Hadits Economic Themes). *International Journal of Business and Management Review*, 9(3), 29-40.
- 16) Espinoza, Chip, & Ukleja, Mick. (2010). *Managing Millennials: Discover the core competencies for managing today's workforce*. Hoboken, NJ: Wiley.
- 17) Fauji, Ahmad Irfan. (2018). *Pergeseran Metode Pemahaman Hadis Ulama Klasik Hingga Kontemporer*. (Bachelor), Universitas Islam Negeri Jakarta, Jakarta.
- 18) Gunter, Barrie, Nicholas, David, Huntington, Paul, & Williams, Peter. (2002). Online versus offline research: implications for evaluating digital media. *Aslib Proceedings*, 54(4), 229-239. doi:doi:10.1108/00012530210443339

## Analysis of Hadith Understanding Method among Millennial *Ulama* in Central Sulawesi, Indonesia

- 19) Hadi, Abdul. (2021). Bagaimana Cara Mengetahui Kesahihan Hadis?
- 20) Baca selengkapnya di artikel "Bagaimana Cara Mengetahui Kesahihan Hadis?", <https://tirto.id/ggFR>. Retrieved 10 Oktober 2021, from Tirto <https://tirto.id/bagaimana-cara-mengetahui-kesahihan-hadis-ggFR>
- 21) Howe, Neil, & Strauss, William. (2000). *Millennials Rising: The Next Great Generation*. New York: Vintage Books.
- 22) Jin, Leigh, & Robey, D. (2008). Bridging Social and Technical Interfaces in Organizations: An Interpretative Analysis of Time Space Distanciation *Information and Organization*, 18(3), 177-204.
- 23) Jokonya, Osden. (2016). *The Significance of Mixed Methods Research in Information Systems Research*. Paper presented at the MWAIS 2016 Proceedings.
- 24) Kumar, Naresh. (2012). The impact of knowledge sharing and Islamic work ethic on innovation capability. *Cross Cultural Management: An International Journal*, 19(2), 142-165. doi:10.1108/13527601211219847
- 25) Li, Feng, & Du, Timon C. (2011). Who is talking? An ontology-based opinion leader identification framework for word-of-mouth marketing in online social blogs. *Decision Support Systems*, 51(1), 190-197. doi:<https://doi.org/10.1016/j.dss.2010.12.007>
- 26) Ling Lim, Hwee. (2012). Generation Y workforce expectations: implications for the UAE. *Education, Business and Society: Contemporary Middle Eastern Issues*, 5(4), 281-293. doi:doi:10.1108/17537981211284452
- 27) Lloyd, Tom, Shaffer, Michele L., Christy, Stetter, Widome, Mark D., Repke, John, Weitekamp, Michael R., . . . Paul, Ian M. (2013). Health knowledge among the millennial generation. *Journal of public health research*, 2(1), 38-41. doi:10.4081/jphr.2013.e8
- 28) Mannheim, Karl. (1952). The problem of generations. In Karl Mannheim (Ed.), *Essays on the sociology of knowledge* (pp. 276-320). London: Routledge and Kegan Paul.
- 29) Minichiello, Victor, Aroni, Rosalie, Timewell, Eric, & Alexander, Loris. (1990). *In-Depth Interviewing : Researching People*. Melbourne: Longman Cheshire
- 30) Morgan, David L. (1996). Focus Group. *Annual Review of Sociology*, 22, 129 - 152.
- 31) Morgan, David L. (1997). *Focus Groups as Qualitative Research*. London: SAGE Publication, Inc.
- 32) Mukhtar, Mukhlis. (2011). Pemahaman Tekstual Dan Kontekstual Pakar Hadis Dan Pakar Fikih Seputar Sunnah Nabi : Studi Kritis atas Pemikiran Syaikh Muhammad Al-Ghazali. *Jurnal Hukum Diktum,,* 9(1), 81-92.
- 33) Nisa, Eva F. (2018). Social media and the birth of an Islamic social movement: ODOJ (One Day One Juz) in contemporary Indonesia. *Indonesia and the Malay world*, 46(134), 24-43. doi:10.1080/13639811.2017.1416758
- 34) Nurdin, Nurdin. (2017). To Research Online or Not to Research Online: Using Internet-Based Research in Islamic Studies Context. *Indonesian Journal of Islam and Muslim Societies*, 7(1), 31-54.
- 35) Nurdin, Nurdin. (2019). Knowledge Integration Strategy in Islamic Banks. In Almeida Helena & Sequeira Bernardete (Eds.), *The Role of Knowledge Transfer in Open Innovation* (pp. 118-138). Hershey, PA, USA: IGI Global.
- 36) Nurdin, Nurdin. (2021). Employing Online and Offline Qualitative Interpretive Case Studies in Understanding E-Procurement Effectiveness. *International Journal of Quantitative and Qualitative Research Methods*, 9(1), 23-41.
- 37) Nurdin, Nurdin, Nurliana, Nurliana, & Mashuri, Saepudin. (2022). Online Islamic Religious Education Learning During Covid-19 Pandemic *International Journal of Contemporary Islamic Education*, 4(1), 38-53.
- 38) Nurdin, Nurdin, & Pettalongi, Sagaf S. (2022). Menggunakan Paradigma Studi Kasus Kualitatif Interpretatif Online dan Offline Untuk Memahami Efektivitas Penerapan E-Procurement. *Coopetition: Jurnal Ilmiah Manajemen*, 13(2), 155-168.
- 39) Nurdin, Nurdin, & Rusli. (2013). Spiritualising New Media: The Use of Social Media for Da'wah Purposes within Indonesian Muslim Scholars. *Jurnal Komunikasi islam*, 3(1), 1-21.
- 40) Nurul, Alifah. (2021). PEMAHAMAN TEKSTUAL DAN KONTEKTUAL PADA HADIS Retrieved 2 Oktober 2021, from UIN Sunan Klaijaga <http://ushuluddin.uin-suka.ac.id/id/kolom/detail/287/pemahaman-tekstual-dan-kontekstual-pada-hadis>
- 41) Parent, Michael, Gallupe, R. Brent, Salisbury, Wm David, & Handelman, Jay M. (2000). Knowledge creation in focus groups: can group technologies help? *Information & Management*, 38(1), 47-58. doi:[http://dx.doi.org/10.1016/S0378-7206\(00\)00053-7](http://dx.doi.org/10.1016/S0378-7206(00)00053-7)
- 42) Reyhav, Iris, & Aguirre-Urreta, Miguel Ignacio. (2014). Adoption of the Internet for knowledge acquisition in R&D processes. *Behaviour & Information Technology*, 33(5), 452-469. doi:10.1080/0144929x.2013.765035
- 43) Rusli, Rusli, Hasyim, Muhammad Syarif, & Nurdin, Nurdin. (2021). A New Islamic Knowledge Production And Fatwa Rulings: How Indonesia's Young Muslim Scholars Interact With Online Sources. *Journal of Indonesian Islam*, 14(2), 499-518.
- 44) Rusli, Rusli, & Nurdin, Nurdin. (2021). Understanding Indonesia millennial *Ulama* online knowledge acquisition and use in daily fatwa making habits. *Education and Information Technologies*. doi:10.1007/s10639-021-10779-7

## Analysis of Hadith Understanding Method among Millennial *Ulama* in Central Sulawesi, Indonesia

- 45) Scharank, Peter. (2012, 16 November 2018). The online ummah. 12 August 2012. Retrieved from <https://www.economist.com/international/2012/08/18/the-online-ummah>
- 46) Sethuraman, Raj, Kerin, Roger A., & Cron, William L. (2005). A field study comparing online and offline data collection methods for identifying product attribute preferences using conjoint analysis. *Journal of Business Research*, 58(5), 602-610. doi:<https://doi.org/10.1016/j.jbusres.2003.09.009>
- 47) Shang, Shari S. C., Li, Eldon Y., Wu, Ya-Ling, & Hou, Oliver C. L. (2011). Understanding Web 2.0 service models: A knowledge-creating perspective. *Information & Management*, 48(4), 178-184. doi:<https://doi.org/10.1016/j.im.2011.01.005>
- 48) Shehu, Mohammed Isah, Othman, Muhammad Fuad Bin, & Osman, Nazariah Binti. (2017). The Social Media and Islam. *Sahel Analyst: Journal of Management Sciences*, 15(4), 67-80.
- 49) Sigala, Marianna, & Chalkiti, Kalotina. (2014). Investigating the exploitation of web 2.0 for knowledge management in the Greek tourism industry: An utilisation–importance analysis. *Computers in Human Behavior*, 30, 800-812. doi:<https://doi.org/10.1016/j.chb.2013.05.032>
- 50) Šisler, Vit. (2007). The Internet And The Construction Of Islamic Knowledge In Europe. *Masaryk University Journal of Law and Technology*, 1(2), 205-217.
- 51) Strauss, Anselm, & Corbin, Juliet M. (1998). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques* (2 ed.). California, USA: Sage Publications, Inc.
- 52) Tasbih. (2016). Urgensi Pemahaman Kontekstual Hadis (Refleksi terhadap Wacana Islam Nusantara). *Al-Ulum*, 16(1), 81-102.
- 53) Tohir, Jaisy Rahman. (2018). Menteri Agama Sebut Rujukan Utama Generasi Milenial dalam Beragama Saat Ini adalah Internet Retrieved 16 November 2018, from Tribun Jakarta <http://jakarta.tribunnews.com/2018/04/16/menteri-agama-sebut-rujukan-utama-generasi-milenial-dalam-beragama-saat-ini-adalah-internet#gref>
- 54) Turner, Daniel W. (2010). Qualitative Interview Design: A Practical Guide for Novice Investigators. *The Qualitative Report*, 15(3).
- 55) Venkatesh, Viswanath, Brown, Susan A., & Bala, Hillol. (2013). Bridging the Qualitative-Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems *MIS Quarterly*, 37(1), 21-54.
- 56) Wahid, Ramli Abdul. (2019). Ulama hadis di Indonesia Kontemporer *Ihya al-Arabiyah: Jurnal Pendidikan bahasa dan Sastra Arab*, 5(2), 123-145.
- 57) Xiang, Zheng, & Gretzel, Ulrike. (2010). Role of social media in online travel information search. *Tourism Management*, 31(2), 179-188. doi:<http://dx.doi.org/10.1016/j.tourman.2009.02.016>



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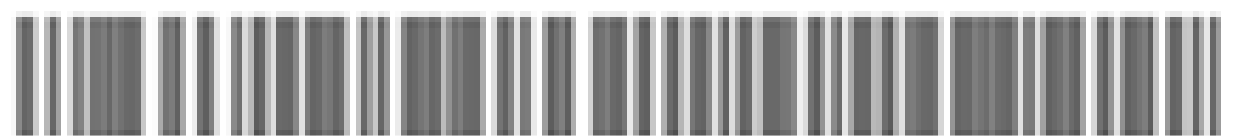
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